ARKANSAS AMBIENT AIR MONITORING NETWORK
ANNUAL NETWORK PLAN 2015–2016

Prepared By

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Table of Contents

List of Tables

List of Figures

1. Introduction

The United States Environmental Protection Agency (EPA) has been responsible for establishing and updating the National Ambient Air Quality Standard (NAAQS) under the Federal Clean Air Act. In accordance with 40 CFR Part 58, Subpart B § 58.10, the State of Arkansas is required to submit an annual air monitoring network plan to EPA:

> … the State, or where applicable local, agency shall adopt and submit to the Regional Administrator an annual monitoring network plan which shall provide for the establishment and maintenance of an air quality surveillance system that consists of a network of SLAMS monitoring stations including FRM, FEM, and ARM monitors that are part of SLAMS, NCore stations, STN stations, State speciation stations, SPM stations, and/or, in serious, severe and extreme ozone nonattainment areas, PAMS stations, and SPM monitoring stations…

The State of Arkansas's 2015–2016 Annual Network Plan will be submitted to EPA Region 6 in Dallas, Texas. Federal regulations require that the plan be made available for public inspection for 30 days prior to submission to EPA Region 6.

This network plan provides the framework for the establishment and maintenance of an air quality surveillance system. This plan represents Arkansas Department of Environmental Quality's (ADEQ's) commitment to protect the health of the citizens of Arkansas through ambient air monitoring using the latest and best technology that is commercially available, and to communicate the data collected as quickly and accurately as possible. Any proposed modifications to the network, as determined by the annual network review process each year, will be stated in the document.

2. Population Statistics

Minimum monitoring requirements vary for each pollutant and are based on a combination of factors such as population data, previous year's concentration levels, and metropolitan area boundaries. Table 1 contains the population statistics for the Metropolitan Statistical Areas (MSAs) located fully or partially in Arkansas.

Table 1. Population Statistics for Metropolitan Statistical Areas (MSAs) in Arkansas

Metropolitan Statistical Area (MSA)	2010 Census
Fayetteville-Springdale-Rogers, AR-MO	463,204
Fort Smith, AR-OK	280,467
Hot Springs, AR	96,024
Jonesboro, AR	121,026
Little Rock-North Little Rock-Conway, AR	699,757
Memphis, TN-MS-AR	1,324,829
Pine Bluff, AR	100,258
Texarkana, TX-AR	149,198

3. ADEQ Monitoring Network

ADEQ maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, App. A, designs its network in accordance with App. D, and locates its sites to meet all requirements of App. E. ADEQ operates numerous air monitors at various monitoring sites throughout the State of Arkansas as shown in Figure 1. Monitors operated by ADEQ are currently maintained by the Air Laboratory Division of the Technical Services Division. Data from these monitoring sites are entered into the national Air Quality Systems (AQS) database and made available to the public within 90 days following the end of each calendar quarter. A brief site summary for ADEQ operated monitors is detailed in Table 2. The AQS identification number in column one of Table 2 is a unique site identification number that is assigned to each and every monitoring site in the network.

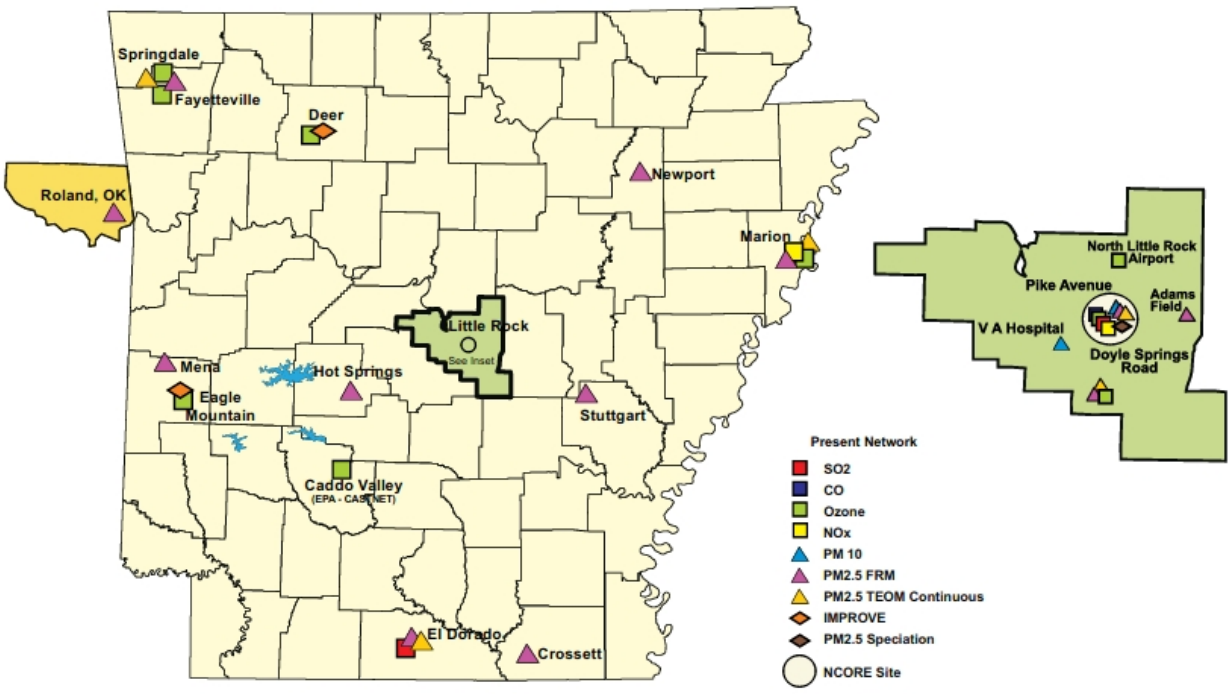

Figure 1. Map of ADEQ Air Monitoring Network

Table 2. ADEQ Operated SLAMS Monitor Information

AQS ID #	Site Name	Address/Location	Latitude, Longitude	Station Type	Pollutants Measured	Method Code	Sampling Method
05-001-0011	Stuttgart	1703 N. Beurkle	34.518392, -91.558822	SLAMS	$PM_{2.5}$	143	R&P 2000 FRM
05-003-0005	Crossett	201 Unity Rd.	33.136708, -91.950233	SLAMS	$PM_{2.5}$	143	R&P 2000 FRM
05-035-0005	Marion	Polk & Colonial Dr.	35.197178, -90.193047	SLAMS	$PM_{2.5}$	143	R&P 2000 FRM
				SLAMS	$PM_{2.5}$	105	R&P TEOM
				SLAMS	Ozone		UV Photometric
				SLAMS	NO_2		Chemiluminescence
05-051-0003	Hot Springs	300 Werner	34.469309, -93.000000	SLAMS	$PM_{2.5}$*	143	R&P 2000 FRM
05-067-0001	Newport	7648 Victory Blvd.	35.638069, -91.189381	SLAMS	$PM_{2.5}$	143	R&P 2000 FRM
05-101-0002	Deer	Hwy 16	35.832633, -93.208072	SLAMS	Ozone		UV Photometric
05-113-0002	Mena	Hornbeck Rd	34.583581, -94.226019	SLAMS	$PM_{2.5}$	143	R&P 2000 FRM
05-113-0003	Eagle Mtn	463 Polk 631	34.454428, -94.143317	SLAMS	Ozone		UV Photometric
05-119-0007	PARR (NCore)	Pike Ave at River Road	34.756072, -92.281139	SLAMS	$PM_{2.5}$*	145	R & P 2025 FRM
				SLAMS	$PM_{2.5}$	105	R&P TEOM
				SLAMS	PM_{10}*	127	Gravimetric
				SLAMS	$PM_{10-2.5}$*	176	Gravimetric/FRM
				SLAMS	Ozone		UV Photometric
				SLAMS	NO_x		Chemiluminescence
				SLAMS	Speciation	810	Low Volume
				SLAMS	NO_y		Chemiluminescence
				SLAMS	Trace SO_2		Infrared
				SLAMS	Trace CO		
				SLAMS	Pb*	81	Gravimetric
05-119-1002	NLRAP	Remount Rd	34.835606, -92.260425	SLAMS	Ozone		UV Photometric
05-119-1004	Adams Field	1701 S. Bond	34.729486, -92.243431	SLAMS	$PM_{2.5}$	143	R&P 2000 FRM
05-119-1007	VA	4300 Block of West 7th	34.744814, -92.319906	SLAMS	PM10	127	Gravimetric
05-119-1008	DSR	Doyle Springs Rd	34.681225, -92.328539	SLAMS	$PM_{2.5}$	143	R&P 2025 FRM
				SLAMS	$PM_{2.5}$	105	R&P TEOM
				SLAMS	Ozone		UV Photometric
40-135-9021	Roland, OK	207 Cherokee Blvd	35.40814, -94.524413	SLAMS	$PM_{2.5}$	145	R&P 2025 FRM
05-139-0006	El Dorado	Union Memorial Hospital	33.220122, -92.669453	SLAMS	$PM_{2.5}$	143	R&P 2000 FRM
				SLAMS	$PM_{2.5}$	105	R&P TEOM
				SLAMS	SO2		Pulsed Fluorescent
05-143-0005	Springdale	600 S. Old Missouri Rd	36.179617, -94.116611	SLAMS	$PM_{2.5}$	145	R&P 2025 FRM
				SLAMS	$PM_{2.5}$	105	R&P TEOM
				SLAMS	Ozone		UV Photometric
05-143-0006	Fayetteville	429 Ernest Lancaster Dr.	36.011703, -94.167436	SLAMS	Ozone		UV Photometric
* Collocated Monitors							

Table 2. ADEQ Operated SLAMS Monitor Information (continued)

AQS ID #	Site Name	Pollutants Measured	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comp.	MSA
05-001-0011	Stuttgart	$PM_{2.5}$	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-003-0005	Crossett	$PM_{2.5}$	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-035-0005	Marion	$PM_{2.5}$ $PM_{2.5}$ Ozone NO_2	Daily 1 in 3 Continuous Continuous Continuous	Regional Transport	Neighborhood Neighborhood Neighborhood Neighborhood Area Wide	Yes No Yes Yes	Memphis
05-051-0003	Hot Springs	$PM_{2.5}$*	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Hot Springs
05-067-0001	Newport	$PM_{2.5}$	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-101-0002	Deer	Ozone	Continuous	Background	Neighborhood	Yes	Not in a MSA
05-113-0002	Mena	$PM_{2.5}$	Daily 1 in 3	Regional Background	Neighborhood	Yes	Not in a MSA
05-113-0003	Eagle Mtn	Ozone	Continuous	Regional Transport	Neighborhood	Yes	Not in a MSA
05-119-0007	PARR (NCore)	$PM_{2.5}$* $PM_{2.5}$ PM_{10}* Ozone NO_x Speciation CO NO_y Trace SO_2 Trace CO Pb*	Daily 1 in 1 Continuous Daily 1 in 3 Continuous Continuous Daily 1 in 3 Continuous Continuous Continuous Continuous Daily 1 in 6	Population Exposure Population Exposure Population Exposure Population Exposure Susceptible and Vulnerable Population Exposure Population Exposure Population Exposure Population Exposure Population Exposure Population Exposure Population Exposure	Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood	Yes No Yes Yes Yes No Yes No Yes No No	Little Rock
05-119-1002	NLRAP	Ozone	Continuous	Population Exposure	Neighborhood	Yes	Little Rock
05-119-1004	Adams Field	$PM_{2.5}$	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Little Rock
05-119-1007	VA	PM_{10}	Daily 1 in 6	Population Exposure	Neighborhood	Yes	Little Rock
05-119-1008	DSR	$PM_{2.5}$ $PM_{2.5}$ Ozone	Daily 1 in 3 Continuous Continuous	Population Exposure	Neighborhood Neighborhood Neighborhood	Yes No Yes	Little Rock
40-135-9021	Roland, OK	$PM_{2.5}$	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Fort Smith
05-139-0006	El Dorado	$PM_{2.5}$ $PM_{2.5}$ SO_2	Daily 1 in 3 Continuous Continuous	Population Exposure Population Exposure Population Exposure	Neighborhood Neighborhood Neighborhood	Yes No Yes	Not in a MSA
05-143-0005	Springdale	$PM_{2.5}$ $PM_{2.5}$ Ozone	Continuous Daily 1 in 3	Population Exposure Population Exposure AQI	Neighborhood Neighborhood	No Yes	Fayetteville
05-143-0006	Fayetteville	Ozone	Continuous	Population Exposure	Neighborhood	Yes	Fayetteville
* Collocated Monitors							

3.1 Ozone Network

The required number of ozone monitors for MSAs in Arkansas is listed in Table 3. The minimum number of ozone monitors is determined by the MSA population from the latest Census and the previous year's design value for the area according to Table D-2 of 40 CFR Part 58 App. D § 4.1.

Table 3. Required Minimum Number of Ozone SLAMS for MSAs in Arkansas

Metropolitan Statistical Area (MSA)	2010 Census	Monitors Required[1]
Fayetteville-Springdale-Rogers, AR-MO	463,204	2
Fort Smith, AR-OK	280,467	1
Hot Springs, AR	96,024	0
Jonesboro, AR	121,026	0
Little Rock-North Little Rock-Conway, AR	699,757	2
Memphis, TN-MS-AR	1,324,829	2
Pine Bluff, AR	100,258	0
Texarkana, TX-AR	149,198	0
[1] Based on 2014 design value		

Arkansas meets or exceeds the SLAMS ozone requirement for each MSA. ADEQ operates three monitors in the Little Rock-North Little Rock-Conway, AR MSA and two in the Fayetteville-Springdale-Rogers, AR-MO MSA. ADEQ only operates one of the five SLAMS ozone monitors in the Memphis, TN-MS-AR MSA, with the other four operated by either Memphis/Shelby County Health Department (MSCHD) or Mississippi Department of Environmental Quality (MDEQ). The required monitor in the Fort Smith, AR-OK MSA is covered by the ozone monitor in Roland, OK, which is operated by Cherokee Nation. There are two additional SLAMS ozone monitors in the rural areas of Deer and Eagle Mountain which are used to enhance EPA's AIRNOW ozone mapping program and to determine background and transport ozone.

Table 4. Proposed Schedule and Latest Design Value for ADEQ Ozone Sites

AQS ID #	Sampling Schedule		8-Hour Ozone (ppm)				
	Current	Proposed	2012	2013	2014	DV	DV % NAAQS
05-035-0005	Continuous	Continuous	0.079	0.067	0.067	0.071	95%
05-101-0002	Continuous	Continuous	0.068	0.064	0.063	0.066	87%
05-113-0003	Continuous	Continuous	0.071	0.065	0.065	0.067	89%
05-119-0007	Continuous	Continuous	0.076	0.064	0.066	0.068	91%
05-119-1002	Continuous	Discontinue	0.079	0.070	0.065	0.071	95%
05-119-1008	Continuous	Continuous	0.080	0.068	0.065	0.071	95%
05-143-0005	Continuous	Continuous	0.076	0.065	0.061	0.067	89%
05-143-0006	Continuous	Continuous	0.079	0.066	0.064	0.069	92%

ADEQ plans to discontinue the ozone monitor at the North Little Rock Airport (05-119-1002) by September 1, 2015 due to the current lease expiration date. ADEQ is unable to enter into an

agreeable long term lease agreement given resource and funding limitations which are beyond agency control. The remaining continuous monitoring network will continue to satisfy EPA monitoring requirements for all MSAs. ADEQ remains focused on maintaining compliance of the NAAQS and based on evaluation of historical data believes that discontinuation of this site will not compromise meaningful and representative data collection needed for implementation of the ozone NAAQS. The North Little Rock Airport monitor data and historical data trends have been consistent with the two other Little Rock-North Little Rock-Conway, AR MSA monitors (Figure 2), one of which is also located on the northern side of Pulaski County. As the number of monitors in the Little Rock-North Little Rock-Conway, AR MSA currently exceeds the monitoring requirement, discontinuation of the North Little Rock Airport monitor will leave the Little Rock-North Little Rock-Conway, AR MSA with two ozone monitors in locations which are most representative of highest population density areas and which will continue to meet the monitoring requirements as set by 40 CFR Part 58 App. D. The additional monitoring equipment will be available to be utilized by ADEQ to conduct special purpose monitoring as needed to inform air quality planning decisions for the Little Rock-North Little Rock-Conway, AR MSA and/or other MSAs.

ADEQ is not proposing any other changes to the monitoring network at this time. ADEQ will re-evaluate the ozone network in the 2016 Annual Network Plan with EPA's finalization of the revised ozone NAAQS in October 2015. Information regarding the SLAMS ozone monitoring sites operated by ADEQ is listed in Table 4.

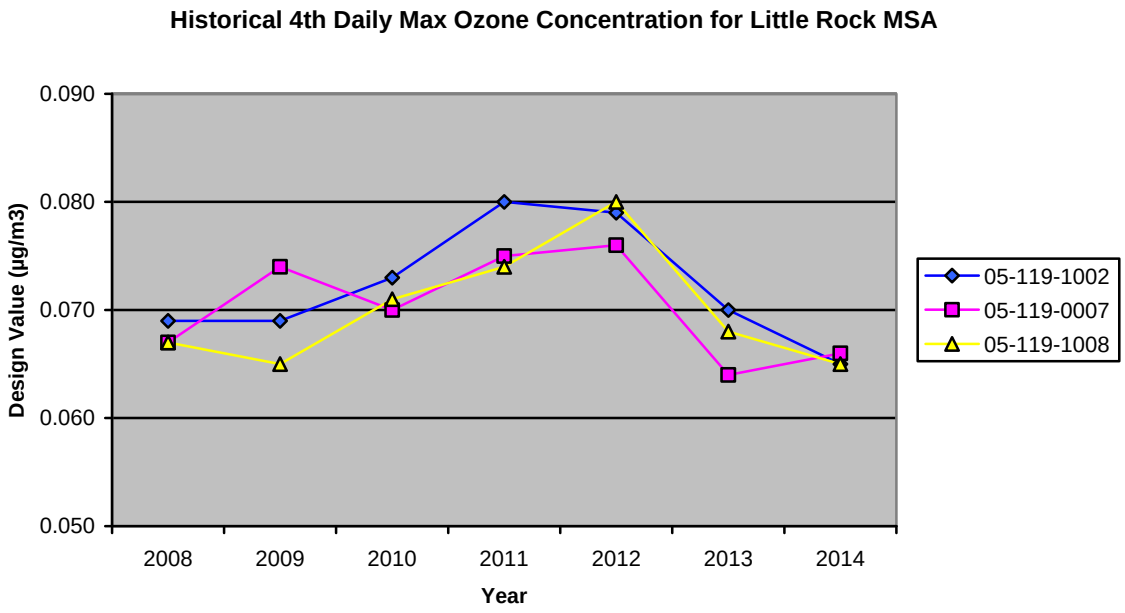

Figure 2. Historical 4th Daily Maximum Ozone Concentration for Little Rock MSA Monitors

In addition to the SLAMS network, EPA operates one ozone monitor (05-019-9991) as part of the Clean Air Status and Trends Network (CASTNET). This ozone monitor is compliant with the regulatory requirements in 40 CFR Parts 50, 53 and 58; therefore, ozone measurements from this site may also be used to determine if an area meets, or exceeds, the NAAQS.

3.2 Particulate Matter Network

3.2.1 Fine Particulate Matter ($PM_{2.5}$)

The number of SLAMS $PM_{2.5}$ monitors for MSAs in Arkansas is listed in Table 5. According to the criteria listed in Table D-5 of 40 CFR Part 58 App. D § 4.7.1, the number of $PM_{2.5}$ monitors is determined by the MSA population from the latest Census and the previous year's design value for the area.

Table 5. Required Minimum Number of $PM_{2.5}$ SLAMS for MSAs in Arkansas

Metropolitan Statistical Area (MSA)	2010 Census	Monitors Required[1]
Fayetteville-Springdale-Rogers, AR-MO	463,204	0
Fort Smith, AR-OK	280,467	0
Hot Springs, AR	96,024	0
Jonesboro, AR	121,026	0
Little Rock-North Little Rock-Conway, AR	699,757	2
Memphis, TN-MS-AR	1,324,829	2
Pine Bluff, AR	100,258	0
Texarkana, TX-AR	149,198	0
[1] Based on 2014 design value		

Arkansas has met or exceeded the SLAMS requirement for each MSA. ADEQ operates three monitors in the Little Rock-North Little Rock-Conway, AR MSA. In addition to the one monitor operated by ADEQ in the Memphis, TN-MS-AR MSA, there are three additional SLAMS monitors operated by either MSCHD or MDEQ. The Fayetteville-Springdale-Rogers, AR-MO MSA, Fort Smith, AR-OK MSA, and Hot Springs, AR MSA each have one monitor in operation. In addition, the Texas Commission on Environmental Quality (TCEQ) operates a monitor in Texarkana, TX that covers the Texarkana, TX-AR MSA.

ADEQ also operates an additional five $PM_{2.5}$ monitoring sites not located in MSAs. Additional information regarding the $PM_{2.5}$ monitoring sites operated by ADEQ is listed in Table 7. The collocated FRM monitors for Hot Springs (05-051-0003) and PARR (05-119-0007) are operating on a 1:12 sampling schedule. In addition, the following sites are collocated with TEOM continuous monitor: Marion (05-035-0005), PARR (05-119-0007), DSR (05-119-1008), El Dorado (05-139-0006), and Springdale (05-143-0005).

Table 6 lists the monitoring sites that are used for daily Air Quality Index (AQI) reporting. The monitors at these locations also report hourly data to the AIRNOW web page to be used for real-time air quality particulate mapping.

Table 6. Continuous $PM_{2.5}$ AQI Monitoring Site Information

AQS ID #	Site Name	Sampling Frequency
05-143-0005	Springdale	Hourly
05-119-0007	PARR	Hourly

The only change to the $PM_{2.5}$ network that ADEQ is proposing is to discontinue the $PM_{2.5}$ monitor in Newport (05-067-0001) on January 1, 2016. ADEQ is proposing the removal of the monitor due to problems with electricity at the site; in addition, the current location will in the near future no longer meet EPA's siting criteria due to tree growth on adjacent property. After analysis, ADEQ believes that removal of the Newport monitor will not compromise the data collection needed for implementation of the $PM_{2.5}$ NAAQS, as the Newport monitor have been consistently been under 80 percent for both the annual and 24-hour NAAQS as shown in Figure 3.

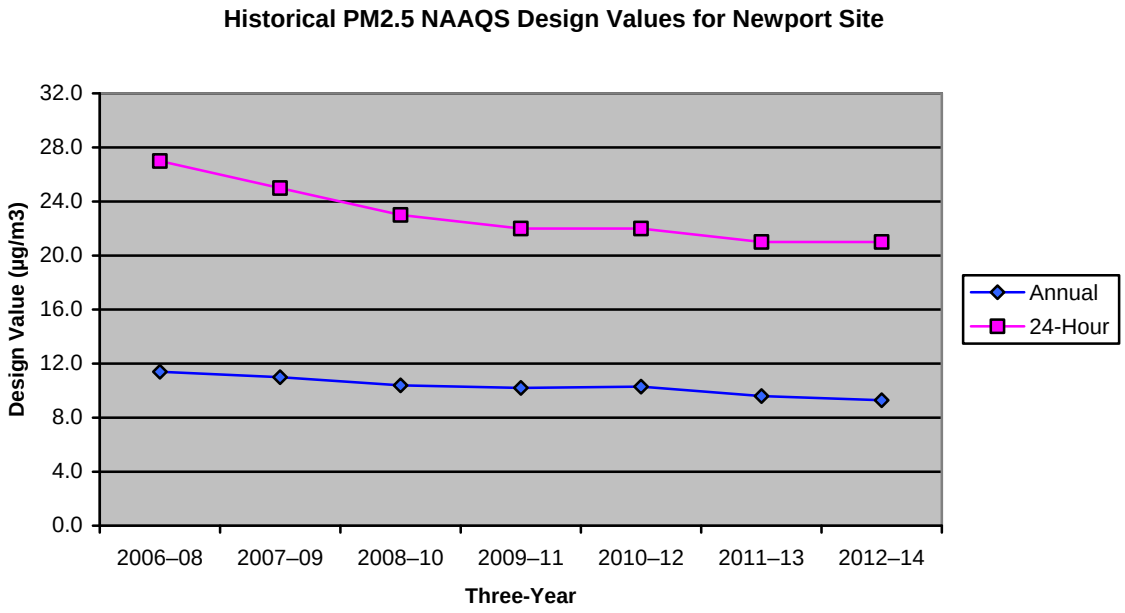

Figure 3. Historical $PM_{2.5}$ NAAQS (Annual and 24-Hour) for Newport (05-067-0001)

Table 7. Proposed Schedule and Latest Design Value for ADEQ $PM_{2.5}$ Sites

AQS ID #	Sampling Schedule		24-Hour $PM_{2.5}$ (µg/m^3)					Annual $PM_{2.5}$ (µg/m^3)					Collocated with TEOM
	Current	Proposed	2012	2013	2014	DV	DV % NAAQS	2012	2013	2014	DV	DV % NAAQS	
05-001-0011	1:3	1:3	18.5	22.1	22.4	21	60%	10.0	9.5	9.1	9.5	79%	No
05-003-0005	1:3	1:3	21.0	20.6	22.6	21	60%	10.0	9.1	8.6	9.2	77%	No
05-035-0005	1:3	1:3	24.7	21.9	24.7	24	69%	10.0	10.0	9.3	9.8	82%	Yes
05-051-0003	1:3	1:3	22.0	20.3	21.3	21	60%	10.5	9.4	9.1	9.7	81%	No
05-067-0001	1:3	Discontinue	18.6	20.9	23.4[1]	21	60%	9.4	9.1	9.6[1]	9.3	78%	No
05-113-0002	1:3	1:3	22.6	22.6	22.0	22	63%	10.0	9.9	9.4	9.8	82%	No
05-119-0007	1:1	1:1	22.6	20.7	21.9	22	63%	11.3	10.4	10.1	10.6	88%	Yes
05-119-1004	1:3	1:3	25.8	28.6	22.1	26	74%	11.1	10.6	9.4	10.4	87%	No
05-119-1008	1:3	1:3	27.1	22.6	23.3	24	69%	11.6	11.0	10.8	11.1	93%	Yes
05-139-0006	1:3	1:3	24.5	20.4	19.0	21	60%	10.9	9.6	9.0	9.8	82%	Yes
05-143-0005	1:3	1:3	20.0	19.6	21.2	20	57%	9.6	9.3	8.7	9.2	77%	Yes
40-135-9021	1:3	1:3	22.2	21.8	22.2	22	63%	10.2	9.7	9.3	9.7	81%	No

[1] Site did not meet data completeness

3.2.2 Particulate Matter (PM_{10})

The range of number of SLAMS PM_{10} monitors for Arkansas MSA is listed in Table 8, as determined by Table D-4 of 40 CFR Part 58 App. D § 4.6. The range of PM_{10} monitors a determined by the population size of the MSA from the latest Census and the previous year's design value for the area.

Table 8. Required Minimum Number of PM_{10} SLAMS for MSAs in Arkansas

Metropolitan Statistical Area (MSA)	2010 Census	Monitors Required[1]
Fayetteville-Springdale-Rogers, AR-MO	463,204	0–1
Fort Smith, AR-OK	280,467	0–1
Hot Springs, AR	96,024	0
Jonesboro, AR	121,026	0
Little Rock-North Little Rock-Conway, AR	699,757	1–2
Memphis, TN-MS-AR	1,324,829	2–4
Pine Bluff, AR	100,258	0
Texarkana, TX-AR	149,198	0
[1] Based on 2014 design value		

ADEQ is operating two PM_{10} monitoring sites, both operating in the Little Rock-North Little Rock-Conway, AR MSA. The PARR site (05-119-0007) also has a collocated PM_{10} monitor operating on a 1:12 sampling schedule. The two PM_{10} sites in the Memphis, TN-MS-AR MSA are operated by MSCHD.

Information regarding the two existing PM_{10} sites operated by ADEQ in the Little Rock-North Little Rock-Conway, AR MSA is located in Table 9. ADEQ will continue to monitor the population using the latest Census for each MSA to determine the number of monitors required as described in 40 CFR 58 App. D § 4.6.

Table 9. Proposed Schedule and Latest Estimated Exceedance for ADEQ PM_{10} Sites

AQS ID #	Sampling Schedule		Estimated Exceedance				
	Current	Proposed	2012	2013	2014	3-Yr Avg.	% NAAQS
05-119-0007	1:3	1:3	0.0	0.0	0.0	0.0	0%
05-119-1007	1:6	1:6	0.0	0.0	0.0	0.0	0%

3.2.3 Coarse Particulate Matter ($PM_{10-2.5}$)

The $PM_{10-2.5}$ monitoring is performed at the PARR (05-119-0007) as part of the NCore requirement. The monitor is also operating on a 1:3 sampling schedule as required. No changes are being requested for this monitor.

3.2.4 Chemical Speciation

$PM_{2.5}$ speciation sampling is performed at the PARR (05-119-0007) as part of the NCore requirement. No changes are being requested for this monitor.

3.3 Sulfur Dioxide Network

The minimum number of SLAMS SO_2 monitors for Arkansas core based statistical areas (CBSAs) by the Population Weighted Emissions Index (PWEI) is listed in Table 10, as determined by 40 CFR Part 58 App. D § 4.4.2. The minimum number of SO_2 monitors is determined by CBSA population and the total SO_2 emitted within the CBSA. Population data is based on the most current Census or estimate and emissions data is from the most recent National Emissions Inventory (NEI).

Table 10. Required Minimum Number of SO_2 SLAMS for MSAs in Arkansas

Core Based Statistical Area (CBSA)	2014 Estimate	2011 NEI SO_2 Emissions (tpy)	PWEI	Monitors Required
Metropolitan Statistical Area				
Fayetteville-Springdale-Rogers, AR-MO	501,653	9,020	4,525	0
Fort Smith, AR-OK	279,592	4,269	1,193	0
Hot Springs, AR	97,322	85	8	0
Jonesboro, AR	126,764	302	38	0
Little Rock-North Little Rock-Conway, AR	729,135	648	473	0
Memphis, TN-MS-AR	1,343,230	21,205	28,483	1
Pine Bluff, AR	94,716	33,791	3,201	0
Texarkana, TX-AR	149,235	2,444	365	0
Micropolitan Statistical Area				
Arkadelphia, AR	22,576	215	5	0
Batesville, AR	36,959	34,008	1,257	0
Blytheville, AR	44,235	3,696	164	0
Camden, AR	30,030	166	5	0
El Dorado, AR	40,227	398	16	0
Forrest City, AR	26,899	100	3	0
Harrison, AR	45,100	182	8	0
Helena-West Helena, AR	19,930	189	4	0
Magnolia, AR	23,933	1,589	38	0
Malvern, AR	33,368	133	4	0
Mountain Home, AR	40,857	242	10	0
Paragould, AR	43,694	76	3	0
Russellville, AR	85,152	387	33	0
Searcy, AR	78,592	122	10	0

The Memphis, TN-MS-AR CBSA area is the only CBSA that requires a SO_2 monitor. The required SO_2 monitor in the Memphis CBSA is operated by MSCHD. ADEQ will continue to monitor the PWEI value for the Fayetteville-Springdale-Rogers, AR-MO CBSA. ADEQ also operates two additional SO_2 monitoring sites in the state: PARR (05-119-0007) and El Dorado (05-139-0006). EPA Region 6 approved ADEQ's request, from the 2014 Annual Network Plan, to remove the routine SO_2 monitor at site PARR. The routine monitor was removed on January 1, 2015. The trace SO_2 monitor remains in operation as part of the NCore requirement. There are no proposed changes to the SO_2 network at this time.

In addition, if ADEQ opts to characterize areas through monitoring for the 2010 1-hour NAAQS, any additional changes to the SO_2 network will be addressed in the next annual network plan. Source oriented monitors are not required to be operational until January 1, 2017 according to the proposed SO_2 Data Requirements Rule. ADEQ will adjust the timeframe accordingly if the monitor operational date changes in the finalized SO_2 Data Requirements Rule.

3.4 Nitrogen Dioxide Network

There are two NO_2 sites in Arkansas operated by ADEQ: PARR (05-119-007) and Marion (05-035-0005). The Marion monitor operated by ADEQ was approved by EPA Region 6 to fulfill the area-wide requirement for the Memphis, TN-MS-AR MSA. Area-wide requirement is determined by population size of the CBSA. Memphis. TN-MS-AR MSA is required to have one area-wide NO_2 monitor as the CBSA population exceeded 1,000,000. The PARR site meets the criteria for the RA-40 national requirement for susceptible and vulnerable populations as listed in 40 CFR Part 58, App. D § 4.3.4. There are no proposed changes to ADEQ's NO_2 network at this time.

The near-road NO_2 monitor for the Little Rock-North Little Rock-Conway, AR MSA will be address by ADEQ in the next annual network plan, as the near-road NO_2 monitors are not required to be operational until January 1, 2017. The near-road NO_2 monitor required for the Memphis, TN-MS-AR MSA was addressed by MSCHD and began operating on July 1, 2014.

NO/NO_y measurements are monitored at the PARR site as part of the NCore requirement. This monitor produces conservative estimates for NO_2 as indicated in 40 CFR Part 58, App. D § 4.3.6.

3.5 Carbon Monoxide Network

ADEQ currently operates one CO monitor at site PARR (05-119-0007), the required trace CO monitor for NCore monitoring. EPA Region 6 approved ADEQ's request, from the 2014 Annual Network Plan, to remove the routine CO monitor at site PARR. The routine monitor was removed on January 1, 2015. There are no proposed changes to the CO network at this time.

The requirement for collocation of a CO monitor at the near-road NO_2 site for the Memphis, TN-MS-AR MSA was addressed by MSCHD.

3.6 Lead Network

ADEQ has a lead sampler as part of the NCore monitoring requirement. This site also has a collocated Pb-PM_{10} monitor operating on a 1:12 sampling schedule.

ADEQ currently does not have any source-oriented monitors for lead. Source-oriented monitoring is not required if Arkansas facilities are either below half-a-ton per year of actual lead emissions or have active lead waivers. Lead emissions are to be determined based on either the most recent NEI or other scientifically justifiable methods and data, such as the State Emission Inventory (State EI) or the Toxics Release Inventory (TRI). Waivers are also to be renewed every five years in accordance with 40 CFR Part 58.10(d).

Seven facilities in Arkansas have active waivers:

1. Arkansas Steel Associates, LLC
2. Entergy Arkansas, Inc. (Independence Plant)
3. Entergy Arkansas, Inc. (White Bluff Plant)
4. Georgia Pacific, LLC (Crossett Paper Operations)
5. Gerdau MacSteel (formerly Quanex Corp. - MacSteel Division)
6. Nucor Corporation (Nucor Steel, Arkansas)
7. Nucor-Yamato Steel Company

ADEQ is only requesting waiver renewals for two facilities: Entergy Arkansas, Inc. (Independence Plant) and Entergy Arkansas, Inc. (White Bluff Plant). In addition, no new waivers are being requested. Waiver renewal status for each facility can be found in Table 11 and in the next two subsections.

Table 11. Source-Oriented Lead Waiver Status by Facility

EIS #	Facility Name	2011 NEI	2013 State EI	2013 TRI	Renewal Requested
1083611	Arkansas Steel Associates, LLC	0.10	n/a[1]	0.19	No
1083411	Entergy Arkansas, Inc. (Independence Plant)	0.37	1.31	0.16	Yes
893911	Entergy Arkansas, Inc. (White Bluff Plant)	0.37	1.35	0.12	Yes
1091211	Georgia Pacific, LLC (Crossett Paper Operations)	0.08	0.09	0.17	No
976111	Gerdau MacSteel	0.47	n/a[1]	0.05	No
1084511	Nucor Corporation (Nucor Steel, Arkansas)	0.03	0.02	0.02	No
1008911	Nucor-Yamato Steel Company	0.21	0.09	0.09	No
[1] Facility only required to report triennially					

3.6.1 Waivers Renewal Requested

Entergy Arkansas, Inc. (Independence Plant)

A lead waiver for Entergy Arkansas, Inc. (Independence Plant) was approved by EPA on January 20, 2011, based on AERMOD modeling results that indicated a maximum three-month average concentration level of 0.03 micrograms per cubic meter ($\mu g/m^3$). A waiver was requested as lead emissions for the facility was at 1.42 tpy based on the 2008 State EI. ADEQ is requesting to renew the lead waiver for the Entergy Arkansas, Inc. (Independence Plant) due to lead emissions level of 1.31 tpy according to the 2013 State EI (Table 11 & Figure 4). There have been no significant changes to the facility or its lead emission level since the initial waiver request; therefore no new modeling was conducted.

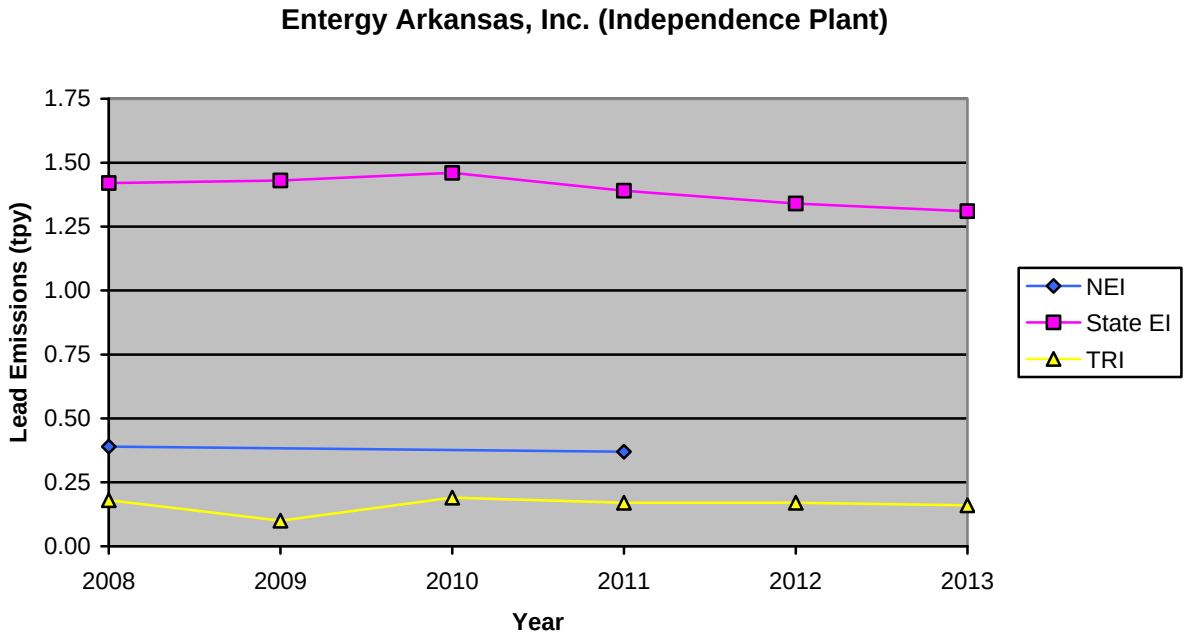

Figure 4. Lead Emissions for Entergy Arkansas, Inc. (Independence Plant)

Entergy Arkansas, Inc. (White Bluff Plant)

A lead waiver was also requested for Entergy Arkansas, Inc. (White Bluff Plant) based on the 2008 State EI level of 1.43 tpy and was subsequently approved by EPA on January 20, 2011. The approval was also based on AERMOD results, which indicated a maximum three-month average concentration level less than 0.01 $\mu g/m^3$. ADEQ is requesting to renew the lead waiver for Entergy Arkansas, Inc. (White Bluff Plant) due to lead emissions level of 1.35 tpy according to the 2013 State EI (Table 11 & Figure 5). There have been no significant changes to the facility or its lead emission level since the initial waiver request; therefore no new modeling was conducted.

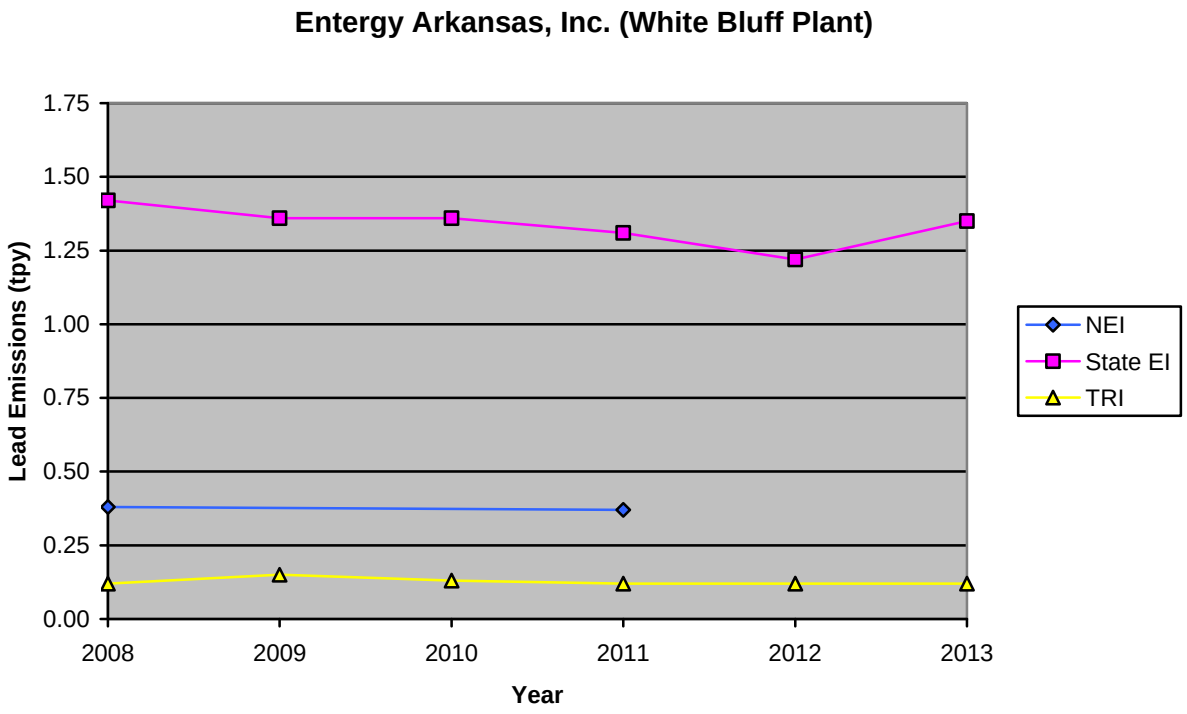

Figure 5. Lead Emissions for Entergy Arkansas, Inc. (White Bluff Plant)

3.6.2 Waivers No Longer Needed

Arkansas Steel Associates, LLC

The 2008 NEI lead emissions for Arkansas Steel Associates, LLC was at 0.91 tpy, which prompted ADEQ to request a waiver for source-oriented lead monitoring in 2011. In the initial waiver request, ADEQ modeled to determine the impact the facility had on ambient lead NAAQS. The AERMOD results indicated that the facility contributed to 30.6 percent of the NAAQS with a maximum three-month average concentration level of 0.046 µg/m^3. The waiver request for the facility was approved on July 13, 2012. ADEQ is not requesting to renew the lead waiver for Arkansas Steel Associates, LLC as it is no longer needed as actual emissions have decreased since the 2008 NEI and emissions have remained below the 0.5 tpy threshold since 2009 (Table 11 & Figure 6). Actual lead emissions used for renewal determination included the 2011 NEI, the 2011 State EI, and the 2013 TRI.

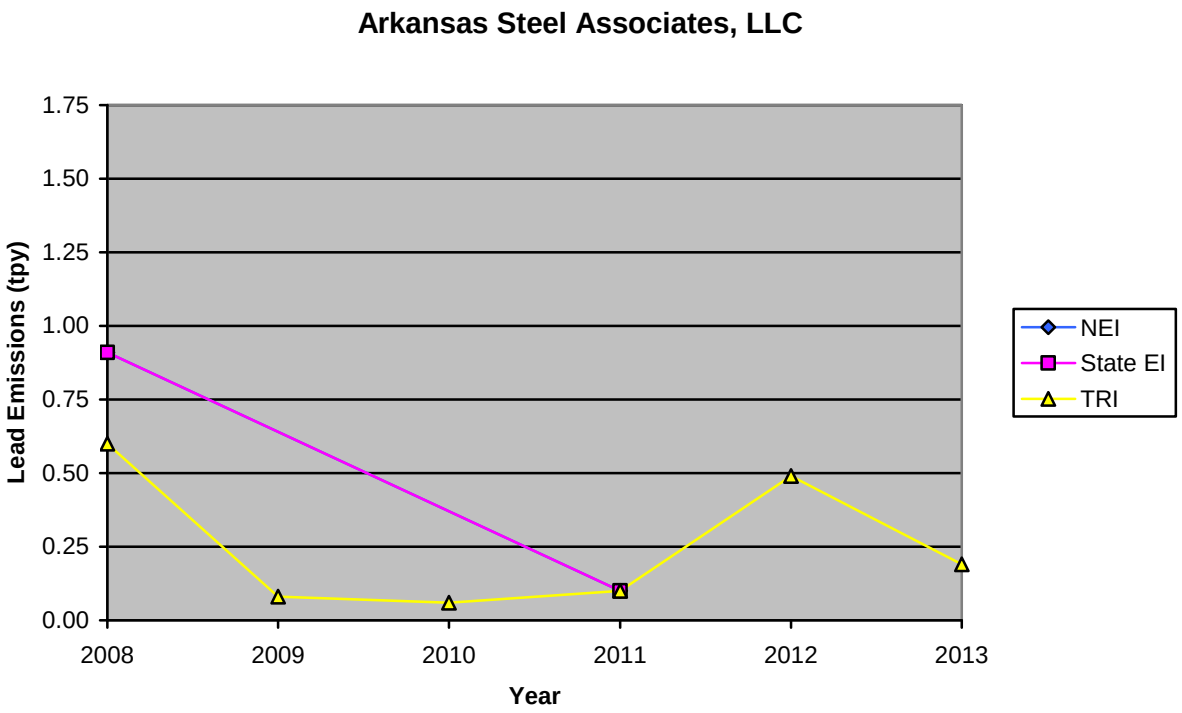

Figure 6. Lead Emissions for Arkansas Steel Associates, LLC

Georgia Pacific, LLC (Crossett Paper Operations)

ADEQ requested a waiver for Georgia Pacific, LLC (Crossett Paper Operations) based on the facility's permitted emission of 23.7 tpy, even though a waiver was not required as the facility had a 2008 NEI lead emission of 0.22 tpy. The waiver request for the facility was approved by EPA on January 20, 2011. ADEQ is not requesting to renew the lead waiver for Georgia Pacific, LLC (Crossett Paper Operations) as it is no longer needed as actual emissions have decreased and emissions have remained below the 0.5 tpy threshold (Table 11 & Figure 7). In addition, the facility permitted emission was reduced to 0.53 tpy. Actual lead emissions used for renewal determination included the 2011 NEI, the 2013 State EI, and the 2013 TRI.

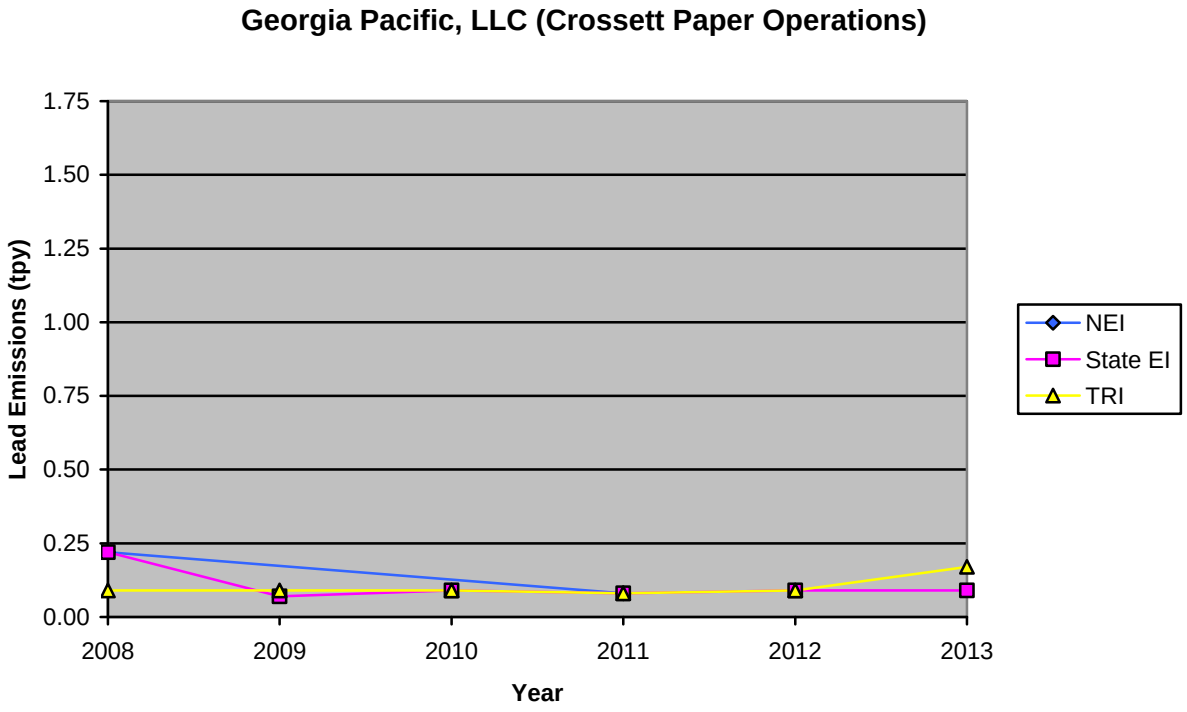

Figure 7. Lead Emissions for Georgia Pacific, LLC (Crossett Paper Operations)

Gerdau MacSteel

Lead waiver was also requested for Gerdau MacSteel, previously Quanex Corp. - MacSteel Division in the initial waiver request, based on the facility's permitted emission of 1.0 tpy. The facility was not required to have an active waiver as lead emission was below the 0.5 tpy threshold at 0.10 tpy according to the 2008 NEI. EPA approved the waiver request for the facility on January 20, 2011. ADEQ is not requesting to renew the lead waiver for Gerdau MacSteel as it is no longer needed due to actual emissions remaining below the 0.5 tpy threshold (Table 11 & Figure 8). Actual lead emission was determined using the 2011 NEI, the 2011 State EI, and the 2013 TRI.

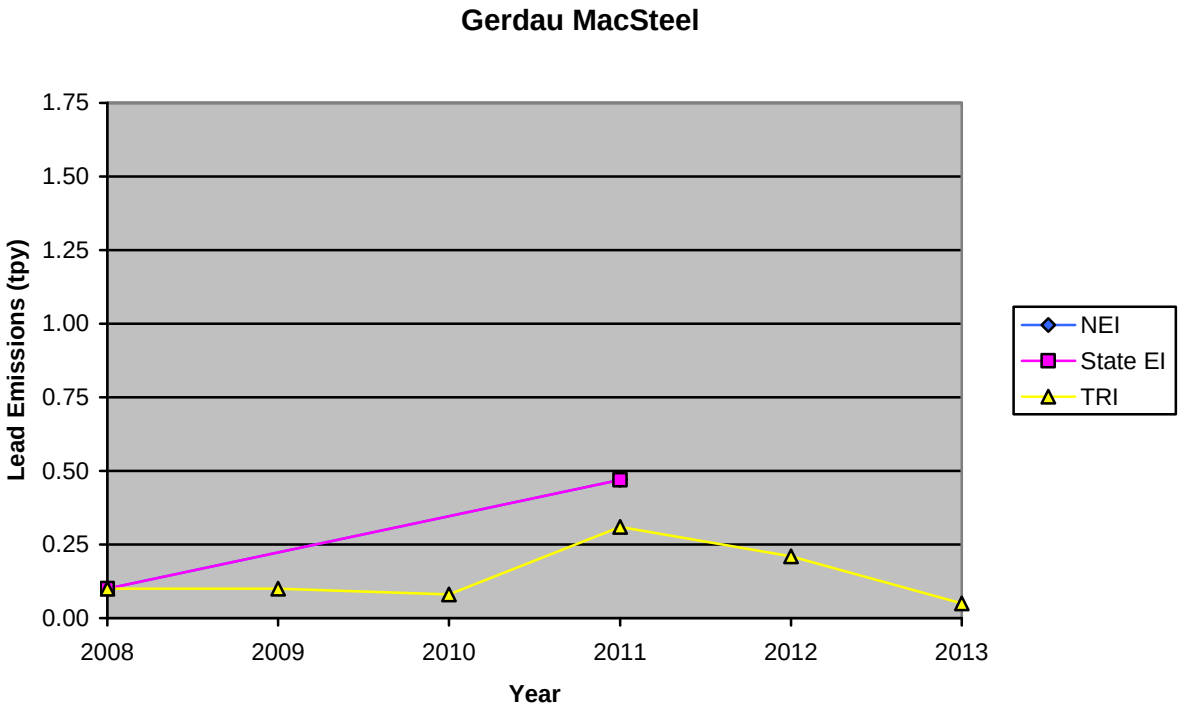

Figure 8. Lead Emissions for Gerdau MacSteel

Nucor Corporation (Nucor Steel, Arkansas)

A lead waiver request for Nucor Corporation (Nucor Steel, Arkansas) was based on the facility's permitted lead emission of 3.59 tpy. The facility was not required to have a waiver as actual emission at the time of the initial waiver request was 0.02 tpy, below the 0.5 tpy threshold. The waiver was approved on January 20, 2011. ADEQ is not requesting to renew the lead waiver for Nucor Corporation (Nucor Steel, Arkansas) as it is no longer needed due to actual emissions remaining below the 0.5 tpy threshold (Table 11 & Figure 9). Lead emissions used for renewal determination included the 2011 NEI, the 2013 State EI, and the 2013 TRI.

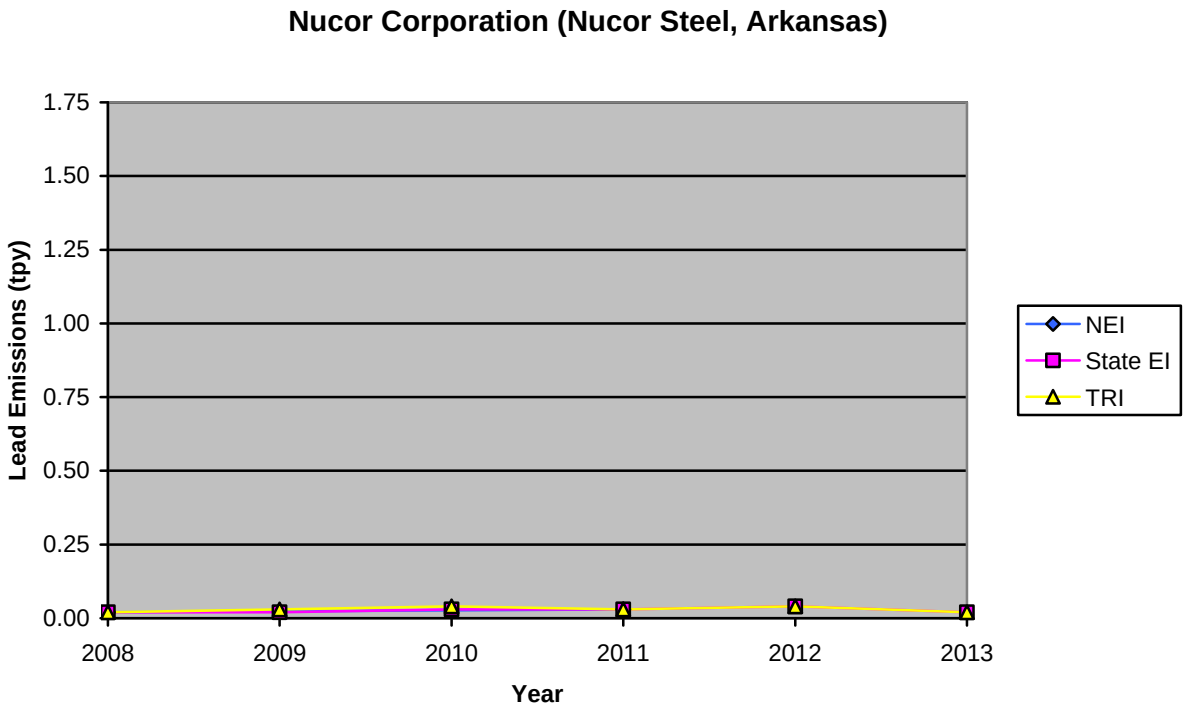

Figure 9. Lead Emissions for Nucor Corporation (Nucor Steel, Arkansas)

Nucor-Yamato Steel Company

ADEQ is not requesting a waiver renewal for Nucor-Yamato Steel Company, as a waiver is no longer needed due to actual emissions remaining below the 0.5 tpy threshold (Table 11 & Figure 10). Lead emissions were determined from the 2011 NEI, the 2013 State EI, and the 2013 TRI. ADEQ submitted the initial waiver request for the facility based on the permitted emission level of 2.2 tpy and was subsequently approved on January 20, 2011; however, the facility was not required to have a waiver as actual emission at the time of the waiver request was at 0.10 tpy according to the 2008 NEI.

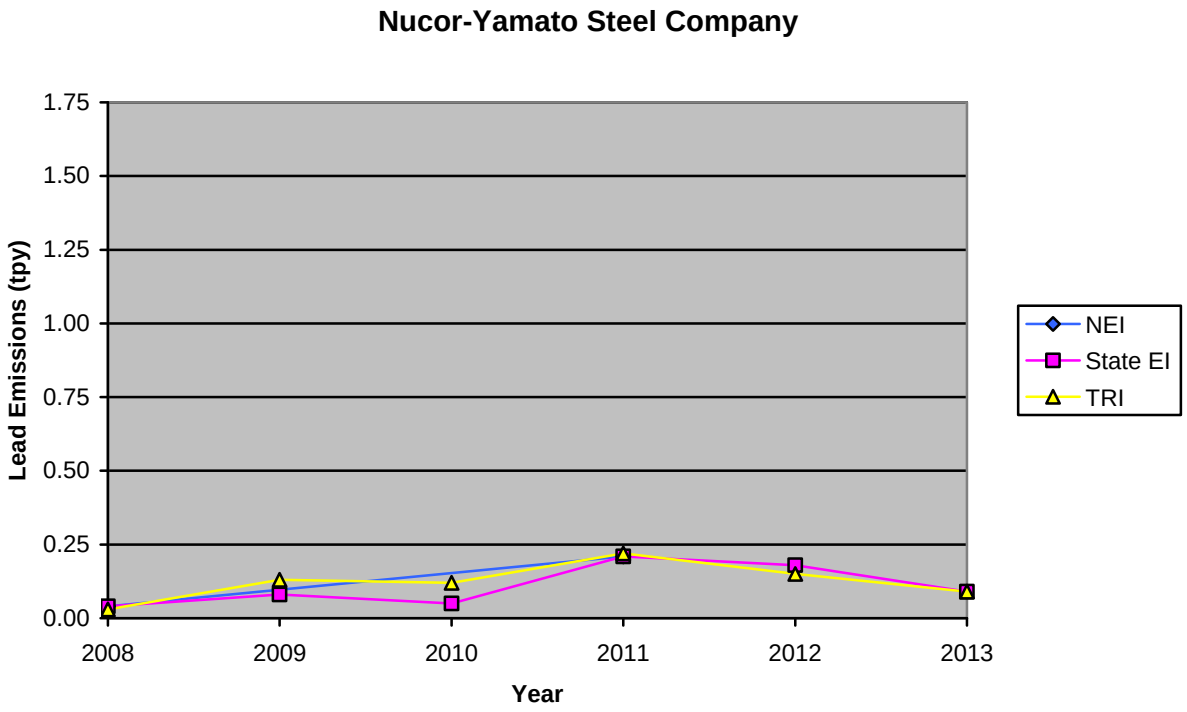

Figure 10. Lead Emissions for Nucor-Yamato Steel Company

4. Contact Information

Questions concerning lead emissions and waivers should be sent to:

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