

Reconsideration of PM2.5 & Ozone NAAQS

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OKLAHOMA
Environmental
Quality

Introduction

- Reconsideration of PM_{2.5} National Ambient Air Quality Standards (NAAQS)
- Reconsideration of Ozone NAAQS
- Potential Impact of Tightened NAAQS on Air Quality Program

PM2.5 NAAQS

➤ PM2.5 NAAQS 2012

24-hr Primary and Secondary Standard	Annual Primary Standard	Annual Secondary Standard
35 $\mu\text{g}/\text{m}^3$ 24-hr average	12 $\mu\text{g}/\text{m}^3$ annual mean (3-year average)	15 $\mu\text{g}/\text{m}^3$ annual mean (3-year average)

➤ EPA Decision to Retain – 12/7/2020

Reconsideration of PM2.5 NAAQS

- ▶ 6/10/2021 – EPA is reconsidering its December 2020 decision because available scientific evidence and technical information indicate that the current standards may not be adequate to protect public and welfare, as required by the Clean Air Act (CAA).
- ▶ 5/26/2022 – EPA released *Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter*.
87 FR 31965

Under Consideration

► PM2.5 Annual and 24-hour Averages

	24-hr Primary and Secondary Standard	Annual Primary Standard	Annual Secondary Standard
EPA Policy Assessment	30 $\mu\text{g}/\text{m}^3$ 24-hour average	10 to 12 $\mu\text{g}/\text{m}^3$ annual mean (3-year average)	10 to 12 $\mu\text{g}/\text{m}^3$ annual mean (3-year average)
Existing (2012)	35 $\mu\text{g}/\text{m}^3$ 24-hr average	12 $\mu\text{g}/\text{m}^3$ annual mean (3-year average)	15 $\mu\text{g}/\text{m}^3$ annual mean (3-year average)

► PM10 Standards also part of reconsideration.

Timeline

- ▶ Summer 2022 - EPA announces decision and would propose any revisions to the PM2.5 NAAQS
- ▶ Spring 2023 – NAAQS Revisions Final
- ▶ If PM2.5 NAAQS is revised, the federal CAA deadline for designations would be no later than 2 years after promulgation of the revised NAAQS
 - ▶ **2024** based on **2021-2023** monitoring data, or
 - ▶ **2025** based on **2022-2024** monitoring data.

Ozone NAAQS

- Ozone 2015 NAAQS 0.070 ppm (70 ppb) 8-hour average
- EPA decided to retain – 12/31/2020, 85 FR 87256
- Clean Science Advisory Committee (CASAC) considered 60 to 70 ppb levels.

	8-hour Standard
CASAC recommended	0.060-0.070 ppm 8-hr average (60-70 ppb)
Existing (2015)	0.070 ppm 8-hr average (70 ppb)

Ozone NAAQS Reconsideration

- 10/28/21 – EPA announced that it would reconsider the December 2020 decision to retain the existing ozone NAAQS.
- 4/29/22 – EPA draft *Policy Assessment (PA) For Reconsideration of the National Ambient Air Quality for Ozone*.
- *PA indicates EPA recommends retention of current Ozone NAAQS.*
- *CASAC currently reviewing draft PA*

Timeline for Ozone Reconsideration

- EPA intends to complete reconsideration by end of 2023.
- 12/21/21 – The Court ordered that consolidated litigation cases be held in abeyance until December 15, 2023.
- If the Ozone NAAQS is revised, the federal CAA deadline for designations would be no later than 2 years after promulgation of the revised NAAQS
 - In **2025** based on **2022-2024** monitoring data or,
 - In **2026** based on **2023-2025** monitoring data.

Potential Impacts of Tightened Standards

➤ Non-Attainment Areas

- Offsets required
- Conformity – General & Transportation
- Additional Controls for sources
- Rules and SIP Revisions

➤ Exceptional Event Demonstrations – cost per demo = \$50 to \$100 K

➤ Tighter Increments in attainment areas

➤ Revised NAAQS result in higher costs for Air Quality Program

Monitoring Network, Current Values, and Areas that May Exceed Future NAAQS Values

Ryan Biggerstaff, Environmental Programs Manager
Air Monitoring East Section
Air Quality Division



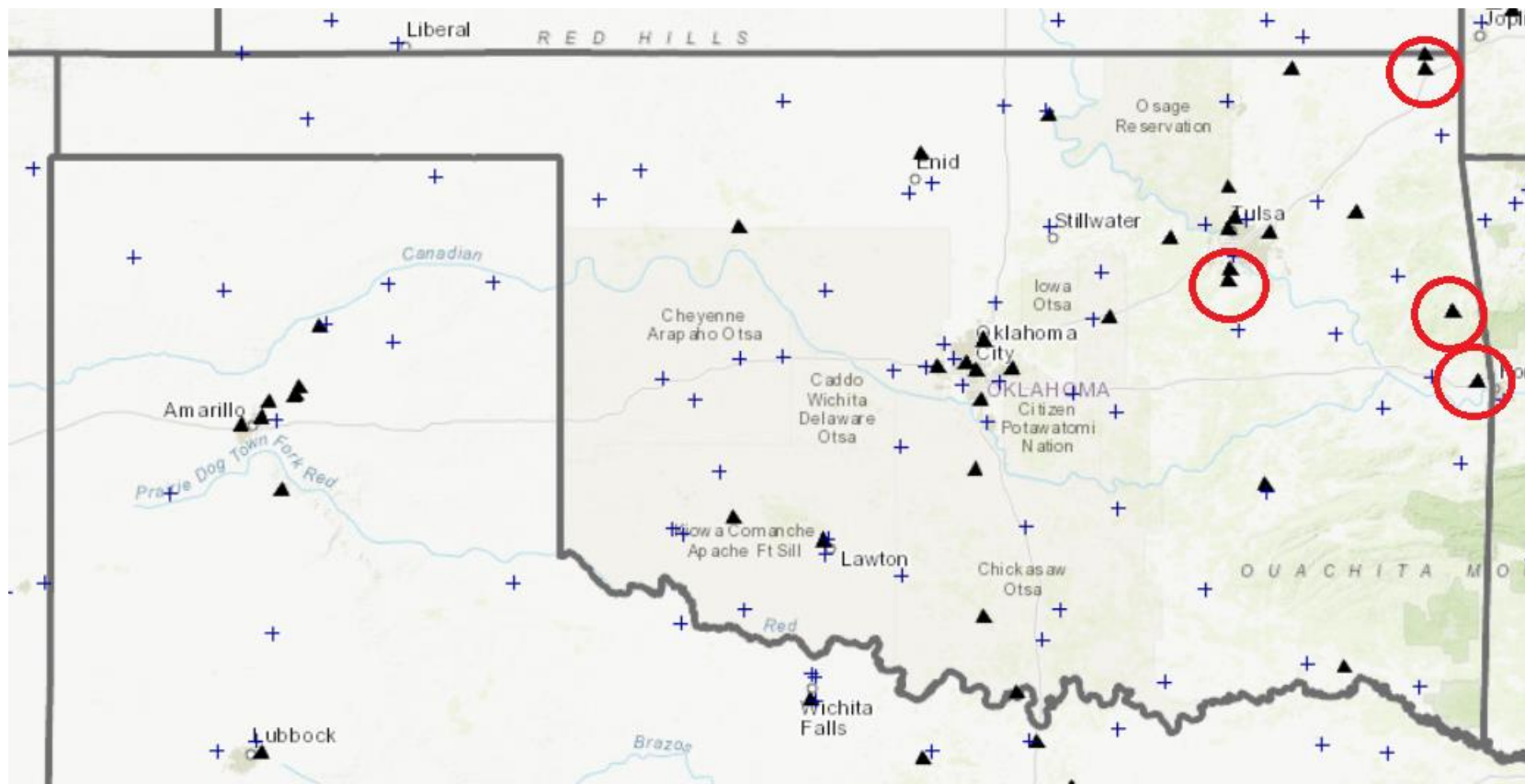
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Possible PM2.5 NAAQS

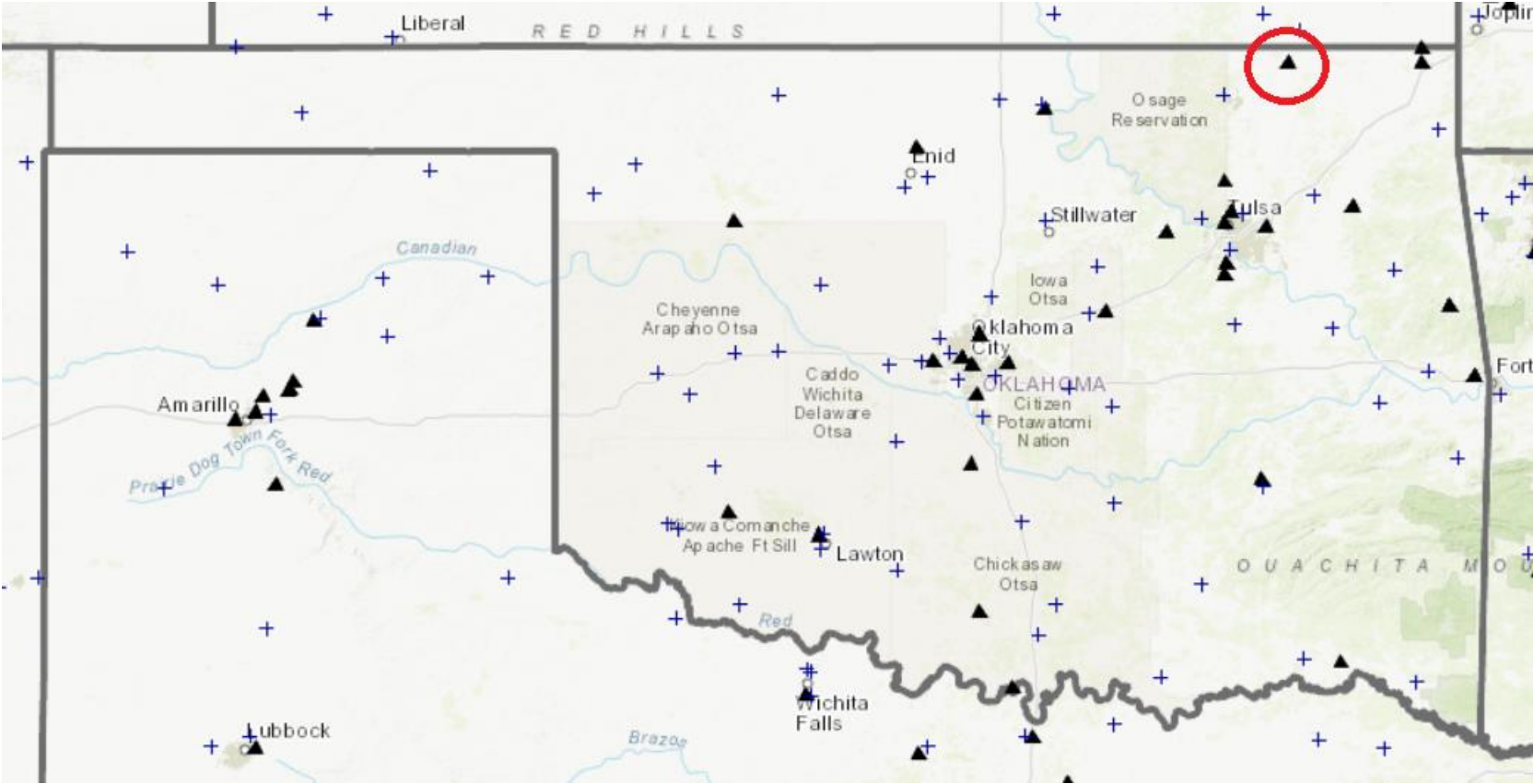
~30 $\mu\text{g}/\text{m}^3$ 24 hour Average

10.0 $\mu\text{g}/\text{m}^3$ Annual Mean

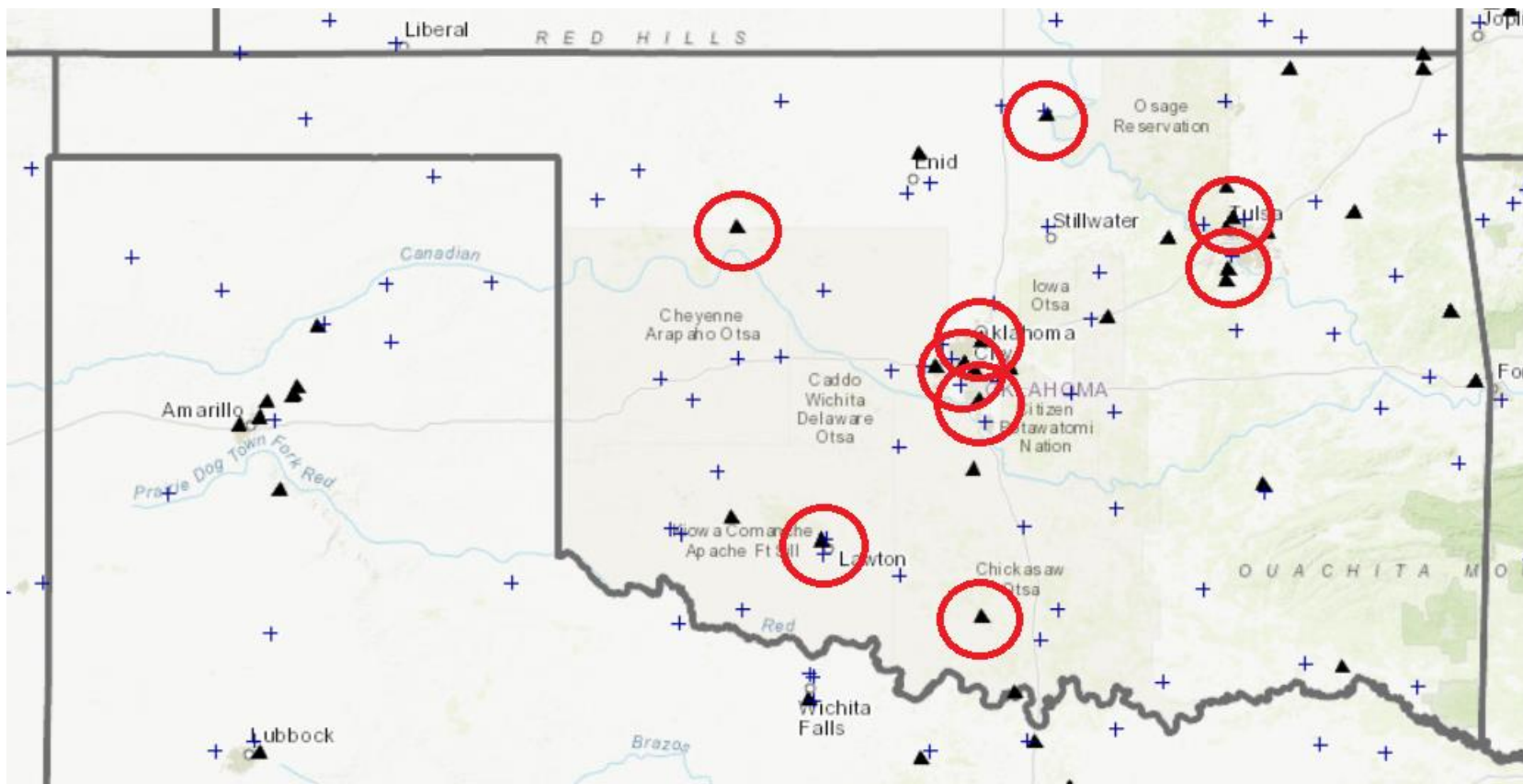
Tribal PM_{2.5} Monitors



DEQ Special Purpose PM_{2.5} Monitor



DEQ NAAQS Comparable PM_{2.5} Monitors



Timeline of Primary PM_{2.5} National Ambient Air Quality Standards (NAAQS)

Final Rule/Decision	Averaging Time	Level	Form
1997	24 hour	65 µg/m ³	98th percentile, averaged over 3 years
1997	Annual	15.0 µg/m ³	Annual arithmetic mean, averaged over 3 years
2006	24 hour	35 µg/m ³	98th percentile, averaged over 3 years
2006	Annual	15.0 µg/m ³	Annual arithmetic mean, averaged over 3 years
2012	24 hour	35 µg/m ³	98th percentile, averaged over 3 years
2012	Annual	12.0 µg/m ³	Annual arithmetic mean, averaged over 3 years
2020	Primary and secondary standards retained, without revision.		

Site	2019	2020	2021	19-21 Avg	20-22 Avg	2022
	98th %	98th %	98th %	98%	98%	Critical Value to reach 35
Moore (049)	20.4	23.7	26.8	23.6	22.5	56
OKC Near Road (097)	18.9	20.7	27	22.2	21	58.8
Glenpool (174)	18.2	19.9	26.9	21.7	21.5	59.7
Healdton (297)	15.7	24	20.3	20	20.6	62.2
McAlester (415)	17.1	21.6	27.4	22	23.5	57.5
Ponca City (604)	19	20.7	36.3	25.3	25.2	49.5
Lawton (651)	17.2	18.5	20.5	18.7	18.4	67.5
Seiling (860)	17.1	17.2	19.2	17.8	16.9	70.1
OKC North (1037)	21.1	21.9	23.9	22.3	21.6	60.7
Tulsa Central (1127)	22.5	20.7	28.3	23.8	22.4	57.5

Site	2019	2020	2021	19-21 Avg	20-22 Avg	2022
	98th %	98th %	98th %	98%	98%	Critical Value to reach 35
Moore (049)	20.4	23.7	26.8	23.6	22.5	56
OKC Near Road (097)	18.9	20.7	27	22.2	21	58.8
Glenpool (174)	18.2	19.9	26.9	21.7	21.5	59.7
Healdton (297)	15.7	24	20.3	20	20.6	62.2
McAlester (415)	17.1	21.6	27.4	22	23.5	57.5
Ponca City (604)	19	20.7	36.3	25.3	25.2	49.5
Lawton (651)	17.2	18.5	20.5	18.7	18.4	67.5
Seiling (860)	17.1	17.2	19.2	17.8	16.9	70.1
OKC North (1037)	21.1	21.9	23.9	22.3	21.6	60.7
Tulsa Central (1127)	22.5	20.7	28.3	23.8	22.4	57.5

Site	2019	2020	2021	19-21 Avg	20-22 Avg	2022
	98th %	98th %	98th %	98%	98%	Critical Value to reach 35
Moore (049)	20.4	23.7	26.8	23.6	22.5	56
OKC Near Road (097)	18.9	20.7	27	22.2	21	58.8
Glenpool (174)	18.2	19.9	26.9	21.7	21.5	59.7
Healdton (297)	15.7	24	20.3	20	20.6	62.2
McAlester (415)	17.1	21.6	27.4	22	23.5	57.5
Ponca City (604)	19	20.7	36.3	25.3	25.2	49.5
Lawton (651)	17.2	18.5	20.5	18.7	18.4	67.5
Seiling (860)	17.1	17.2	19.2	17.8	16.9	70.1
OKC North (1037)	21.1	21.9	23.9	22.3	21.6	60.7
Tulsa Central (1127)	22.5	20.7	28.3	23.8	22.4	57.5

Site	2019	2020	2021	19-21 Avg	20-22 Avg	2022
	98th %	98th %	98th %	98%	98%	Critical Value to reach 35
Moore (049)	20.4	23.7	26.8	23.6	22.5	56
OKC Near Road (097)	18.9	20.7	27	22.2	21	58.8
Glenpool (174)	18.2	19.9	26.9	21.7	21.5	59.7
Healdton (297)	15.7	24	20.3	20	20.6	62.2
McAlester (415)	17.1	21.6	27.4	22	23.5	57.5
Ponca City (604)	19	20.7	36.3	25.3	25.2	49.5
Lawton (651)	17.2	18.5	20.5	18.7	18.4	67.5
Seiling (860)	17.1	17.2	19.2	17.8	16.9	70.1
OKC North (1037)	21.1	21.9	23.9	22.3	21.6	60.7
Tulsa Central (1127)	22.5	20.7	28.3	23.8	22.4	57.5

Site	2019	2020	2021	19-21 Avg	20-22 Avg	2022
	98th %	98th %	98th %	98%	98%	Critical Value to reach 30
Moore (049)	20.4	23.7	26.8	23.6	22.5	41
OKC Near Road (097)	18.9	20.7	27	22.2	21	43.8
Glenpool (174)	18.2	19.9	26.9	21.7	21.5	44.7
Healdton (297)	15.7	24	20.3	20	20.6	47.2
McAlester (415)	17.1	21.6	27.4	22	23.5	42.5
Ponca City (604)	19	20.7	36.3	25.3	25.2	34.5
Lawton (651)	17.2	18.5	20.5	18.7	18.4	52.5
Seiling (860)	17.1	17.2	19.2	17.8	16.9	55.1
OKC North (1037)	21.1	21.9	23.9	22.3	21.6	45.7
Tulsa Central (1127)	22.5	20.7	28.3	23.8	22.4	42.5

Timeline of Primary PM_{2.5} National Ambient Air Quality Standards (NAAQS)

Final Rule/Decision	Averaging Time	Level	Form
1997	24 hour	65 µg/m ³	98th percentile, averaged over 3 years
1997	Annual	15.0 µg/m ³	Annual arithmetic mean, averaged over 3 years
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2012	24 hour	35 µg/m ³	98th percentile, averaged over 3 years
2012	Annual	12.0 µg/m ³	Annual arithmetic mean, averaged over 3 years
2020	Primary and secondary standards retained, without revision.		

Site	2019	2020	2021	19-21 Avg	20-22 Avg	2022
	Mean	Mean	Mean	Mean	Mean	Critical Value to Exceed 12.0
Moore (049)	10	9.9	11.1	10.3	9.8	15.2
OKC Near Road (097)	9.1	9.6	11.2	10.0	10.0	15.4
Glenpool (174)	8.4	8.9	10.1	9.1	9.2	17.2
McAlester (415)	8.3	8.5	10.1	9.0	9.2	17.6
Ponca City (604)	7.9	9.4	11.7	9.7	10.0	15.1
Lawton (651)	8.2	7.4	8.6	8.1	7.9	20.2
Seiling (860)	7.9	7.3	7.9	7.7	7.5	21.0
OKC North (1037)	9.7	9.9	10.7	10.1	10.3	15.6
Tulsa Central (1127)	9.5	8.7	10.8	9.7	9.9	16.7

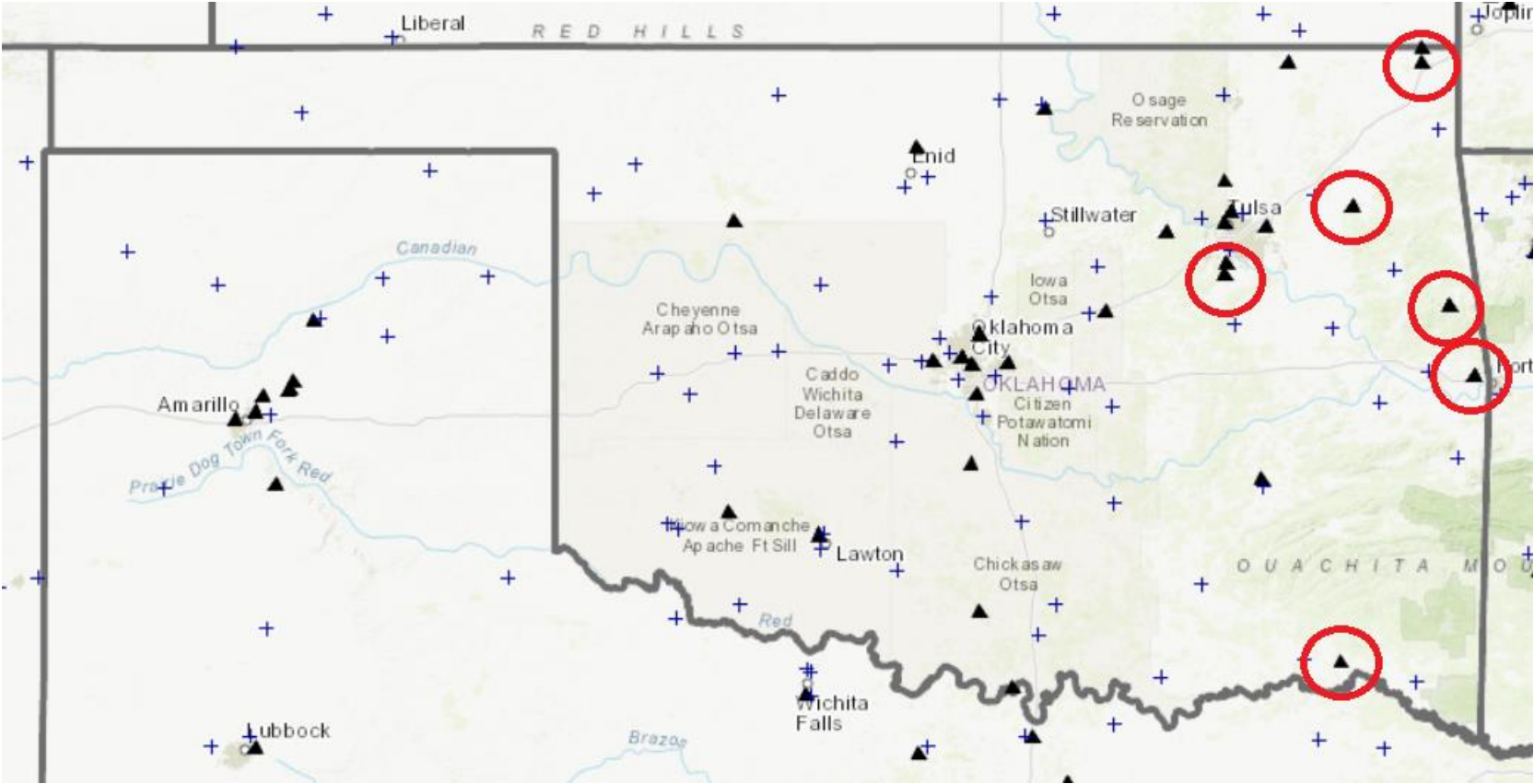
Site	2019	2020	2021	19-21 Avg	20-22 Avg	2022
	Mean	Mean	Mean	Mean	Mean	Critical Value to Exceed 10.0
Moore (049)	10	9.9	11.1	10.3	9.8	9.2
OKC Near Road (097)	9.1	9.6	11.2	10.0	10.0	9.4
Glenpool (174)	8.4	8.9	10.1	9.1	9.2	11.2
McAlester (415)	8.3	8.5	10.1	9.0	9.2	11.6
Ponca City (604)	7.9	9.4	11.7	9.7	10.0	9.1
Lawton (651)	8.2	7.4	8.6	8.1	7.9	14.2
Seiling (860)	7.9	7.3	7.9	7.7	7.5	15.0
OKC North (1037)	9.7	9.9	10.7	10.1	10.3	9.6
Tulsa Central (1127)	9.5	8.7	10.8	9.7	9.9	10.7

Site	2019	2020	2021	19-21 Avg	20-22 Avg	2022
	Mean	Mean	Mean	Mean	Mean	Critical Value to Exceed 10.0
Moore (049)	10	9.9	11.1	10.3	9.8	9.2
OKC Near Road (097)	9.1	9.6	11.2	10.0	10.0	9.4
Glenpool (174)	8.4	8.9	10.1	9.1	9.2	11.2
McAlester (415)	8.3	8.5	10.1	9.0	9.2	11.6
Ponca City (604)	7.9	9.4	11.7	9.7	10.0	9.1
Lawton (651)	8.2	7.4	8.6	8.1	7.9	14.2
Seiling (860)	7.9	7.3	7.9	7.7	7.5	15.0
OKC North (1037)	9.7	9.9	10.7	10.1	10.3	9.6
Tulsa Central (1127)	9.5	8.7	10.8	9.7	9.9	10.7

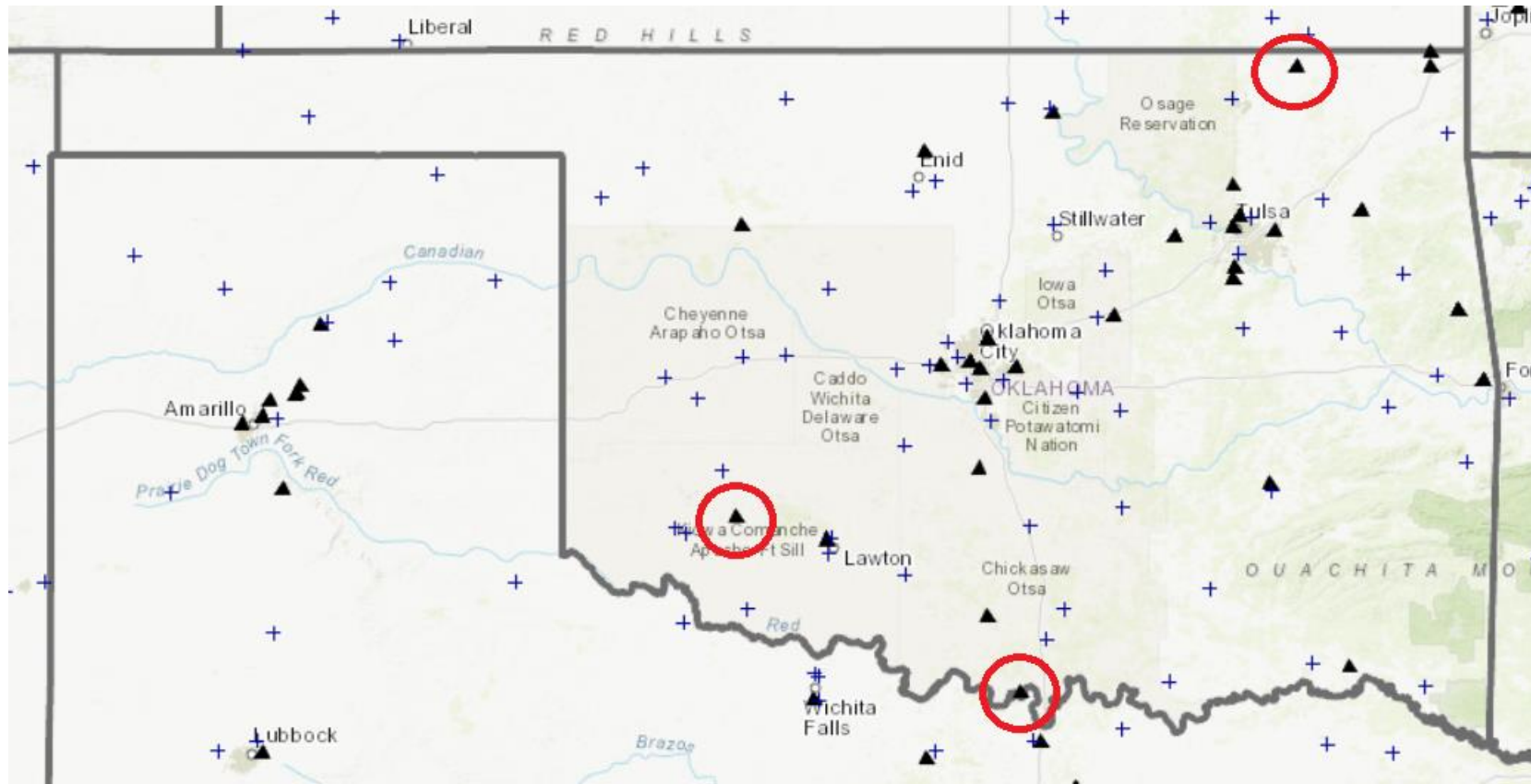
Possible Ozone NAAQS

<70 ppb?

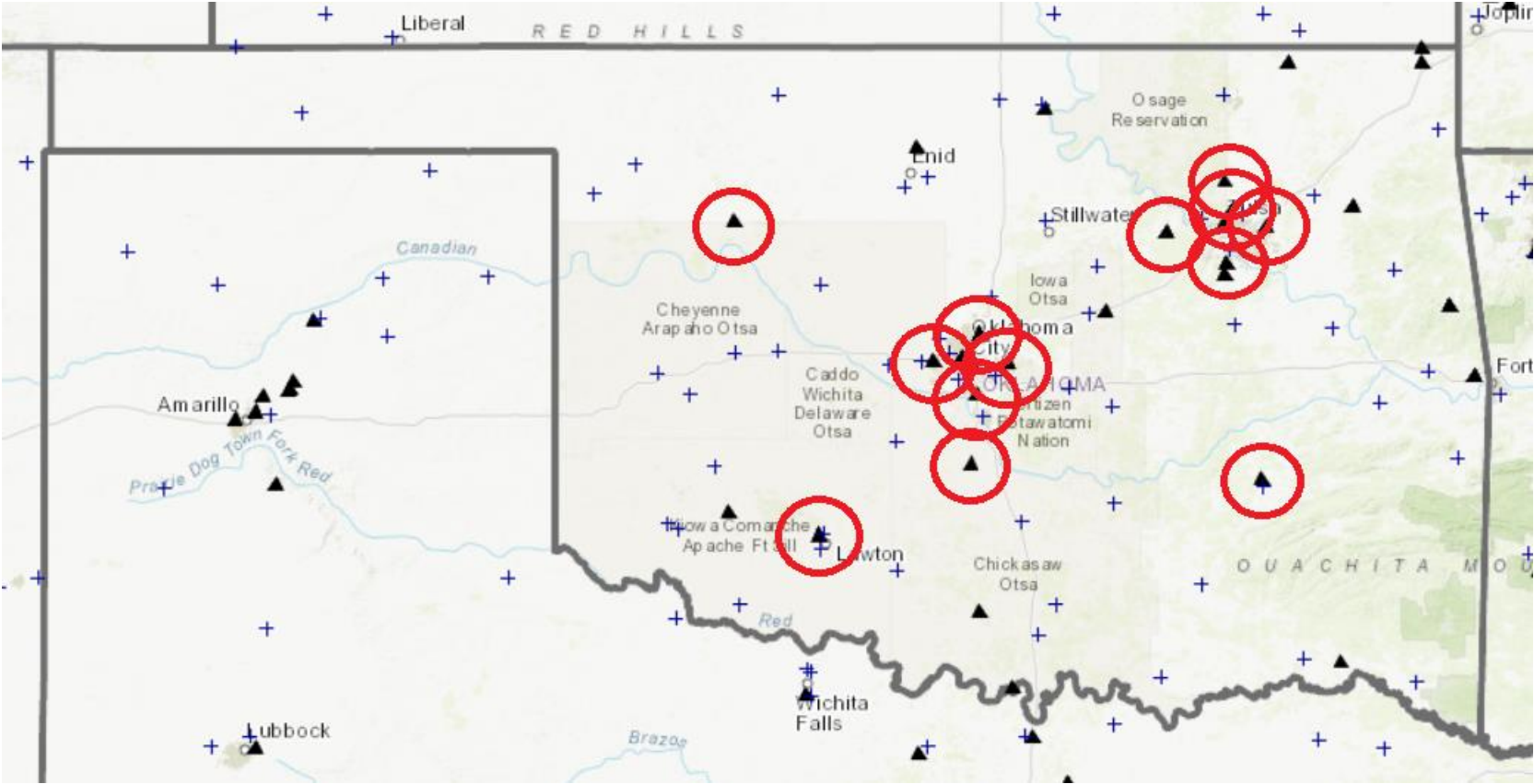
Tribal Ozone Monitors



DEQ Special Purpose Ozone Monitors



DEQ NAAQS Comparable Ozone Monitors



Timeline of Primary Ozone National Ambient Air Quality Standards (NAAQS)

Final Rule/Decision	Indicator	Averaging Time	Level	Form
1971	Total photochemical oxidants	1 hour	0.08 ppm	Not to be exceeded more than one hour per year
1979	O ₃	1 hour	0.12 ppm	Attainment is defined when the expected number of days per calendar year, with maximum hourly average concentration greater than 0.12 ppm, is equal to or less than 1
1993	EPA decided that revisions to the standards were not warranted at the time			
1997	O ₃	8 hours	0.08 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
2008	O ₃	8 hours	0.075 ppm	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
2015	O ₃	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour average concentration, averaged over 3 years
2020	Primary and secondary standards retained, without revision.			

Site	2019 4th high	2020 4th high	2021 4th high	19-21 Avg	20-22 Avg	Critical value needed to exceed .070 ppm	Critical value needed to exceed .068 ppm
Tulsa West (144)	0.066	0.062	0.063	0.063	0.062	0.088	0.082
Tulsa East (178)	0.067	0.059	0.068	0.064	0.063	0.086	0.080
Tulsa Central (1127)	0.066	0.058	0.064	0.062	0.061	0.091	0.085
Tulsa North (226)	0.064	0.062	0.066	0.064	0.063	0.085	0.079
Tulsa South (174)	0.064	0.061	0.063	0.062	0.061	0.089	0.083
OKC North (1037)	0.066	0.069	0.069	0.068	0.068	0.075	0.069
Moore (049)	0.064	0.063	0.067	0.064	0.064	0.083	0.077
Choctaw (096)	0.069	0.065	0.068	0.067	0.066	0.080	0.074
Yukon (101)	0.076	0.065	0.070	0.070	0.065	0.078	0.072
Lawton (651)	0.072	0.066	0.065	0.067	0.063	0.082	0.076
McAlester (415)	0.069	0.066	0.066	0.067	0.063	0.081	0.075
Seiling (860)	0.073	0.062	0.062	0.065	0.062	0.089	0.083
Kessler (1074)	new in 2021						

Questions?

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