

SCOTT A. THOMPSON **Executive Director**

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

KEVIN STITT Governor

May 12, 2020

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

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

Re: 2020 Annual Network Review

Mr. Robinson:

Please find enclosed the 2020 Annual Network Plan (ANP) from the Oklahoma Department of Environmental Quality (DEQ). This document was 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 and the 5-Year Network Assessment required under 40 CFR §58.10(d) will be separate submissions from the Oklahoma DEQ 2020 ANP. Should staff find that further changes to the ANP 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,

hend & bradery Cheryl E/Bradley

Environmental Programs Manager

Data and Planning Group

Cc:

Fran Verhalen

Ellen Belk

Enclosure



Oklahoma Department of Environmental Quality Air Quality Division 2020 Air Monitoring Network Plan



Oklahoma Department of Environmental Quality 707 N. Robinson P.O. Box 1677 Oklahoma City, OK 73101-1677

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Introduction

This report documents the annual review of the air monitoring network operated by the Oklahoma Department of Environmental Quality's (DEQ) Air Quality Division (AQD). When finalized as the Annual Monitoring Network Plan (ANP), it will be submitted by July 1, 2020 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 ANP:

- 40-037-0146: Sapulpa was discontinued on 12/31/2019. No exceedances were ever recorded. Total lead emissions (2018 Emissions Inventory) from the triggering industrial facility (0.334 tons per year) were below the 0.5 tons per year level, which requires monitoring. Furthermore, the property owner of the site location requested the removal of the site.
- 40-101-0167: Muskogee was discontinued on 5/15/2019.
 - o EPA Approval received on 5/15/2019 (see Appendix A).
- 40-105-0207: Union Special Studies Site PM 2.5 and Ozone discontinued on 12/31/2019
 - 40-147-0217: Special Studies Site PM 2.5 and Ozone will be moved to Copan.
 Ozone data collection began 1/21/2020 and PM 2.5 data collection began 1/29/20.
 The ThermoScientific (TS) SHARP 5030i previously at Union replaced with a Teledyne Advanced Pollution Instrument (API) T640.
 - o Non-NAAQS comparable PM 10 data added.
- 40-121-0415: McAlester TS SHARP 5030i replaced with an API T640 on March 1, 2020
 - o Non-NAAQS comparable PM 10 data added.
- 40-121-0416: Collocated lead monitor was moved to this site (Savanna) on 2/9/2020 to fulfill method code requirements.
- 40-079-0467: Bokoshe discontinued on 6/11/2019.
- 40-109-1037: North Oklahoma City API T640 and TS TEOM replaced with T640x for PM 2.5 and PM 10 parameters on 1/1/2020.
- 40-039-0856: Weatherford site discontinued on 8/24/2019.
- 40-143-1127: North Peoria Tulsa API T640 replaced with an API T640x on 1/29/2020.
 - o NAAQS comparable PM10 data added.

Table 1 is a list of all currently existing ambient air monitoring sites that AQD operates and maintains as of March 16, 2020. 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 03/17/2020 through 04/30/2020 by posting the ANP on its website (40 CFR 58.10(a)(1)). An image of this posting is included in Appendix H of this document.

Contact Information

East Region Manager

Name: Curt Goeller Phone: (405) 702-4126

Email: Curt.Goeller@deq.ok.gov

West Region Manager

Name: Kent Stafford Phone: (405) 702-4139

Email: Kent.Stafford@deq.ok.gov

Table 1. Air Monitoring Site Information:

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/Analysis Method	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA/ CBSA ¹
				PM 2.5	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 6)	Population Exposure	Neighborhood	Yes	
40- 109-	N.W. 5th and Shartel,	35.472920	-97.527090	PM 10	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 6)	Population Exposure	Neighborhood	Yes	OKC MSA
0035	OKC			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	S.E. 19th			Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	OKC
40- 027- 0049	St., Moore Water Tower,	35.320105	-97.484099	PM 2.5	Broadband Spectroscopy	SPM ³	Continuous	Population Exposure	Urban	Yes	OKC MSA
0049	Moore			PM 10	Broadband Spectroscopy	SPM ³	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
				NO_2	Chemiluminescence	SLAMS	Continuous	Highest Concentration/ Near-Road	Micro	Yes	
				PM 2.5	Broadband Spectroscopy	SLAMS	Continuous	Population Exposure	Micro	Yes	
109-	40- 109- 0097 Grand Blvd, OKC 35.503070	-97.577981	PM 10	Broadband Spectroscopy	SPM	Continuous	Population Exposure	Micro	No	OKC MSA	
0097			33.303070 -97.377981	СО	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	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	Neighborhood	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- 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
				Ozone	U.V. Absorption	SLAMS	Continuous	Upwind Background	Urban	Yes	
40- 143- 0174	502 E. 144th Pl., Tulsa South, Tulsa	35.953708	-96.004975	PM 2.5	Broadband Spectroscopy	SPM ³	Continuous	Population Exposure	Urban	Yes	Tulsa MSA
	1 uisu			PM 10	Broadband Spectroscopy	SPM	Continuous	Population Exposure	Urban	No	
40- 143- 0175	1710 W. Charles Page Blvd. Tulsa	36.149877	-96.011664	$\mathrm{SO_2}^4$	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
40-	124 N. Riverside	06.15.1000	0.5.01.501.5	$\mathrm{SO_2}^4$	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	Tulsa
143- 0179	Dr. West, Tulsa	36.154830	-96.015845	H_2S	U.V. Fluorescence	SPM ⁵	Continuous	Source Oriented	Neighborhood	No	MSA

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/Analysis Method	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA/ CBSA ¹
40- 097- 0188	470 13th St., MAIP, Pryor	36.228993	-95.269196	$\mathrm{SO_2}^4$	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	Not in MSA/ CBSA
				Ozone	U.V. Absorption	SPM	Continuous	Regional Transport	Regional	No^6	
40- 147- 0217	112 N Caney St., Copan	36.908183	-95.882623	PM 2.5	Broadband spectroscopy	SPM ³	Continuous	Regional Transport	Regional	$\mathrm{No^6}$	Bartlesville CBSA
0217	Сорин			PM 10	Broadband spectroscopy	SPM	Continuous	Regional Transport	Regional	No^6	
40- 113- 0226	1521 S. Lombard, Skiatook	36.355860	-96.012430	Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes	Tulsa MSA
40- 143-	2443 S. Jackson	36.126945	-95.998941	$\mathrm{SO_2}^4$	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Middle	Yes	Tulsa
0235	Ave., Tulsa	30.120943	-93.990941	H_2S	U.V. Fluorescence	SPM	Continuous	Source Oriented	Middle	No	MSA
	Memorial			Ozone	U.V. Absorption	SPM	Continuous	Regional Transport	Regional	No^6	
40- 019- 0297	Dr., Healdton City Lake,	34.244189	-97.462931	PM 2.5	Broadband Spectroscopy	SPM ³	Continuous	Regional Transport	Regional	Yes	Ardmore CBSA
0291	Healdton			PM 10	Broadband Spectroscopy	SPM	Continuous	Regional Transport	Regional	No	
40- 069- 0324	Murray State College, Tishomingo	34.214818	-96.676936	Ozone	U.V. Absorption	SPM	Continuous	Regional Transport	Regional	No ⁶	Not in MSA/ CBSA

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/Analysis Method	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA/ CBSA ¹	
				Ozone	U.V. Absorption	SLAMS	Continuous	Regional Transport	Regional	Yes		
40-	104 Airport Rd.,			PM 2.5	Broadband Spectroscopy	SLAMS	Continuous Primary	Population Exposure	Regional	Yes		
121- 0415	McAlester Municipal Airport,	34.885608	-95.784410	PM 10	Broadband Spectroscopy	SPM	Continuous	Population Exposure	Regional	No	McAlester CBSA	
	McAlester			PM 2.5	Sequential FRM/ Micro-gravimetric Filter Weighing	SLAMS	(1 in 6) Collocated	Quality Assurance	Regional	Yes		
40- 121-	108 N Main St.,	34.829396	-95.843642	Lead	Hi-Volume	SLAMS	(1 in 6)	Source Oriented	Neighborhood	Yes	McAlester	
0416	Savanna	34.829390	-93.843042	Lead	Hi-Volume	SLAMS	(1 in 12) Collocated	Quality Assurance	Neighborhood	Yes	CBSA	
40- 047- 0555	11826 N 30th St, Kremlin	36.512363	-97.845959	$\mathrm{SO_2}^4$	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	Enid MSA	
40-				SO ₂ ⁴	U.V. Fluorescence	SLAMS	Continuous	Population Exposure/ Source Oriented	Neighborhood	Yes	Ponca	
071- 0604	306 E Otoe, Ponca City	36.697186	-97.081350	PM 2.5	Broadband Spectroscopy	SLAMS	Continuous	Population Exposure	Neighborhood	Yes	City CBSA	
				PM 10	Broadband Spectroscopy	SPM	Continuous	Population Exposure	Neighborhood	No		
				Ozone	U.V. Absorption	SLAMS	Continuous	Population Exposure	Urban	Yes		
40-	2211 NW	24 622080	09 429700	PM 2.5	Broadband Spectroscopy	SPM ³	Continuous	Population Exposure	Urban	Yes	Lawton	
0651	031- 25 th ,	34.632980	34.632980 -98.428790		PM 10	Broadband Spectroscopy	SPM	Continuous	Population Exposure	Urban	No	MSA

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/Analysis Method	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA/ CBSA ¹							
	G : 11'			Ozone	U.V. Absorption	SLAMS	Continuous	General Background	Regional	Yes								
40- 043- 0860	Seiling Municipal Airport,	36.158414	-98.931973	PM 2.5	Broadband Spectroscopy	SPM ³	Continuous	General Background	Regional	Yes	Not in MSA/ CBSA							
0000	Seiling			PM 10	Broadband Spectroscopy	SPM	Continuous	General Background	Regional	No	CDSA							
				$\mathrm{SO}_2{}^4$	U.V. Fluorescence	SLAMS	Continuous	Population Exposure	Urban	Yes								
				Ozone	U.V. Absorption	SLAMS	Continuous	Highest Concentration	Urban	Yes								
				СО	Gas Filter Correlation	SLAMS	Continuous	General Background	Urban	Yes								
40-	2501 E. Memorial Rd.,			NO_2	Chemiluminescence	SLAMS	Continuous	Max Precursor Emissions Impact/ Area- wide NO ₂ and RA40 NO ₂ for OKC CBSA	Urban	Yes								
109- 1037	Oklahoma Christian University, OKC	35.614131	35.614131 -97.475083	Chemical Speciation	Low Volume Gravimetric/Micro- gravimetric filter weighing	SLAMS	(1 in 6)	Population Exposure	Urban	No	OKC MSA							
			PM 2.5	Sequential FRM/ Micro-gravimetric filter weighing	SLAMS	(1 in 3) Collocated	Population Exposure	Urban	Yes									
											PM 2.5	Broadband Spectroscopy	SLAMS	Continuous Primary	Population Exposure	Urban	Yes	
				PM 10	Broadband Spectroscopy	SLAMS	Continuous	Population Exposure	Urban	Yes								

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/Analysis 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/ Area-wide NO ₂ and RA40 NO ₂ for Tulsa CBSA	Urban	Yes		
				Trace level NOy	Chemiluminescence	NCore/ SLAMS	Continuous	Maximum Precursor Emissions Impact	Urban	No		
	3520 1/2 N.			Trace level CO	Gas Filter Correlation	NCore/ SLAMS	Continuous	Population Exposure	Urban	Yes		
40- 143-	Peoria, North Tulsa-	36.204902	-95.976537	-95.976537	Trace level SO_2^4	U.V. Fluorescence	NCore/ SLAMS	Continuous	Population Exposure	Urban	Yes	Tulsa MSA
1127	Fire Station #24, Tulsa				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	Yes		
				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		

Note – The PM 2.5/10 (2 parameters/1 monitor) listed as "broadband spectroscopy" at 40-109-1037 and 40-143-1127 are API Model T640x instruments designated NAAQS comparable for PM 2.5 and PM 10. All others are API Model T640 instruments designated NAAQS comparable for PM 2.5 and Non-NAAQS comparable for PM 10.

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.

⁵H₂S 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.

⁶40-105-0217, 40-019-0297, and 40-069-0324 are intentionally designed as SPMs to capture less than 3 years of data and therefore will not be compared to NAAQS values for the purpose of attainment/non-attainment.

Table 2. AQD Network Proposed Changes

Monitoring Sites to be Removed:

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/Analysis Method	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
40- 101- 0170	108 North 55th St. East, Fort Gibson	35.775813	-95.287067	SO_2	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	Muskogee CBSA
40- 143- 0179	124 N. Riverside Dr. West, Tulsa	36.154830	-96.015845	SO_2	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	Tulsa MSA
40- 097- 0188	470 13th St., MAIP, Pryor	36.228993	-95.269196	SO_2	U.V. Fluorescence	SLAMS	Continuous	Source Oriented	Neighborhood	Yes	Not in MSA/ CBSA

- 40-101-0170: ODEQ plans to remove the Fort Gibson SO₂ source site with completion of the necessary data evaluation, and upon EPA review and approval. Monitored data has been less than 50% of the NAAQS (and continues to decline) as required by the DRR (Data Requirements Rule).
- 40-143-0179: ODEQ has determined that Tulsa Riverside should be shut down. Not only is the site SO₂ comparable to Newblock Park (40-143-0175) but the site is close to being outside of specifications for siting criteria.
- 40-097-0188: ODEQ plans to remove the Pryor SO₂ source site with completion of the necessary data evaluation, and upon EPA review and approval. Monitored data has been less than 50% of the NAAQS (and continues to decline) as required by the DRR (Data Requirements Rule).

Monitoring Sites to be Relocated:

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
40-	502 E. 144th			Ozone	U.V. Absorption	SLAMS	Continuous	Upwind Background	Urban	Yes	
143- 0174	Pl., Tulsa South,	35.953708	-96.004975	PM 2.5	Broadband Spectroscopy	SPM	Continuous	Population Exposure	Urban	Yes	Tulsa MSA
0174	Tulsa			PM 10	Broadband Spectroscopy	SPM	Continuous	Population Exposure	Urban	No	
40- 143- 0179	124 N. Riverside Dr. West, Tulsa	36.154830	-96.015845	H_2S	U.V. Fluorescence	SPM	Continuous	Source Oriented	Neighborhood	No	Tulsa MSA

- 40-143-0174: ODEQ is currently discussing the relocation of Site 40-143-0174 with the City of Glenpool. The site is on the verge of not meeting siting criteria as specified by 40 CFR Part 58 Appendix E §5.a. The site will be moved approximately one mile south near the Glenpool water tower pending finalization of a 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.
- 40-143-0179: With the requested shutdown of 40-143-0179, ODEQ will relocate the H_2S to 40-143-0175 to continue monitoring the area.

Monitoring Sites in Process of Being Added:

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

- 40-075-0711: ODEQ is currently in the process of finalizing the site agreement and will update EPA as information becomes available. Please see Appendix D for further prospective site information. Please see Appendix D for further information.
- 40-087-1074: ODEQ is currently in the process of finalizing the site agreement and will update EPA as information becomes available. Please see Appendix E for further prospective site information. Please see Appendix E for further information.

Appendix A: Network Requirements

Parameter	Number of Monitors Required in Part 58 App D	Reason(s) for Requirement Part 58 App D	Number of Other Non-Required SLAMS/SPM Monitors Currently in Operation	Reason(s) for Optional Monitors	Total Monitors Operated
	2	OKC MSA/Population			2
	2	Tulsa MSA/Population			2
Ozone	1	Lawton MSA/Population			1
	1	NCore			1
			3	SPM and/or Transport	3
			6	AQI/Advisories	6
Total	6		9		15
G 1	1	Near-Road			1
Carbon Monoxide	1	NCore			1
Monoxide			1	Background	1
Total	2		1		3
	1	Near-Road			1
Nitrogen Dioxide	1	NCore; Area-wide NO ₂ and RA40 NO ₂ for Tulsa MSA			1
Dioxide	1	Area-wide NO ₂ and RA40 NO ₂ for OKC MSA			1
Total	3				3
NOy	1	NCore			1
Total	1				1
	1	NCore			1
	3	SO ₂ DRR ²			3
Sulfur	1	Tulsa CBSA PWEI			1
Dioxide			3	Major Source	3
			1	OKC MSA/Population	1
Total	5		4		9
Hydrogen Sulfide			2	Population/State Standard	2
Total			2		2

Parameter	Number of Monitors Required in Part 58 App D	Reason(s) for Requirement Part 58 App D	Number of Other Non-Required SLAMS/SPM Monitors Currently in Operation	Reason(s) for Optional Monitors	Total Monitors Operated	
Lead	1	Sources > 0.5 tons/year			1	
	1	QA Collocation			1	
Total	2				2	
	2	OKC MSA/Population			2	
	1	Tulsa MSA - Population/NCore			1	
	1	Method Collocation			1	
	2	QA Collocation			2	
$PM2.5^3$	1	Background			1	
	1	Transport				
	1	Near-Road			1	
			6	AQI/Advisories	6	
			1	SPM/Transport	1	
Total	9		7		16	
	2	OKC MSA/Population			2	
	1	QA Collocation			1	
	1	Tulsa MSA/NCore Coarse			1	
PM10 ^{1,4}			2	AQI/Advisories (NAAQS Comparable)	2	
			8	AQI/Advisories (Non- NAAQS Comparable)	8	
			1	SPM/Transport (Non- NAAQS Comparable)	1	
Total	4		11		15	
PM10 - 2.5	1	NCore			1	
(Coarse)			1	Supplemental	1	
Total	1		1		2	

¹There are 9 sites utilizing the API T640 technology, currently collecting non-NAAQS PM10 data.

² Though listed as being required under 40 CFR Part 58 Appendix D, the DRR monitors are required under 40 CFR Part 51.

³ Per 40 CFR Part 58 Table D-5 of Appendix D, while the Enid MSA has a population of >50,000, Oklahoma DEQ has met the minimum monitoring requirements due to the statewide PM 2.5 being <85% of PM 2.5 NAAQS.

⁴Per 40 CFR Part 58 Table D-4 of Appendix D, while the Lawton MSA has a population of >100,000, Oklahoma DEQ has met the minimum monitoring requirements due to statewide PM 10 being <80% of PM 10 NAAQS.

Note – This chart reflects existing network conditions.

Appendix B: PWEI¹ Numbers for Determination of Minimum SO₂ Sites

	<u>: PWEI Number</u>	2018 SO ₂	Total Emissions ²	Population ³	PWEI ²	
MSA/CBSA	Counties	Emissions ² (tons)	(tons)	(people)	(tons/million people)	
	Oklahoma County	160				
	Cleveland County	5				
	Canadian County	188				
Oklahoma City	Grady County	34	408	1,396,445	570	
	Logan County	1				
	McClain County	17				
	Lincoln County	2				
	Tulsa County	249				
	Rogers County	4,861				
	Wagoner County	12				
Tulsa	Creek County	232	5,485	993,797	5,451	
	Osage County	9				
	Okmulgee County	123				
	Pawnee County	0				
Lawton	Comanche County	5	5	126,198	1	
Lawton	Cotton County	0	J	120,198		
Stillwater	Payne County	4	4	43,877	0	
Shawnee	Pottawatomie County	5	5	72,679	0	
Muskogee	Muskogee County	11,898	11,898	68,362	813	
Enid	Garfield County	17,651	17,651	60,913	1,075	
Bartlesville	Washington County	2	2	51,843	0	
Tahlequah	Cherokee County	5	5	48,675	0	
Ardmore	Carter County	295	207	58,311	17	
Aramore	Love County	3	297	38,311		
Ponca City	Kay County	2,474	2,474	44,161	109	
McAlester	Pittsburg County	24	24	43,877	1	
Duncan	Stephens County	71	71	43,265	3	
Durant	Bryan County	179	179	47,192	8	
Ada	Pontotoc County	113	113	38,247	4	
Miami	Ottawa County	2	2	31,175	0	
Weatherford	Custer County	13	13	27,469	0	
Altus	Jackson County	2	2	24,949	0	
Elk City	Beckham County	12	12	21,709	0	
Guymon	Texas County	37	37	20,455	1	
Woodward	Woodward County	82	82	20,222	2	

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 on the 2018 Census estimations found at https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml using the advanced search feature with the Geographies parameter set to "All Metropolitan and Micropolitan Statistical Areas within the United States and Puerto Rico." The table ID used was PEPANNRES.

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/nav/jsf/pages/index.xhtml) using the advanced search feature with Geographies set to the state of Oklahoma. The table ID used was PEPANNRES.

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:

Oklahoma DEQ understands some of its monitoring area is shared with the Tribal Nations and Arkansas DEQ. Oklahoma DEQ has no standing agreements with Tribal Nations or Arkansas DEQ for the division of monitoring responsibilities to fulfill monitoring requirements at this time. Oklahoma DEQ will continue to monitor the situation and maintain its current connections with these two agencies and address any deficiencies should they arise.

National Air Toxics Trends Stations

Oklahoma DEQ plans to begin NATTS monitoring at the NCore station in Tulsa, Oklahoma in July of 2020 pending grant approval by EPA.

Review of Site Conditions

As our network adjusts for efficiency, Oklahoma DEQ will continue to replace older shed-style buildings with newer shipping container style buildings. This style of building is better insulated and more energy efficient than the previous generation of buildings. Among other improvements, the built-in mini-split units provide better climate control for analyzers and operators alike.

Appendix D: Prospective Site 40-075-0711

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
40- 075- 0711	Great Plains State Park, Mountain Park	34.745832	-98.967698	Ozone	U.V. Absorption	SPM	Continuous	Background/ Transport	Regional	No	Not in CBSA/ MSA

Overhead View



AQS Site # 40-075-0711 (Great Plains State Park) will monitor Ozone in western Oklahoma to cover a 'hole' in ODEQ's network coverage. The site will be located near the visitor center for the Great Plains State Park on relatively flat land, ¼ mile away from a lake and small hills. The site will be located approximately 65 meters from the nearest road and over 1700 meters to the closest highway with an Annual Average Daily Traffic count of 1400 per the 2018 Oklahoma Highway Systems count.

North



East



West



South



Northeast



Southeast



Southwest



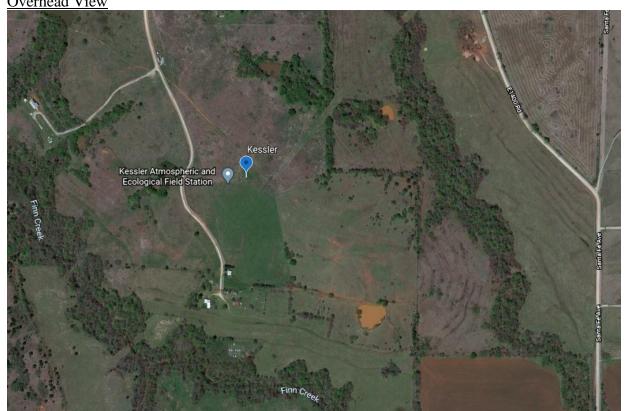
Northwest



Appendix E: Prospective Site 40-087-1074

AQS Site #	Address/ Location	Latitude	Longitude	Pollutants Measured	Sampling/ Analysis Method	Station Type	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comparable	MSA
40- 087- 1074	Kessler, Woody Chapel	34.982462	-97.520655	Ozone	U.V. Absorption	SLAMS	Continuous	Background	Regional	Yes	OKC MSA

Overhead View



AQS Site # 40-087-1074 (Kessler) will be the replacement Ozone site for AQS Site # 40-087-1073 (Goldsby), recently shut down due to construction in the area. The site will be housed in the Kessler Atmospheric and Ecological Field station located approximately 120 meters from the nearest road and approximately 2400 meters to the closest highway with an Annual Average Daily Traffic count of 590 per the 2018 Oklahoma Highway Systems count.

At this time, ODEQ does not have any available pictures from the site. Due to legal circumstances, Kessler may not begin data collection for another year. ODEQ will continue to keep Region 6 notified of any changes that may occur.

Appendix F: EPA Approval to Discontinue 40-101-0167 dated 5/15/2019



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6 1445 ROSS AVENUE, SUITE 1200 DALLAS TX 75202-2733

MAY 1 5 2019

Cheryl E. Bradley
Environmental Programs Manager
Data and Planning Section
Oklahoma Department of Environmental Quality
P.O. Box 1677
Oklahoma City, OK 73101-1677

Dear Ms. Bradley:

This letter responds to the Oklahoma Department of Environmental Quality (ODEQ) letter dated April 17, 2019, regarding proposed modifications to the ambient air monitoring network measuring particulate matter 10 micrometers or less in diameter (PM₁₀). Specifically, the ODEQ requests to discontinue the PM₁₀ monitor located at the Muskogee site (AQS ID 40-101-0167) and to decommission the site.

The U.S. Environmental Protection Agency has reviewed the proposed monitor discontinuation and site closure and, in accordance with 40 CFR 58.14 and 40 CFR 58 Appendices, approves the system modifications to the PM₁₀ network. During the upcoming 30-day public comment period for the ODEQ 2019 Annual Monitoring Network Plan, the public can be provided an opportunity to review and comment on the modifications. We request that any public input received regarding the modifications be resolved prior to ODEQ's implementation of the modifications.

We look forward to our continued collaborative work on the Oklahoma ambient air monitoring network. If you have any questions, please contact me at (214) 665-6435, or Ms. Frances Verhalen, Chief of the Air Monitoring and Grants Section at (214) 665-2172.

Sincerely,

Jeff Robinson Branch Chief

Air Permits, Monitoring & Grants Branch

cc: Kent Stafford Curt Goeller

Appendix G: EPA Response to ODEQ 2019 ANP



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6 1201 ELM STREET, SUITE 500 DALLAS, TEXAS 75270 – 2102

October 28, 2019

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) 2019 Annual Monitoring Network Plan (2019 Plan) for ambient air. The U.S. Environmental Protection Agency (EPA) has completed its review of the 2019 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 2019 Plan dated June 26, 2019, which we received on July 02, 2019. Also, your letter dated September 18, 2019, requesting a system modification to your monitoring network for particulate matter, was received September 23, 2019. 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 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 2019 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 2019 plan and your proposed system modification dated September 18, 2019, are approved in accordance with 40 CFR 58 and Appendices, including §58.10 and §58.14. Details of our review are enclosed. We can discuss our review with you if you would like. Additionally, separate from the 2019 Plan review, we acknowledge receipt on July 15, 2019, of the ODEQ 2019 SO₂ annual report, dated July 11, 2019, 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) 665-6435, or your staff may contact Ms. Frances Verhalen, Air Monitoring and Grants Section Chief, at (214) 665-2172.

Sincerely,

10/28/2019



Jeff Robinson

Signed by: JEFFERY ROBINSON

Branch Chief

Air Permits, Monitoring & Grants Branch

Enclosure

Oklahoma Department of Environmental Quality Air Quality Division (AQD) 2019 Annual Ambient Air Monitoring Network Plan Technical Comments

The 2019 (FY2020) Oklahoma Annual Monitoring Network Plan (ANP), dated June 26, 2019, was received on July 2, 2019. Because this ANP addresses requirements for July 1 of 2019, this plan will be referred to as the "2019 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 2019 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 2019 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 (2019 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.

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 approves the permanent shutdown of the ozone monitors at Oklahoma City site AQS #40-109-0033 (NE 10th and Stonewall) on December 31, 2018 and at Oklahoma City site AQS #40-087-1073 (Goldsby) on December 5, 2018, as they are not required to meet ozone monitoring minimum requirements for the Oklahoma City MSA.

The EPA looks forward to receiving information in the future from the ODEQ regarding the proposed Kessler ozone monitoring site (AQS #40-087-1074) as a replacement for the old Goldsby ozone monitoring site. The EPA also looks forward to receiving information in the future from the ODEQ regarding: (1) a proposed new ozone monitoring site at Great Plains State Park (AQS #40-075-0711) in order to gain new ozone monitoring data further west of the current ODEQ ozone monitoring network; and (2) a proposed short relocation of the existing Glenpool ozone monitoring site in Tulsa (AQS #40-143-0174).

Finally, the EPA acknowledges the shutdown of the Lake Waurika Red River special purpose monitor (SPM) ozone site (AQS #40-067-0671) on November 27, 2018, and the relocations of Red River SPM ozone sites from Burneyville (AQS #40-085-0300) on December 4, 2018 to Healdton (AQS #40-019-

0297) on March 1, 2019, and from Durant (AQS #40-013-0380) on December 13, 2018 to Tishomingo (AQS #40-069-0324) on March 1, 2019. We note that all of these SPM site locations were previously approved, that SPM sites have the flexibility to start up and shut down within a two-year time period, and are appreciative of ODEQ notifying us of these changes.

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 2019 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 approves the permanent shutdown of the oxides of nitrogen (NO_x) monitor at Oklahoma City site AQS #40-109-0033 (NE 10th and Stonewall) on December 31, 2018. Also, the EPA approves the relocation of the NO_x monitor from the old NE 10th and Stonewall site to the existing Oklahoma City North site¹ (AQS #40-109-1037), with measurements at the Oklahoma City North site beginning January 18, 2019. Therefore, the Oklahoma City North site (AQS #40-109-1037) becomes the new NO₂ area-wide and susceptible and vulnerable population (RA40) NO₂ site for the Oklahoma City MSA.

Near-Road (NO2) Monitoring Site

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 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 2019 Plan.

SO₂ Annual Report

Additionally, separate from the ANP review, we acknowledge receipt on July 15, 2019 of the ODEQ 2019 SO₂ annual report required under §51.1205(b). The EPA notes that SO₂ emissions for AES Shady Point Cogeneration Plant and OG&E-Sooner Generating Station each increased slightly from 2017 to 2018 due to increased demand. The ODEQ pointed out, however, that in spite of those fluctuations, annual emissions for the 2018 calendar year remain below the quantities modeled for the SO₂ NAAQS compliance demonstrations. The data reviewed indicate that the areas surrounding the applicable sources are in attainment of the 2010 SO₂ 1-hour NAAQS. Therefore, the EPA agrees with the conclusion of this report that no additional SO₂ modeling is needed.

¹ The Oklahoma City North location (AQS #40-109-1037) is also referred to as the Oklahoma Christian location.

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 in a letter dated January 20, 2017, the ODEQ discontinued monitoring for Pb at the National Core (NCore) Multi-pollutant Monitoring site in Tulsa.

Particulate Matter (PM) Monitoring

The ODEQ is 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 2.5 Microns or Less (PM2.5) (40 CFR Part 58, Appendix D Section 4.7)

The plan to relocate the PM_{2.5} monitor at the Tulsa Glenpool site (AQS ID 40-143-0174) will be reviewed when specifics of the new location are provided.

The EPA appreciates the update about the PM_{2.5} monitor (POC 1) at the Central Fire Station site (AQS ID 40-109-0035) operating schedule change from 1-in-3 day to 1-in-6 day. The EPA appreciates the update about the installation of the PM_{2.5} monitor at the Bokoshe site (AQS ID 40-079-0467).

PM2.5 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 North Tulsa site (AQS ID 40-143-1127).

For the PM_{2.5} monitors which the ODEQ operates using Federal Equivalent Method (FEM) number 236, collocation is met at the McAlester site (AQS ID 40-121-0415).

For the PM_{2.5} monitors which the ODEQ operates using FEM number 238, collocation is met at the Oklahoma City North site (AQS ID 40-109-1037).

Multiple PM Measurements from an individual monitor

The EPA appreciates learning about the plan to replace the T640 PM_{2.5} monitors at the Oklahoma City North site (AQS ID 40-109-1037) and the North Tulsa site (AQS ID 40-143-1127) with T640X monitors. The EPA appreciates learning PM₁₀ NAAQS comparable measurements will continue to be reported from the Oklahoma City North site (see PM₁₀ monitor discontinuation below) and start to be reported from the North Tulsa site because of the monitor replacements.

The EPA appreciates learning about the plan to replace the Sharp PM_{2.5} monitors at the McAlester site (AQS ID 40-121-0415) and the Union site (AQS ID 40-105-0207) with T640 monitors. The EPA appreciates learning PM₁₀ non-NAAQS comparable measurements will also be reported from these sites because of the monitor replacements.

The EPA appreciates the update about the reporting of PM₁₀ non-NAAQS comparable measurements from the Healdton Lake site (AQS ID 40-019-0297), Ponca City site (AQS ID 40-071-0604), and Lawton site (AQS ID 40-031-0651). These new measurements are from the T640 monitors previously installed at the sites.

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

The plan to discontinue with PM₁₀ TEOM monitor at the Oklahoma City North site (AQS ID 40-109-1037) is approved.

As stated in the EPA May 15, 2019, letter, the plan to discontinue the PM₁₀ monitor at the Muskogee (AQS ID 40-101-0167) is approved.

The ODEQ September 18, 2019, request to discontinue the PM₁₀ monitor in Rader Park, Weatherford, OK (AQS ID 40-039-0856), and to discontinue the site, is approved. Because this request was received after the 2019 Plan submittal, we ask that this change to the air monitoring network, and date of discontinuation, be identified in next year's plan.

The plan to relocate the PM₁₀ monitor at the Tulsa Glenpool site (AQS ID 40-143-0174) will be reviewed when specifics of the new location are provided.

The EPA appreciates the update about the PM₁₀ monitor (POC 2) at the Central Fire Station site (AQS ID 40-109-0035) operating schedule change from 1-in-6 day to 1-in-12 day.

The EPA appreciates the update about the changes at the Oklahoma City North site (AQS ID 40-109-1037) which were approved with the EPA October 15, 2018, letter, i.e., the decommissioning of the PM₁₀ monitor and the discontinuation of the reporting of the PM Coarse parameter.

The EPA appreciates the update about the installation of the PM₁₀ monitor at the Bokoshe site (AQS ID 40-079-0467).

PM10 Quality Assurance Collocation

For the PM₁₀ Manual monitors which the ODEQ operates using Federal Reference Method (FRM) number 127, collocation is met at the Central Fire Station site (AQS ID 40-109-0035).

Appendix H: ANP Posted for Public Comment from 3/17/2020 through 4/30/2020

