

# ADEQ

A R K A N S A S  
Department of Environmental Quality

August 10, 2012

Thomas H. Diggs  
USEPA Region VI  
1445 Ross Avenue  
Dallas, Texas 75202

Dear Mr. Diggs,

The Annual Network Review for the Ambient Air Monitoring Network for the state of Arkansas is enclosed. The network review went through the 30 day public comment during July 1 to July 30, 2012. No comments were made.

Please contact me with comments or questions.



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Enclosure



Arkansas Department of Environmental Quality  
 Air Lab Technical Services Division  
 Air Planning Branch, Air Division  
 Annual Network Review 2012 – 2013 for Ambient Air Monitoring Network

Under 40 CFR, Part 58, Subpart B, States are required to submit an annual monitoring network review to the Environmental Protection Agency (EPA) regional office in Dallas, Texas. This network plan is required to provide the framework for establishment and maintenance of an air quality surveillance system. The annual monitoring network plan must be made available for public inspection for at least 30 days prior to submission to EPA. The following document represents network plan proposed changes to the Arkansas air monitoring network for Fiscal Year 2012-13. This document represents the commitment of the Air Lab Technical Services Division and Air Planning Branch of the Air Division to effectively 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.

Tables 1A& 1B contain a listing of all Arkansas Department of Environmental Quality (ADEQ), ambient air monitoring sites currently operated and maintained by the Air Lab of the Technical Services Division. The reference to “AQS#/ Site ID” in column 1 represents a unique site identification name that is assigned to each and every monitoring site in the network. AQS stands for Air Quality System. It is a national air monitoring database that is maintained by EPA with data collected from monitoring sites that are entered into the AQS database and made available to the public within 90 days following the end of each calendar quarter as required.

**TABLE 1A**

AQS#/ Site ID	Address/ Location	Latitude	Longitude	Pollutants Measured	Station Type	Sampling Method
05-001-0011 Stuttgart	1703 N. Beurkle	34.518392	-91.558822	PM <sub>2.5</sub>	SLAMS	R&P 2000 FRM
05-003-0005 Crossett	201 Unity Rd.	33.136708	-91.950233	PM <sub>2.5</sub>	SLAMS	R&P 2000 FRM
05-035-0005 Marion	Polk & Colonial Dr.	35.197178	-90.193047	PM <sub>2.5</sub> PM <sub>2.5</sub> Ozone NO <sub>2</sub>	SLAMS SLAMS SLAMS SLAMS	R&P 2000 FRM R & P TEOM UV Photometric Chemiluminescence
05-051-0003 Hot Springs	300 Werner	34.469309	-93.000000	PM <sub>2.5</sub>	SLAMS	R&P 2000 FRM
05-067-0001 Newport	7648 Victory Blvd.	35.638069	-91.189381	PM <sub>2.5</sub>	SLAMS	R&P 2000 FRM
05-101-0002 Deer	Hwy 16	35.832633	-93.208072	Ozone	SLAMS	UV Photometric
05-113-0002 Mena	Hornbeck Rd	34.583581	-94.226019	PM <sub>2.5</sub>	SLAMS	R&P 2000 FRM
05-113-0003 Eagle Mtn	463 Polk 631	34.454428	-94.143317	Ozone	SLAMS	UV Photometric

AQS#/ Site ID	Address/ Location	Latitude	Longitude	Pollutants Measured	Station Type	Sampling Method
05-119-0007 PARR	Pike Ave at River Road	34.756072	-92.281139	PM <sub>2.5</sub> * PM <sub>2.5</sub> PM <sub>10</sub> * PM <sub>10</sub> -PM <sub>2.5</sub> * Ozone NO <sub>x</sub> SO <sub>2</sub> Speciation NO <sub>y</sub> CO Trace SO <sub>2</sub> Trace CO Pb*	NCORE NCORE NCORE NCORE NCORE NCORE NCORE NCORE NCORE NCORE NCORE NCORE	R & P 2000 FRM R&P TEOM Gravimetric Gravimetric/FRM UV Photometric Chemiluminescence Pulsed Fluorescent Low Volume Chemiluminescence Nondispersive Infrared  Gravimetric
05-119-1002 NLRAP	Remount Rd	34.835606	-92.260425	Ozone	SLAMS	UV Photometric
05-119-1004 Adams Field	1701 S. Bond	34.729486	-92.243431	PM <sub>2.5</sub>	SLAMS	R&P 2000 FRM
05-119-1007 VA	4300 Block of West 7 <sup>th</sup>	34.744814	-92.319906	PM10	SLAMS	Gravimetric
05-119-1008 DSR	Doyle Springs Rd	34.681225	-92.328539	PM <sub>2.5</sub> PM <sub>2.5</sub> Ozone	SLAMS SLAMS SLAMS	R&P 2000 FRM R&P TEOM UV Photometric
40-135-9021 Roland, OK	207 Cherokee Blvd	35.40814	-94.524413	PM <sub>2.5</sub> *	SLAMS	R&P 2000 FRM
05-139-0006 El Dorado	Union Memorial Hospital	33.220122	-92.669453	PM <sub>2.5</sub> PM <sub>2.5</sub> SO <sub>2</sub>	SLAMS SLAMS SLAMS	R&P 2000 FRM R&P TEOM Pulsed Fluorescent
05-143-0005 Springdale	600 S. Old Missouri Rd	36.179617	-94.116611	PM <sub>2.5</sub> PM <sub>2.5</sub> Ozone	SLAMS SLAMS SLAMS	R&P 2000 FRM R&P TEOM UV Photometric
05-143-0006 Fayetteville	429 Ernest Lancaster Dr.	36.011703	-94.167436	Ozone	SLAMS	UV Photometric

\* Collocated monitors

**Table 1B**

AQS#/ Site ID	Pollutants Measured	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comp.	MSA
05-001-0011 Stuttgart	PM <sub>2.5</sub> *	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-003-0005 Crossett	PM <sub>2.5</sub>	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-035-0005 Marion	PM <sub>2.5</sub> PM <sub>2.5</sub> Ozone NO <sub>2</sub>	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 <sub>2.5</sub> *	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-067-0001 Newport	PM <sub>2.5</sub>	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA

AQS#/ Site ID	Pollutants Measured	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comp.	MSA
05-101-0002 Deer	Ozone	Continuous	Background	Neighborhood	Yes	Not in a MSA
05-113-0002 Mena	PM <sub>2.5</sub>	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 SITE)	PM <sub>2.5</sub> * PM <sub>2.5</sub> PM <sub>10</sub> * Ozone NO <sub>x</sub>  SO <sub>2</sub> Speciation CO NO <sub>y</sub> Trace SO <sub>2</sub> Trace CO Pb*	Daily 1 in 3 Continuous Daily 1 in 3 Continuous Continuous  Continuous Daily 1 in 3 Continuous Continuous Continuous Continuous Daily 1 in 3	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 Neighborhood	Yes No Yes Yes Yes  Yes No Yes No No No No	Little Rock
05-119-1002 NLRAP	Ozone	Continuous	Population Exposure	Neighborhood	Yes	Little Rock
05-119-1004 Adams Field	PM <sub>2.5</sub>	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Little Rock
05-119-1007 VA	PM <sub>10</sub>	Daily 1 in 6	Population Exposure	Neighborhood	Yes	Little Rock
05-119-1008 DSR	PM <sub>2.5</sub> PM <sub>2.5</sub> Ozone	Daily 1 in 3 Continuous Continuous	Population Exposure	Neighborhood Neighborhood Neighborhood	Yes No Yes	Little Rock
40-135-9021 Roland, OK	PM <sub>2.5</sub> *	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Ft. Smith
05-139-0006 El Dorado	PM <sub>2.5</sub> PM <sub>2.5</sub> SO <sub>2</sub>	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 <sub>2.5</sub> PM <sub>2.5</sub> Ozone	Continuous Daily 1 in 3	Population Exposure Population Exposure AQI	Neighborhood Neighborhood	No Yes	Fayetteville/ Springdale/ Rodgers
05-143-0006 Fayetteville	Ozone	Continuous	Population Exposure	Neighborhood	Yes	Fayetteville/ Springdale/ Rodgers

\* Collocated monitors

All ADEQ sites and monitors conform to 40 CFR Part 58.

**Population Statistics** (Based on 2010 Census)

The MSA's for the state of Arkansas:

1. Little Rock MSA – 671,459
2. Fayetteville MSA – 424,404
3. Ft. Smith MSA – 230,083
4. Texarkana MSA – 136,027
5. Pine Bluff MSA – 77,435
6. Jonesboro MSA – 96,443
7. Memphis TN,MS,AR MSA – 1,139,798

**Ozone**

According to Table D-2 of Appendix D to Part 58, 40 CFR the minimum number of SLAMS ozone monitors required based on population and also ozone concentration are:

- Little Rock – 2
- Memphis MSA – 2
- Fayetteville/Springdale -2

Currently the state exceeds the minimum requirements with 3 ozone monitors in the Little Rock MSA, 1 in the Memphis MSA (Memphis has 2 monitors). The additional ozone monitor has been added in the Springdale-Fayetteville-Rodgers MSA. There are 2 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. The current network is more than adequate to assess population exposure, transport and background ozone levels.

The new requirements for establishing monitors to meet the urban and rural requirements are in the planning stage. The rural objectives have been met with the Deer and Eagle Mountain sites. Arkansas will be required to add additional ozone monitors (3) in the state monitoring network: Hot Springs, Pine Bluff & Jonesboro. (This was put on hold in late 2011). The required monitor in the Ft. Smith MSA is covered by the ozone monitor in Roland, OK.

**Table 2 – PM<sub>2.5</sub>**

PM <sub>2.5</sub> FRM Sites	Current Sampling Schedule	Proposed Sampling Schedule	2009 Daily 98 <sup>th</sup> % $\mu\text{g}/\text{m}^3$	2010 Daily 98 <sup>th</sup> % $\mu\text{g}/\text{m}^3$	2011 Daily 98 <sup>th</sup> % $\mu\text{g}/\text{m}^3$	Design Value % Daily NAQQS $\mu\text{g}/\text{m}^3$	2009 Arith. Mean $\mu\text{g}/\text{m}^3$	2010 Arith. Mean $\mu\text{g}/\text{m}^3$	2011 Arith. Mean $\mu\text{g}/\text{m}^3$	Design Value %Annual NAAQS	Co-located with TEOM
Adams Field	1:3	1:3	24.9	22.8	25.8	70	11.4	12.4	11.4	78%	NO
DSR	1:3	1:3	25.7	23.2	26.3	72	11.2	12.6	12.6	81%	YES
Crossett	1:3	1:3	18.5	20.4	26.9	62	9.4	11.2	11.2	70%	NO
El Dorado	1:3	1:3	21.6	20.5	23.7	62	10.0	11.6	11.6	72%	YES
Roland, OK	1:3	1:3			22.7				11.4	76%	NO
Hot Springs	1:3	1:3	20.9	20.8	22.1	60	10.1	11.0	11.4	72%	NO
Marion	1:3	1:3	21.8	22.7	22.1	63	9.9	11.8	11.6	74%	YES
Mena	1:3	1:3	20.4	21.6	22.2	61	9.9	10.9	11.5	71%	NO
Newport	1:3	1:3	19.5	22.9	23.2	62	9.2	11.0	10.3	67%	NO
Parr	1:3	1:3	22.8	22.2	24.9	67	10.8	12.2	12.0	77%	YES
Springdale	1:3	1:3	23.2	23.0	24.2	67	10.2	11.4	11.6	73%	YES
Stuttgart	1:3	1:3	14.9	23.4	22.2	58	8.9	11.4	10.9	69%	NO

**PM<sub>2.5</sub>**

According to Table D-5 of Appendix D, Part 58, 40 CFR, the minimum number of SLAMS PM<sub>2.5</sub> monitors required are:

- Little Rock – 1
- Memphis MSA– 2
- Fayetteville/Springdale MSA - 0

ADEQ currently operates the following sites (Table 2) in the Arkansas network, which exceeds minimum SLAMS network requirements, and are comparable to the PM<sub>2.5</sub> NAAQS.

LR – DSR (05-119-1008) and PARR (05-119-0007) are collocated with a TEOM.

Design values have been below 80% of the NAAQS for the past 5 years at various sites in the state. As requested in the 2011 Annual Network Plan the following changes have been made. First, the Searcy PM<sub>2.5</sub> monitoring ended 12/1/2011. Then the Conway, Helena, and Russellville PM<sub>2.5</sub> monitors ended 6/30/2012. Since Conway was a collocated site, the QC monitor was relocated to Hot Springs (05-051-0003). Hot Springs was chosen as the new QC site due to available space and resources.

The following sites (Table 3) are 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. No changes in number or location are requested for the two sites.

**Table 3**

Continuous PM <sub>2.5</sub> AQI Sites	Sampling Frequency	AQS #
Springdale	Hourly	05-143-0005
PARR	Hourly	05-119-0007

**PM<sub>10</sub>**

According to CFR 40, Table D-4 of Appendix D, Part 58, the minimum requirement for low concentrations sites and number of stations per MSA are:

Little Rock – 1-2

ADEQ currently has two monitors in the Little Rock MSA below in Table 4.

Sampling frequency will be changed from 1 in 6 to 1 in 3 due to the NCORE requirements for PM<sub>10-2.5</sub>

**Table 4**

PM <sub>10</sub> Sites	Current Sampling Schedule	2009 Annual Max. Conc. µg/m <sup>3</sup>	2010 Annual Max. Conc. µg/m <sup>3</sup>	2011 Annual Max. Conc. µg/m <sup>3</sup>	3 yr avg. PM <sub>10</sub> Conc. 2009-11 µg/m <sup>3</sup>	Proposed Sampling Schedule
05-119-0007	1:3	41	40	45	42	1:3
05-119-1007	1:6	48	39	49	45	1:6

**Sulfur Dioxide (SO<sub>2</sub>), Nitrogen Oxides (NO<sub>2</sub>), and Carbon Monoxide (CO)**

40 CFR Part 58 Appendix D minimum requirements for the number of SO<sub>2</sub>, NO<sub>2</sub>, or CO sites, however, discontinuation of existing sites must be approved by the EPA Regional Administrator.

**SO<sub>2</sub>** – Currently there are 2 sites in Arkansas: PARR in Little Rock (05-119-0007) and El Dorado (05-139-0006). Although El Dorado was approved to be removed in the 2010-11 network review, it is still in operation.

ADEQ has evaluated the network monitoring criteria for SO<sub>2</sub> in the Fayetteville-Rogers-Springdale, AR-MO CBSA in accordance with 40 CFR Part 58, Appendix D, 4.4.2(a). The

latest census data places the population of the CBSA at 47,830 and the aggregated SO2 emission within the CBSA is 9,140.6 tons per year. The Population Weighted Emission Index value calculated using the formula at Appendix D, 4.4.2(a) [PWEI = CBSA population X CBSA tons/year SO2 / 1,000,000] is 4,331.1; below the value requiring a SO2 monitor to be placed within the CBSA. Discussions will continue with the RA concerning this monitor.

**NO<sub>2</sub>** – There are 2 NO2 sites in Arkansas: PARR in Little Rock (05-119-0007) and Marion (05-035-0005).

The NO2 monitor located at Marion (05-035-0005) was originally sited for the purpose of data gathering in support of a special air quality study for Crittenden County Arkansas in 2005. The monitor was left in place at the conclusion of that study. The Marion monitor is not located in an area of “expected highest NO2 concentrations representing the neighborhood or larger scales” and therefore does not meet the siting requirements of 40 CFR 58, Appendix D 4.3.3 as an Area-wide NO2 Monitor. Discussions will be initiated with the other State and Local entities in the Memphis MSA in order to select a more appropriate location for the Area-wide monitor.

The PARR site meets the criteria for the RA40 national requirement for susceptible and vulnerable populations as listed in 40 CFR 58 Appendix D Section 4.3.4

**CO** – There is one CO monitors in Arkansas it is located at the NCORE site (PARR 05-119-0007). There are no plans for any additional CO sites.

**NCORE – Trace SO<sub>2</sub>, CO and NO<sub>y</sub>**

NO<sub>y</sub>, Trace SO<sub>2</sub> and Trace CO are monitored at the NCORE site (PARR 05-119-0007). No changes are planned

**PM<sub>2.5</sub> Chemical Speciation**

Speciation sampling is performed at the NCORE site. We currently have a sampler at PARR (05-119-0007) and no changes are planned.

**Lead**

Collocated lead samplers have been added to the PARR location as required by 1/1/2012. No source-oriented monitoring is necessary since lead emissions from Arkansas facilities are below a half a ton per year, facilities have been given waivers, or facilities have modeled out of the requirement.

Facilities and waiver status are listed below:

Current Permit	NEI Facility Name	Total Lead Permitted (tpy)	2008 NEI (tpy)	Waiver Granted?
0449-AOP-R7	ENTERGY ARKANSAS - INDEPENDENCE	2.1	1.42	yes
0263-AOP-R6	ENTERGY ARKANSAS - WHITE BLUFF	2.1	1.43	yes
1113-AOP-R5	PINE BLUFF ARSENAL	1.54	0.13	N/A
597-AOP-R12	GEORGIA-PACIFIC LLC CROSSETT PAPER OPERATIONS	23.7	0.22	yes

1139-AOP-R11	NUCOR STEEL - ARKANSAS	3.59	0.02	yes
0883-AOP-R9	NUCOR - YAMATO STEEL CO.	2.2	0.04	yes
0035-AOP-R8	ARKANSAS STEEL ASSOCIATES, LLC	1.52	0.91*	Request pending
693-AOP-R8	QUANEX CORP - MACSTEEL DIVISION	1.0	0.01	yes
0039-AOP-R10	3M INDUSTRIAL MINERAL PRODUCTS DIV.	0.09	0.04	N/A
1659-AOP-R4	JW ALUMINUM COMPANY	0.85	0.23	N/A

\* Arkansas Steel Associates has a NEI Pb value greater than 0.5 tpy. Modeling was done to determine its impact on ambient Pb NAAQS with potential to emit and not actual emissions the facility passed.

AEROMOD dispersion modeling for Arkansas Steel Associates:

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ( $\mu\text{g}/\text{m}^3$ )	Averaging Time	Highest Concentration ( $\mu\text{g}/\text{m}^3$ )	% of NAAQS
Pb	0.41	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	.046 (highest month)	30.6

There is only one (1) facility, Arkansas Steel Associates, LLC (ASA), that emits greater than 0.5 tpy of lead based on the most recent NEI data that is not currently covered by an approved source-specific monitoring waiver. A source-specific waiver request regarding ASA was submitted by ADEQ to EPA Region 6 dated August 15, 2011. No response to this request has been received as of the publication of this Plan. A source-specific lead monitor will not be located will not be placed in regard to ASA until final action by EPA on the pending waiver request has been made. The Pine Bluff Arsenal is no longer in operation.

**Summary**

Questions concerning lead emissions and waivers should be sent to:

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Any other comments or questions should be sent to:

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