



SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

KEVIN STITT
Governor

June 26, 2018

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Jeff Robinson, Mail Code ARP
EPA Region 6
1201 Elm Street, Suite 500
Dallas, Texas 75270-2102

Re: 2019 Annual Network Review

Mr. Robinson:

Please find enclosed the 2019 Annual Network Plan (ANP) from the Oklahoma Department of Environmental Quality (DEQ). This document posted on our website for the required 30-day public comment period and is now ready for submittal to your office. No comments or inquiries were received from the public.

The SO₂ Annual Report requested by EPA and required under 40 CFR §51.1205 will be a separate submission from the Oklahoma DEQ 2019 ANP. Should staff find that further changes are necessary, please address those in the official response to our submittal.

We look forward to EPA's response and working with your staff to ensure that our network continues to be the best possible in order to better protect the environment and the health of Oklahoma's citizens. Should you have any questions regarding this submittal, feel free to contact Kent Stafford at 405.702.4139 or Curt Goeller at 405.702.4126.

Sincerely,

Beverly Bokhlet-Smith

for Cheryl E. Bradley
Environmental Programs Manager
Data and Planning Section

Cc: Fran Verhalen
Ellen Belk

Enclosure



**Oklahoma Department of Environmental Quality
Air Quality Division
2019
Air Monitoring Network Plan**



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Contents

Introduction

Contact Information

Table 1: Air Monitoring Site Information

Table 2: AQD Network Proposed Changes

Appendix A: Network Requirements

Appendix B: PWEI Numbers for Determination of Minimum SO₂ Sites

Appendix C: Further Comments

Appendix D: EPA Response to ODEQ 2018 ANP

Appendix E: ODEQ Request to EPA for Discontinuance of 40-101-0167

Appendix F: Annual Network Review Posted for Comments on 5/24/2019

Introduction

This report documents the annual review of the air monitoring network operated by the Oklahoma Department of Environmental Quality's Air Quality Division (AQD). When finalized as the Annual Monitoring Network Plan, it will be submitted by July 1, 2019 to the U.S. Environmental Protection Agency (EPA) as required by 40 CFR 58.10 and provide the framework for establishing and maintaining Oklahoma's air quality surveillance system. AQD uses data collected by this network for comparison to the National Ambient Air Quality Standards (NAAQS). AQD maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A; performs within specifications in accordance with 40 CFR Part 58, Appendix B; follows procedures outlined within 40 CFR Part 58, Appendix C; designs its network in accordance with 40 CFR Part 58, Appendix D; and locates its sites to meet all requirements of 40 CFR Part 58, Appendix E.

Below is a summary of changes that have been approved by Region 6 EPA, and implemented since the last Annual Network Plan:

- 40-109-0033: N.E. 10th and Stonewall, OKC ozone and NO_x site shut down on 12/31/2018.
- 40-109-0035: PM_{2.5} (Sequential FRM) collocated monitor operating schedule change from 1 in 3 to 1 in 6.
- 40-109-0035: PM₁₀ (Sequential FRM) collocated monitor operating schedule change from 1 in 6 to 1 in 12.
- 40-019-0297: API T640 technology replaced Thermo SHARP technology, establishing collection of non-NAAQS PM₁₀ data collection beginning November 2018.
- 40-085-0300: Burneyville Red River site shut down on 12/04/2018.
 - 40-019-0297: Burneyville's Ozone moved to Healdton site. Ozone collection started on 03/01/2019.
- 40-013-0380: Durant Red River site shut down on 12/13/2018.
 - 40-069-0324: Durant's Ozone moved to Tishomingo site. Ozone collection pending start upon completion of legal agreement.
- 40-079-0467: Bokoshe site established. PM_{2.5} and PM₁₀ began collection on 9/14/2018.
- 40-071-0604: API T640 technology replaced Thermo SHARP technology, establishing collection of non-NAAQS PM₁₀ data collection beginning October 2018.
- 40-031-0651: API T640 technology replaced Thermo SHARP technology, establishing collection of non-NAAQS PM₁₀ data collection beginning October 2018.
- 40-067-0671: Waurika Red River site shut down on 11/27/2018.
- 40-109-1037: PM₁₀ (Sequential FRM) will be removed from service 5/10/2019 upon completion of collection cycle.
 - Approved by EPA per 2018 ANP Response dated 10/15/2018.
- 40-109-1037: PM Coarse (calculated) will be discontinued with removal of PM₁₀ (Sequential FRM).
- 40-109-1037: NO_x Analyzer placed in service, began collection on 01/18/2019.
 - Verbal approval by EPA during conference call on 12/13/2018 .
- 40-087-1073: 310 E. Burr Oak, Goldsby site shut down on 12/05/2018.

- Verbal Approval by Region 6 Analysis Section staff.

Table 1 is a list of all currently existing ambient air monitoring sites that AQD operates and maintains as of May 1, 2019. Table 2 is a list of proposed changes. “Air Quality System (AQS) Site ID#” in column one is a unique identification number assigned to each monitoring site in the state network. AQS is a national air monitoring database maintained by the EPA.

AQD made the ANP available for public inspection and comment from May 24, 2019 through June 24, 2019 by posting the ANP on its website (40 CFR 58.10(a)(1)). An image of this posting is included in Appendix F of this document.

Contact Information

East Region Manager

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West Region Manager

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Table 1. Air Monitoring Site Information:

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQs Comparable	MSA/ CBSA¹
40-109-0035	N.W. 5th and Shartel, OKC	35.472920	-97.527090	PM 2.5	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 6)	Population Exposure	Neighborhood	Yes	OKC MSA
				PM 10	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 6)	Population Exposure	Neighborhood	Yes	
				PM 10	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 12) Collocated	Quality Assurance	Neighborhood	Yes	
				PM 10-PM 2.5	Paired Gravimetric	SPM	(1 in 6)	Population Exposure	Neighborhood	No	
40-027-0049	S.E. 19th St., Moore Water Tower, Moore	35.320105	-97.484099	Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	OKC MSA
				PM 2.5	Broadband Spectroscopy	SPM³	Continuous	Population Exposure	Urban	Yes	
				PM 10	Broadband Spectroscopy	SPM³	Continuous	Population Exposure	Urban	No	
40-109-0096	12880 A N.E. 10th, Choctaw	35.477801	-97.303044	Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	OKC MSA
40-109-0097	3112 N. Grand BLVD, OKC	35.503070	-97.577981	NO2	Chemiluminescence	SLAMS	Continuous	Highest Concentration/ Near Road	Micro	Yes	OKC MSA
				PM 2.5	Broadband Spectroscopy	SLAMS	Continuous	Population Exposure	Micro	Yes	
				PM 10	Broadband Spectroscopy	SPM	Continuous	Population Exposure	Micro	No	
				CO	Gas Filter Correlation	SLAMS	Continuous	Population Exposure	Micro	Yes	
				Black Carbon	Optical Absorption	SLAMS	Continuous	Population Exposure	Micro	No	

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA/ CBSA ¹
40-017-0101	12575 NW 10 th , Water Tower, Yukon	35.479215	-97.751503	Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	OKC MSA
40-037-0144	City Water Plant, Mannford	36.105481	-96.361196	Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	Tulsa MSA
40-037-0146	10375 N. Frankoma Rd., Sapulpa	36.013567	-96.099144	Lead	Hi-Volume	SLAMS	(1 in 6)	Source Oriented	Neighborhood	Yes	Tulsa MSA
				Lead	Hi-Volume	SLAMS	(1 in 12) Collocated	Quality Assurance	Neighborhood	Yes	
40-101-0167	3500 Port Place, Muskogee	35.793134	-95.302235	PM 10	TEOM Gravimetric	SLAMS	Continuous	Source Oriented	Middle	Yes	Muskogee CBSA
40-101-0170	108 North 55th St. East, Fort Gibson	35.775813	-95.287067	SO ₂ ⁴	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	Muskogee CBSA
40-143-0174	502 E. 144th Pl., Tulsa South, Tulsa	35.953708	-96.004975	Ozone	U.V. Absorption	SLAMS	Continuous	Upwind Background	Urban	Yes	Tulsa MSA
				PM 2.5	Broadband Spectroscopy	SPM ³	Continuous	Population Exposure	Urban	Yes	
				PM 10	Broadband Spectroscopy	SPM	Continuous	Population Exposure	Urban	No	
40-143-0175	1710 W. Charles Page Blvd. Tulsa	36.149877	-96.011664	SO ₂ ⁴	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	Tulsa MSA
40-143-0178	18707 E. 21st St., Tulsa East, Tulsa	36.133802	-95.764537	Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	Tulsa MSA

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA/ CBSA ¹
40-143-0179	124 N. Riverside Dr. West, Tulsa	36.154830	-96.015845	SO ₂ ⁴	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	Tulsa MSA
				H ₂ S	U.V. Fluorescence	SPM ⁵	Continuous	Source Oriented	Neighborhood	No	
40-097-0188	470 13th St., MAIP, Pryor	36.228993	-95.269196	SO ₂ ⁴	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	Not in MSA/ CBSA
				Ozone	U.V. Absorption	SPM	Continuous	Regional Transport	Regional	No	
40-105-0207	OK 10 and US 169, Oklahoma Union School, Lenapah	36.918410	-95.632286	PM 2.5	Beta Attenuation	SPM ³	Continuous	Regional Transport	Regional	No ⁶	Bartlesville CBSA
				Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	
40-113-0226	1521 S. Lombard, Skiatook	36.355860	-96.012430	Ozone	U.V. Absorption	SLAMS	Continuous	Source Oriented	Middle	Yes	Tulsa MSA
				H ₂ S	U.V. Fluorescence	SPM	Continuous	Source Oriented	Middle	No	
40-143-0235	2443 S. Jackson Ave., Tulsa	36.126945	-95.998941	Ozone	U.V. Absorption	SPM	Continuous	Regional Transport	Regional	No	
				PM 2.5	Broadband Spectroscopy	SPM ³	Continuous	Regional Transport	Regional	Yes	Ardmore CBSA
40-019-0297	Memorial Dr., Healdton City Lake, Healdton	34.244189	-97.462931	PM 10	Broadband Spectroscopy	SPM	Continuous	Regional Transport	Regional	No	
				Ozone	U.V. Absorption	SLAMS	Continuous	Source Oriented	Middle	No	
40-069-0324	Murray State College, Tishomingo	34.214818	-96.676936	Ozone	U.V. Absorption	SPM	Continuous	Regional Transport	Regional	No	Not in MSA/ CBSA

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA/ CBSA ¹
40-121-0415	104 Airport Rd., McAlester Municipal Airport, McAlester	34.885608	-95.784410	Ozone	U.V. Absorption	SLAMS	Continuous	Regional Transport	Regional	Yes	McAlester CBSA
				PM 2.5	Beta Attenuation	SLAMS	Continuous Primary	Population Exposure	Regional	Yes	
				PM 2.5	Sequential FRM/ Micro-gravimetric Filter Weighing	SLAMS	(1 in 6) Collocated	Quality Assurance	Regional	Yes	
40-121-0416	108 N Main St., Savanna	34.829396	-95.843642	Lead	Hi-Volume	SLAMS	(1 in 6)	Source Oriented	Neighborhood	Yes	McAlester CBSA
				PM2.5	Sequential FRM/ Micro-gravimetric Filter Weighing	SPM	(1 in 3)	Source Oriented	Neighborhood	Yes	
40-079-0467	29903 Main St., Bokoshe	35.186174	-94.786409	PM10	Sequential FRM/ Micro-gravimetric Filter Weighing	SPM	(1 in 3)	Source Oriented	Neighborhood	Yes	Fort Smith MSA
				SO2 ⁴	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	
40-047-0555	11826 N 30th St, Kremlin	36.512363	-97.845959	SO2 ⁴	U.V. Fluorescence	SLAMS	Continuous	Population Exposure/ Source Oriented	Neighborhood	Yes	Ponca City CBSA
				PM 2.5	Broadband Spectroscopy	SLAMS	Continuous	Population Exposure	Neighborhood	Yes	
40-071-0604	306 E Otoe, Ponca City	36.697186	-97.081350	PM 10	Broadband Spectroscopy	SPM	Continuous	Population Exposure	Neighborhood	No	Ponca City CBSA
				Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	
40-031-0651	2211 NW 25 th , Lawton	34.632980	-98.428790	PM 2.5	Broadband Spectroscopy	SPM ³	Continuous	Population Exposure	Urban	Yes	Lawton MSA
				PM 10	Broadband Spectroscopy	SPM	Continuous	Population Exposure	Urban	No	

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQs Comparable	MSA/ CBSA ¹
40-039-0856	Rader Park, Weatherford	35.560280	-98.683490	PM 10	TEOM Gravimetric	SPM	Continuous	Population Exposure	Regional	Yes	Weatherford CBSA
40-043-0860	Seiling Municipal Airport, Seiling	36.158414	-98.931973	Ozone	U.V. Absorption	SLAMS	Continuous	General Background	Regional	Yes	Not in MSA/ CBSA
				PM 2.5	Broadband Spectroscopy	SPM ³	Continuous	General Background	Regional	Yes	
40-109-1037	2501 E. Memorial Rd., Oklahoma Christian University, OKC	35.614131	-97.475083	PM 10	Broadband Spectroscopy	SPM	Continuous	General Background	Regional	No	OKC MSA
				SO ₂ ⁴	U.V. Fluorescence	SLAMS	Continuous	Population Exposure	Urban	Yes	
				Ozone	U.V. Absorption	SLAMS	Continuous Primary	Highest Concentration	Urban	Yes	
				CO	Gas Filter Correlation	SLAMS	Continuous	General Background	Urban	Yes	
				NO ₂	Chemiluminescence	SLAMS	Continuous	Max Precursor Emissions Impact/ Area-wise NO ₂ and RA40 NO ₂ for OKC CBSA	Urban	Yes	
				Chemical Speciation	Low Volume Gravimetric/ Micro-gravimetric filter weighing	SLAMS	(1 in 6)	Population Exposure	Urban	No	
				PM 10	TEOM Gravimetric	SPM	Continuous	Population Exposure	Urban	Yes	
				PM 2.5	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 3) Collocated	Population Exposure	Urban	Yes	
				PM 2.5	Broadband Spectroscopy	SPM ³	Continuous Primary	Population Exposure	Urban	Yes	
				PM 10	Broadband Spectroscopy	SPM	Continuous	Population Exposure	Urban	No	

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA/ CBSA ¹
				Ozone	U.V. Absorption	NCore/ SLAMS	Continuous	Maximum Precursor Emissions Impact	Urban	Yes	
				Trace Level NO ₂	Chemiluminescence	NCore/ SLAMS	Continuous	Maximum Precursor Emissions Impact/ Vulnerable and Susceptible Population	Urban	Yes	
				Trace level NO _y	Chemiluminescence	NCore/ SLAMS	Continuous	Maximum Precursor Emissions Impact	Urban	No	
				Trace level CO	Gas Filter Correlation	NCore/ SLAMS	Continuous	Population Exposure	Urban	Yes	
				Trace level SO ₂ ⁴	U.V. Fluorescence	NCore/ SLAMS	Continuous	Population Exposure	Urban	Yes	Tulsa MSA
40-143-1127	3520 1/2 N. Peoria, North Tulsa- Fire Station #24, Tulsa	36.204902	-95.976537	PM 2.5	Sequential FRM/ Micro-gravimetric filter weighing	NCore/ SLAMS	(1 in 3) Primary	Population Exposure	Urban	Yes	
				PM 2.5	Sequential FRM/ Micro-gravimetric filter weighing	NCore/ SLAMS	(1 in 6) Collocated	Quality Assurance	Urban	Yes	
				PM 2.5	Broadband Spectroscopy	NCore/ SPM ³	Continuous	Population Exposure	Urban	Yes	
				PM 10	Broadband Spectroscopy	NCore/ SPM ³	Continuous	Population Exposure	Urban	No	
				PM 10	Sequential FRM/ Micro-gravimetric filter weighing	NCore/ SLAMS	(1 in 3)	Population Exposure	Urban	Yes	
				PM 10 - PM 2.5	Paired Gravimetric - "calculated"	NCore/ SPM	(1 in 3)	Population Exposure	Urban	No	
				Chemical Speciation	Low Volume Gravimetric/ Micro-gravimetric filter weighing	NCore/ SLAMS	(1 in 3)	Population Exposure	Urban	No	

¹ Both Metropolitan Statistical Area and Core-Based Statistical Area abbreviated to MSA and CBSA respectively for all tables.

² Oklahoma City has been abbreviated to OKC for all tables.

³ PM_{2.5} SPM monitors are used to support the state Health Advisory Program and will remain SPMs.

⁴ AQS shows two SO₂ monitors due to reports being entered for both hourly and 5-minute data.

⁵ H₂S SPMs are used to monitor major sources in the Tulsa area in response to the state implemented H₂S ambient standard and will remain SPMs. All AQD sites and monitors conform to 40 CFR, Subchapter C, Part 58 Appendix A, Appendix C (see methods in column 6 of table 2), and Appendices D & E (see photos located at <http://www.deq.state.ok.us/AQDnew/monitoring/cpdata.htm> by clicking on desired location of the site map).

⁶ 40-105-0207 will contain less than 3 years of complete data by design negating the ability to compare to NAAQS values for purposes of attainment/non-attainment evaluation.

Note – All PM_{2.5}/10 (2 parameters/1 monitor) listed as “broadband spectroscopy” are API Model T640 instruments designated NAAQS comparable for PM_{2.5} and non-NAAQS comparable for PM₁₀.

Table 2. AQD Network Proposed Changes

Monitoring Sites to be Removed:

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
40-101-0167	3500 Port Place, Muskogee	35.793134	-95.302235	PM 10	TEOM Gravimetric	SLAMS	Continuous	Source Oriented	Middle	Yes	Muskogee CBSA

- Letter sent to EPA on 4/17/19 (see appendix E) requesting to discontinue site due to the site no longer meeting siting criteria as set by 40 CFR Part 58 Appendix E §3(a). 40-101-0167 is not required to meet minimum requirements of 40 CFR part 58 Table D-4 of Appendix D and site measurements collected indicate PM10 levels have not exceeded 80% of the NAAQS in the last 5 years per requirements of 40 CFR Part 58 §14(c)(1).

Monitoring Sites to be Added:

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
40-087-1074	Kessler	TBD	TBD	Ozone	U.V. Absorption	SLAMS	Continuous	Background	Regional	Yes	OKC MSA
40-075-0711	Great Plains State Park	TBD	TBD	Ozone	U.V. Absorption	SPM	Continuous	Background/Transport	Regional	No	Not in CBSA/MSA

- 40-087-1074: The site addition would cover the loss of the Goldby site (40-087-1073) which was discontinued due continuous problems with construction at the water plant location. ODEQ is unable to provide street address, coordinates, pictures of site location, or any further information regarding the monitors at this point in time as the sites have not been chosen. When ODEQ has found an appropriate site meeting all 40 CFR Part 58 requirements, the information needed for approval will be passed on to EPA region 6 for approval.
- 40-075-0711: ODEQ will be setting up a site in the vicinity of the Great Plains State Park to further document background/transport of ozone further west than the current site network allows. ODEQ is unable to provide street address, coordinates, pictures of site location, or any further information regarding the monitors at this point in time as the sites have not been chosen. When ODEQ has found an appropriate site meeting all 40 CFR Part 58 requirements, the information needed for approval will be passed on to EPA region 6 for approval.

Monitoring Sites to be Relocated:

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
40-143-0174	502 E. 144th Pl., Tulsa South, Tulsa	35.953708	-96.004975	Ozone	U.V. Absorption	SLAMS	Continuous	Upwind Background	Urban	Yes	Tulsa MSA
				PM 2.5	Broadband Spectroscopy	SPM ³	Continuous	Population Exposure	Urban	Yes	
				PM 10	Broadband Spectroscopy	SPM	Continuous	Population Exposure	Urban	No	

- ODEQ is in talks with the City of Glenpool to relocate 40-143-0174 due to not meeting requirement laid out by 40 CFR Part 58 Appendix E §5.a. The site will be moved approximately one mile south to the Glenpool water tower pending contract with the City of Glenpool. EPA will be provided with specifics of the location including Latitude, Longitude, and pictures of the proposed site upon completion of a contract with the city.

Monitors to be Added:

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method/ Method #	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
40-121-0415	104 Airport Rd., McAlester Municipal Airport, McAlester	34.885608	-95.784410	PM10	Broadband Spectroscopy	SPM	Continuous	General Background	Regional	No	McAlester CBSA

- The Thermo SHARP technology will be replaced with an API T640. PM2.5 method code will change (see bullet 2 under “Methods to be changed) and PM10 non-NAAQS data will be added.

Methods to be Changed:

Oklahoma DEQ is transitioning from the TEOM and Thermo SHARP technology to the API T640 and API T640x.

- At 40-109-1037, an API T640x will replace the current TEOM for PM10 and API T640 for PM2.5.
 - This T640x will be collocated with the Thermo 2025i FRM.
 - Both PM10 and PM2.5 NAAQS data will continue to be reported from site utilizing the T640x technology after removal of the TEOM and T640. The installation of the T640x will discontinue the reporting of non-NAAQS PM10 data.

- At 40-121-0415, an API T640 will replace the Thermo 5030i SHARP.
 - This T640 will be collocated with the Thermo 2025i FRM.
 - PM2.5 NAAQS data will continue to be reported from this site and PM10 non-NAAQS data will begin reporting from this site utilizing the T640 technology after removal of the SHARP.

- At 40-143-1127, an API T640x will replace the API T640.
 - PM2.5 NAAQS data will continue to be reported from the site utilizing the T640x technology after removal of the T640. The installation of the T640x will discontinue the reporting of non-NAAQS PM10 data and begin reporting if NAAQS PM10 data.

- At 40-105-0207, an API T640 will replace the Thermo 5030i SHARP.

Appendix A: Network Requirements

Parameter	Number of Sites Required in Part 58 App D	Reason(s) for Requirement Part 58 App D	Number of Other Non-Required SLAMS/SPM Sites Currently in Operation	Reason(s) for Optional Site	Total Sites Operated	Total Monitors Operated including Collocated
Ozone	2	OKC MSA/Population	3		5	5
	2	Tulsa CBSA/Population	2		4	4
	1	Lawton CBSA			1	1
	1	NCore			1	1
			4	SPM	4	4
			2	AQI/Advisories	2	2
Total	6		12		17	17
Carbon Monoxide	1	Near-road			1	1
	1	NCore			1	1
			1	Background	1	1
Total	2		1		3	3
Nitrogen Dioxide	1	Near-road			1	1
	1	NCore			1	1
	1	Area-wide			1	1
Total	3				3	3
NOy	1	NCore			1	1
Total	1				1	1
Sulfur Dioxide	1	NCore			1	1
	3	SO2 DRR			3	3
			4	Major Source	4	4
			1	OKC Area Background	1	1
Total	4		5		9	9

Parameter	Number of Sites Required in Part 58 App D	Reason for Requirement Part 58 App D	Number of Other Non-Required SLAMS/SPM Sites Currently in Operation	Reason for Optional Site	Total of All Sites Operated	Total Monitors Operated including Collocated
Lead	2	Sources > .5 tons/year			2	3
Total	2				2	3
PM2.5 ²	2	OKC CBSA/Population	1	AQI/Advisories	3	4
	1	Tulsa CBSA - Population/NCore	1	AQI/Advisories	2	4
			3	AQI/Advisories	3	4
			1	Union SPM/Transport	1	1
			1	Bokoshe SPM	1	1
	1	Background			1	1
	1	Transport			1	1
	1	Near-road			1	1
Total	6		7		13	17
PM10 ^{1,3}			1	Muskogee Source	1	1
			1	AQI/Advisories	1	1
	2	OKC CBSA/Population/ Low Conc./ AQI/ Advisories			2	3
	1	Tulsa CBSA/Population/ Low Conc.			1	1
Total	3		3		6	7
PM10 - 2.5 (Coarse)	1	NCore			1	1
			1	Supplemental	1	1
Total	1		1		2	2

¹API T640 PM10 is not included in this chart due to the monitoring method not being acceptable by EPA standards for comparison to the NAAQS. There are 9 sites utilizing the T640 technology, currently collecting non-NAAQS PM10 data.

²Per 40 CFR Part 58 Table D-5 of Appendix D, while the Enid MSA has a population of >50,000, due to the statewide PM2.5 being <85% of NAAQS, Oklahoma DEQ has met the minimum monitoring requirements.

³Per 40 CFR Part 58 Table D-4 of Appendix D, while the Lawton MSA has a population of >100,000, due to statewide PM10 being <80% PM10 NAAQS, Oklahoma DEQ has met the minimum monitoring requirements.

Note – This chart reflects existing network conditions.

Appendix B: PWEI¹ Numbers for Determination of Minimum SO₂ Sites

MSA/CBSA	Counties	2017 SO ₂ Emissions ² (tons)	Total Emissions ² (tons)	Population ³ (people)	PWEI ² (tons/million people)
Oklahoma City	Oklahoma County	157	382	1,383,249	528
	Cleveland County	4			
	Canadian County	177			
	Grady County	24			
	Logan County	1			
	McClain County	18			
	Lincoln County	1			
Tulsa	Tulsa County	334	4,677	991,610	4,638
	Rogers County	3,933			
	Wagoner County	10			
	Creek County	238			
	Osage County	7			
	Okmulgee County	155			
	Pawnee County	0			
Lawton	Comanche County	6	6	127,589	1
	Cotton County	0			
Stillwater	Payne County	3	3	81,867	0
Shawnee	Pottawatomie County	3	3	72,248	0
Muskogee	Muskogee County	20,177	20,177	68,959	1,391
Enid	Garfield County	16,687	16,687	61,492	1,026
Bartlesville	Washington County	2	2	52,016	0
Tahlequah	Cherokee County	5	5	48,925	0
Ardmore	Carter County	317	321	48,295	16
	Love County	4			
Ponca City	Kay County	2,690	2,690	44,522	120
McAlester	Pittsburg County	22	22	44,145	1
Duncan	Stephens County	37	37	43,411	2
Durant	Bryan County	144	144	46,460	7
Ada	Pontotoc County	85	85	38,354	3
Miami	Ottawa County	2	2	31,325	0
Weatherford	Custer County	14	14	28,942	0
Altus	Jackson County	1	1	25,213	0
Elk City	Beckham County	11	11	21,804	0
Guymon	Texas County	71	71	20,856	1
Woodward	Woodward County	33	33	20,497	1

¹40 CFR Appendix D to Part 58 §4.4.2 *Requirement for Monitoring by the Population Weighted Emissions Index*. (a) The population weighted emissions index (PWEI) shall be calculated by States for each core based statistical area (CBSA) they contain or share with another State or States for use in the implementation of or adjustment to the SO₂ monitoring network. The PWEI shall be calculated by multiplying the population of each CBSA, using the most current census data or estimates, and the total amount of SO₂ in tons per year emitted within the CBSA area, using an aggregate of the most recent county level emissions data available in the National Emissions Inventory for each county in each CBSA. The resulting product shall be divided by one million, providing a PWEI value, the units of which are million persons-tons per year. For any CBSA with a calculated PWEI value equal to or greater than 1,000,000, a minimum of three SO₂ monitors are required within that CBSA. For any CBSA with a calculated PWEI value equal to or greater than 100,000, but less than 1,000,000, a minimum of two SO₂ monitors are required within that CBSA. For any CBSA with a calculated PWEI value equal to or greater than 5,000, but less than 100,000, a minimum of one SO₂ monitor is required within that CBSA.

²Values truncated to whole tons or whole tons/million people.

³All population estimates based off of 2017 Census estimations found at the following link:

https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2018_PEPANNRES&prodType=table

Appendix C: Further Comments

Near Road Addition to Tulsa:

EPA's current regulatory requirements from 40 CFR Appendix D to Part 58 § 4.3.2(a) states as follows:

Within the NO₂ network, there must be one microscale near-road NO₂ monitoring station in each CBSA with a population of 1,000,000 or more persons to monitor a location of expected maximum hourly concentrations sited near a major road with high AADT counts as specified in paragraph 4.3.2(a)(1) of this appendix. An additional near-road NO₂ monitoring station is required for any CBSA with a population of 2,500,000 persons or more, or in any CBSA with a population of 1,000,000 or more persons that has one or more roadway segments with 250,000 or greater AADT counts to monitor a second location of expected maximum hourly concentrations. CBSA populations shall be based on the latest available census figures.

The Tulsa MSA has the second largest population in Oklahoma behind the Oklahoma City MSA with an estimated population of 993,797 based on the 2018 Census Data Estimates found on the US Census Bureau website:

- https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2018_PEPANNRES&prodType=table

As per 40 CFR Appendix D to Part 58 § 4.3.2(a), the Tulsa MSA will not require a near-road NO₂ monitoring site at this time due to the population remaining under 1,000,000 persons.

Prevention of Significant Deterioration Air Monitoring:

The Oklahoma DEQ monitoring network meets all requirements found in 40 CFR Part 58, Appendix B. PSD monitoring is currently not necessary for the Oklahoma DEQ.

Maintenance Plans for Discontinuation of SLAMS Monitors:

Oklahoma currently is in attainment with all NAAQS and is not under a SIP Maintenance Plan.

Division of MSA/CBSA Monitoring Responsibilities with other Agencies:

While Oklahoma DEQ understands part of the Fort Smith MSA includes two Oklahoma counties, Oklahoma DEQ has no agreements with Tribal Nations or Arkansas DEQ for the division of monitoring responsibilities to fulfill monitoring requirements at this time. Oklahoma DEQ will seek contact with Arkansas DEQ to develop a plan for current and future monitoring.

Review of Site Conditions

No site conditions have changed or need to be addressed by ODEQ at this time.

Appendix D: EPA Response to ODEQ 2018 ANP



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

OCT 15 2018

Ms. Cheryl E. Bradley
Environmental Programs Manager
Data and Planning Section
Oklahoma Department of
Environmental Quality
Post Office Box 1677
Oklahoma City, Oklahoma 73101-1677

Dear Ms. Bradley:

Thank you for your correspondence submitting the Oklahoma Department of Environmental Quality's (ODEQ) 2018 Annual Monitoring Network Plan (2018 Plan) for ambient air. The U.S. Environmental Protection Agency (EPA) has completed its review of the 2018 Plan to ensure it meets the requirements of 40 Code of Federal Regulations (CFR) Part 58 and its appendices.

We appreciate your cooperation and work to submit your 2018 Plan dated June 15, 2018, which we received on June 18, 2018. We applaud the efforts of the ODEQ to manage and maintain the ambient air monitoring network in Oklahoma.

The network review process presents an opportunity for the EPA and the ODEQ to collaborate on air monitoring network design. See 40 CFR Part 58 Appendix D, Section 1.1.2. The EPA has conducted its review of the 2018 Plan and proposed network modifications to ensure the air quality surveillance system continues to meet applicable requirements.

I am pleased to inform you that your 2018 plan is approved with only one minor comment in accordance with 40 CFR §58.10. Details of our review are enclosed. We can discuss our review with you if you would like. Additionally, separate from the 2018 Plan review, we acknowledge receipt on July 3, 2018, of the July 2, 2018, ODEQ 2018 SO₂ annual report required under §51.1205(b).

We look forward to continued partnership with the ODEQ on our common goals to establish and maintain a successful monitoring network in the state of Oklahoma. If you have any questions, please contact me at (214) 665-7242, or your staff may contact Ms. Frances Verhalen, Air Monitoring and Grants Section Chief, at (214) 665-2172.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Guy Donaldson".

Guy Donaldson
Associate Director for
Air, Multimedia Division

Enclosure

Oklahoma Department of Environmental Quality
Air Quality Division (AQD)
2018 Annual Ambient Air Monitoring Network Plan
Technical Comments

The 2018 (FY2019) Oklahoma Annual Monitoring Network Plan (ANP), dated June 15, 2018, was received on June 18, 2018. Because this ANP addresses requirements for July 1 of 2018, this plan will be referred to as the "2018 Plan" throughout the remainder of this document. In accordance with the requirements of 40 Code of Federal Regulations (CFR) Part 58 and its appendices, the U.S. Environmental Protection Agency (EPA) has reviewed the 2018 Plan and our comments are provided below. The comments below reflect the EPA's efforts in collaboration with the Oklahoma Department of Environmental Quality (ODEQ) to maintain an accurate and efficient ambient air monitoring network.

General Comments

We appreciate the ODEQ's submittal of the 2018 Plan in accordance with 40 CFR §58.10.

Operation of monitoring network in accordance with 40 CFR Part 58 and Appendices A, B, C, D, and E
We appreciate the ODEQ's operation of the ambient air monitoring network in accordance with federal requirements defined in 40 CFR Part 58 Appendices A, B, C, D, and E (2018 Plan, p. 3).

Thank you for your efforts to ensure that the information in the ANP and the Air Quality System (AQS) database is complete and consistent. Please continue to update the AQS database, and to correlate the AQS with the ANP.

Cross State Metropolitan Statistical Area (MSA)/Core-Based Statistical Area (CBSA) monitoring network responsibilities.

The EPA recognizes that state or local agencies must consider the MSA/CBSA boundaries and their own political boundaries and geographical characteristics in designing their air monitoring networks. There may be situations where there may be a need to augment or to divide the overall MSA/CBSA monitoring responsibilities and requirements among various agencies to achieve an effective network design. In next year's ANP, for each area in which your agency is relying on another agency to fulfill a monitoring requirement, please provide the following:

- a) a copy of the agreement between the affected agencies; and
- b) an explanation of the division of responsibilities of the agencies with respect to ambient air monitoring requirements, as related to the ANP.

Ozone (O₃) Monitoring (40 CFR Part 58, Appendix D Section 4.1)

The ODEQ is meeting the minimum requirements for its Ozone monitoring network design. See 40 CFR 58 Appendix D Section 4.1. The EPA acknowledges that no changes were made to the Oklahoma Ozone network in the 2018 Plan.

Carbon Monoxide (CO) Monitoring (40 CFR Part 58, Appendix D Section 4.2)

The ODEQ is meeting the minimum requirements for its CO monitoring network design. See 40 CFR 58 Appendix D Section 4.2. The EPA acknowledges that no changes were made to the Oklahoma CO network in the 2018 Plan.

Nitrogen Dioxide (NO₂) Monitoring (40 CFR Part 58, Appendix D Section 4.3)

The ODEQ is meeting the minimum requirements for its NO₂ monitoring network design. See 40 CFR 58 Appendix D Section 4.3. The EPA acknowledges that no changes were made to the Oklahoma NO₂ network in the 2018 Plan.

Near-Road (NO₂) Monitoring Sites

The EPA agrees that the Tulsa MSA does not require a near-road NO₂ monitoring site at this time due to the current population estimate for the area remaining under 1,000,000 persons.

Sulfur Dioxide (SO₂) Monitoring (40 CFR Part 58, Appendix D Section 4.4)

The ODEQ is meeting and exceeding the minimum requirements for its SO₂ monitoring network design. See 40 CFR Part 58, Appendix D Section 4.4. The EPA acknowledges that there were no changes to the SO₂ network in the 2018 Plan.

SO₂ Annual Report

Additionally, separate from the ANP review, we acknowledge receipt on July 3, 2018 of the ODEQ 2018 SO₂ annual report dated July 2, 2018, required under §51.1205(b). The EPA also notes that further annual reports are not required for the PSO Northeastern Power Station pursuant to §51.1205(c), which states: "Any air agency that demonstrates that an area would meet the 2010 SO₂ National Ambient Air Quality Standards with allowable emissions is not required pursuant to paragraph (b) of this section to submit future annual reports for the area."

Lead (Pb) Monitoring (40 CFR Part 58, Appendix D Section 4.5)

The ODEQ is meeting the network design requirements for ambient air quality monitoring for Pb. See 40 CFR Part 58, Appendix D Section 4.5. We note that with the EPA approval, the ODEQ has discontinued monitoring for Pb at the National Core (NCORE) Multi-pollutant Monitoring site in Tulsa.

Particulate Matter (PM) Monitoring

The ODEQ is currently meeting the network design requirements for ambient air quality monitoring for PM. See 40 CFR Part 58, Appendix D, Sections 4.6 and 4.7.

Particulate Matter of 10 Microns or Less (PM₁₀) (40 CFR Part 58, Appendix D Section 4.6)

The plan to discontinue the PM₁₀ monitor (POC1) at the Oklahoma City North site (AQS ID 40-109-1037) is approved. The plan to discontinue the reporting of PM Coarse data from the Oklahoma City North site is approved.

The plan to change the PM₁₀ QA Collocated monitor (POC 2) at the Central Fire Station site (AQS ID 40-109-0035) operating schedule from 1-in-6 day to 1-in-12 day is approved.

The EPA appreciates the update about the discontinuation of the PM₁₀ monitor located at the Turner site (AQS IS 40-143-1110). Please update AQS with this change.

Particulate Matter of 2.5 Microns or Less (PM_{2.5}) (40 CFR Part 58, Appendix D Section 4.7)

The plan to change the PM_{2.5} monitor (POC 1) at the Central Fire Station site (AQS ID 40-109-0035) operating schedule from 1-in-3 day to 1-in-6 day is approved.

The EPA appreciates the updates about the installation of the new 'T640' PM_{2.5} monitor at the Near Road site (AQS ID 40-109-0097).

PM_{2.5} Quality Assurance Collocation

For the PM_{2.5} monitors which the ODEQ operates using Federal Reference Method (FRM) number 145, collocation is met at the N. Tulsa site (AQS ID 40-143-1127).

For the PM_{2.5} monitors which the ODEQ operates using Federal Equivalent Method (FEM) number 184, collocation is met at the McAlester site (AQS ID 40-121-0415).

For the PM_{2.5} monitors which the ODEQ operates using Federal Equivalent Method (FEM) number 236, collocation is met at the Oklahoma City North site (AQS ID 40-109-1037).

Appendix E: ODEQ Request to EPA for Discontinuance of 40-101-0167



RECEIVED
APR 22 2019

SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

KEVIN STITT
Governor

April 17, 2019

CERTIFIED MAIL, RETURN RECEIPT REQUESTED

Jeffrey J. Robinson
Branch Chief
Air Permits Monitoring & Grants Branch
US EPA Region 6 (ARP)
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Subject: Site 40-101-0167, PM-10 Monitor Muskogee OK

Dear Mr. Robinson:

The Department of Environmental Quality (DEQ) operates a continuous PM-10 monitor at Site 40-101-0167 in Muskogee, Oklahoma and recently evaluated the site to determine if it continues to meet monitoring objectives. During the evaluation, Curt Goeller, Monitoring Section East Manager, consulted with Dorothy Crawford, EPA Region 6 Air Monitoring Section. A copy of Ms. Crawford's February 6, 2019, email which summarizes her evaluation, is enclosed and corroborates DEQ's findings. We greatly appreciate her assistance.

When the site was established in the 1980s, there were numerous homes located in the industrial park. At that time, the monitor was a non-continuous filter based PM-10 high volumetric sampler. The continuous sampler was later installed to give us more data. The monitor was necessary to monitor PM levels in the neighborhood. Over the years, all residents moved from the area and the area became entirely industrial.

DEQ has operated the Muskogee continuous PM-10 SLAMS monitor since 2002. It is not a 'minimally required' monitor in DEQ's monitoring network (40 CFR 58, Appendix D, Table D-4). The site is located near local PM-10 emission sources and unpaved areas. EPA regulations in 40 CFR Part 58, Appendix E, 3(a) indicate that the Muskogee PM-10 data patterns are somewhat analogous to those in the Tulsa area in that there are infrequent exceedances with the majority of the measurements below the PM-10 NAAQS level. However, while still below NAAQS, Muskogee PM-10 data trends higher than the Oklahoma City and Tulsa urban areas. This is likely the result of impacts from nearby local PM sources.

Federal regulation 40 CFR Part 58, Appendix E 3(a) indicates that DEQ should avoid placing a monitor near local sources unless the objective is to investigate source emissions. The regulation also states that PM monitors should not be located in an unpaved area. While strong winds can carry PM-10 long

707 NORTH ROBINSON, P.O. BOX 1677, OKLAHOMA CITY, OKLAHOMA 73101-1677

printed on recycled paper with soy ink



Jeffrey Robinson
April 17, 2019
Page 2

distances, PM-10 emissions tend to impact nearby areas. The Muskogee PM-10 monitor is located at the water treatment plant facility, which includes various unpaved roads, drives, parking and layout areas. There are also uncovered miscellaneous material stockpiles at the water treatment plant. Based on prevailing winds, areas at the water treatment facility are within 1000 feet of the monitor. Additional unpaved drives and miscellaneous storage areas exist to the north. Southeast of the water treatment plant main activity area, between the Vallourec Star east storage yard and the Arkansas River, is what appears to be a disturbed, unpaved area with a sand/soil excavation or processing operation. The Vallourec Star industrial site itself and its east storage yard appear to be paved. DEQ is not aware of any citizen concerns with PM levels in the ambient air. The nearest residence appears to be about 1 mile to the southwest, generally upwind of the monitor location.

After careful evaluation, DEQ has determined that the site does not currently meet monitoring objectives in 40 CFR Part 58, Appendix E, 3(a). DEQ respectfully requests approval to discontinue PM-10 monitoring at Site 40-101-0167 in Muskogee, Oklahoma.

We are currently working on our 2019 Annual Network Plan and plan to include the closing of Site 40-101-0167 in the plan. Again, thanks for your assistance in this matter.

Sincerely,



Cheryl E. Bradley, Environmental Programs Manager
Data and Planning Group

cc: Curt Goeller, DEQ
Fran Verhalen, EPA
Ellen Belk, EPA
Dorothy Crawford, EPA

Attachments

From: Curt Goeller <Curt.Goeller@deg.ok.gov>
Sent: Wednesday, February 06, 2019 10:50 AM
To: Crawford, Dorothy <Crawford.Dorothy@epa.gov>; Kent Stafford <kent.stafford@deg.ok.gov>
Cc: Verhalen, Frances <verhalen.frances@epa.gov>; Belk, Ellen <Belk.Ellen@epa.gov>
Subject: RE: Muskogee PM10 monitor 40-101-0167

Dorothy,

Thank you for your quick response. This is good news. We will follow up with a request to discontinue the site. We look forward to discussions concerning the remainder of our proposed network changes. We have been discussing those changes and have come up with a plan that we hope will be satisfactory to you.

From: Crawford, Dorothy [<mailto:Crawford.Dorothy@epa.gov>]
Sent: Wednesday, February 06, 2019 10:30 AM
To: Kent Stafford; Curt Goeller
Cc: Verhalen, Frances; Belk, Ellen
Subject: Muskogee PM10 monitor 40-101-0167

Kent and Curt, This email will be limited to Muskogee PM10 monitor topic. Subsequent email will cover related topics such as grant monitor equipment procurement and possible PM network changes besides Muskogee PM10. Background information is below.

Summary:

ODEQ has operated the Muskogee Continuous PM10 SLAMS monitor since 2002. The Muskogee PM10 monitor is not a 'minimally required' monitor per federal regulations (40 CFR 58 App D, Table D-4). The Muskogee PM10 data patterns are somewhat analogous to those in the Tulsa area in that there tend to be infrequent exceedances with the majority of the measurements below the PM10 NAAQS level. However, while still below NAAQS, Muskogee PM10 data trends higher than the Oklahoma urban areas of OKC and Tulsa. This may be the result of impacts from nearby local PM sources.

Federal regulations 40 CFR 58 App E sec 3.1 indicates ODEQ should generally avoid placing a monitor near local sources unless the objective is to investigate the source emissions. The regulations also call for PM monitors to not be located in an unpaved area. While strong winds can carry PM10 long distances, PM10 emissions tend to impact nearby

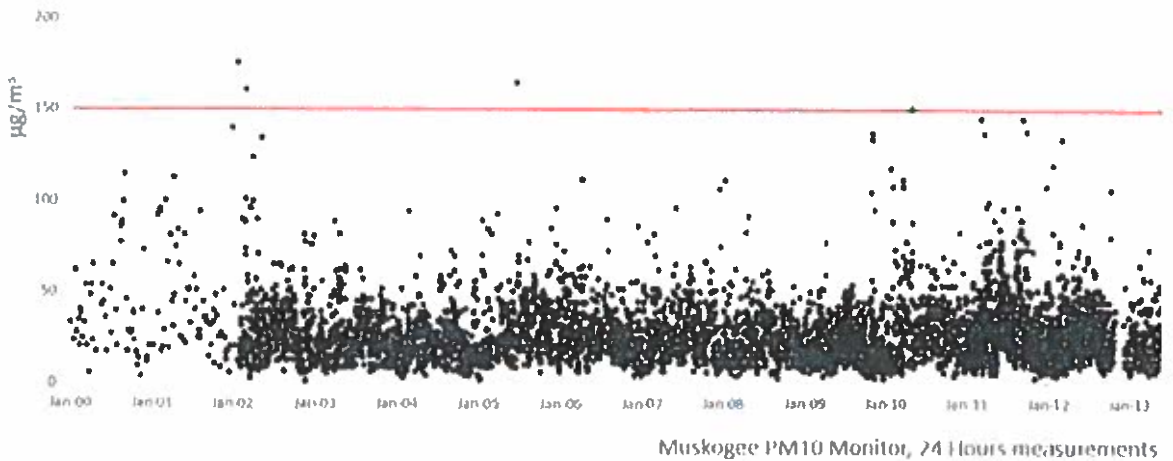
areas. The Muskogee PM10 monitor is located at the Water Treatment plant facility which includes various unpaved roads/drives, parking and/or layout areas. There also appear to be uncovered miscellaneous material stockpiles at the Water Treatment plant. The upwind, based on prevailing, areas at the Water Treatment plant facility are within 1000 feet of the monitor. Even closer but generally downwind of the monitor to the north are more unpaved drives and miscellaneous storage areas. Just beyond the Water Treatment plant main activity area, and upwind to the southeast, between the Vallourec Star east storage yard and the river, is what appears to be a disturbed unpaved area with a sand/soil excavation or processing operation. The Vallourec Star industrial site itself and its east storage yard appears to be paved. I have no information on what the facility building emits.

I am not aware of any citizen concerns with PM levels in the ambient air. The nearest resident appears to be about 1 mile to the south west, generally upwind of the monitor location.

I believe the Muskogee PM10 monitor may be impacted by local sources and not reflective of ambient air in the Muskogee area. The monitor is not required by federal regulations. If ODEQ was to formally request the discontinuation of the Muskogee PM10 monitor, I would recommend EPA management approve the request.

Background:

Muskogee PM10 data:



Pic below:

Orange symbol is the Muskogee PM10 monitor site 40-101-0167 located on the northwest corner of the Water Treatment plant;

Blue line in top right corner represents about 500 feet (just to help with scale);

The main part of the industrial facility (Vallourec Star, steel pipe) is located to the west of the Water Treatment plant across the public road, with an extra storage yard located to the east of the public road and south of the Water Treatment plant;

Port of Muskogee further to the southeast, with Paragon Industries (pipe company) and white material stockpiles;

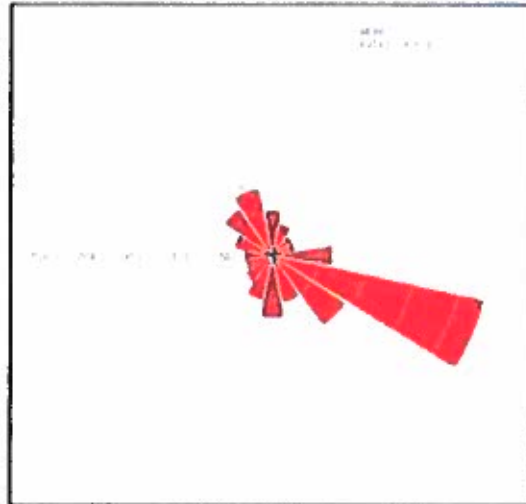


Prevailing winds in the Muskogee area are from the east to southeast (Oklahoma climatological survey, www.ocs.ou.edu).

WINDS

From Webbers Falls Mesonet Site (WEBB); Jan 1994 – Dec 2001

Latitude: 35.47N Longitude: 095.13W Elevation: 479 ft



Wind Roses show the prevailing direction from which the wind is blowing. North is up in the image. The circles show the percentage of time from which the wind is blowing in that direction. For example, Webbers Falls records a east-southeasterly wind about 23 percent of the time, with northerly winds near 5 percent of the time.

The table below shows the percentage of time the wind is blowing from each of the 16-point compass headings, and the percent of time the prevailing wind is recorded in each speed bin.

Maximum Gust: 71.8 mph

Maximum Sustained: 40.3 mph

Overall Average Speed: 7.1 mph

Dorothy Crawford

U.S. EPA, Region 6, Air Monitoring

(214) 665-2771

Appendix F: Annual Network Review Posted for Comment on 5/24/2019

← → http://www.deq.state.ok.us/aqdnew/index.htm#

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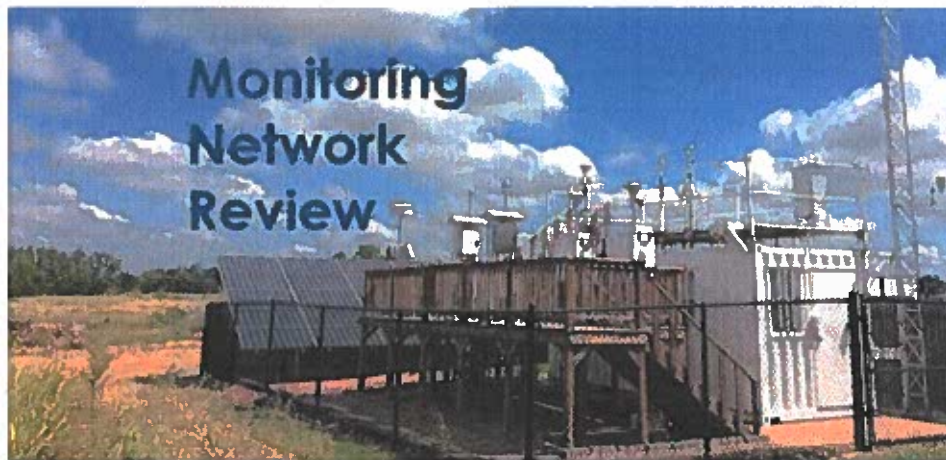
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Our annual Monitoring Network Review is now available for public comment through June 24, 2019. It contains proposed changes to the Oklahoma Air Monitoring Network for 2019.

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