



February 23, 2018

Alexis Strauss, Acting Regional Administrator
USEPA, Region 9
Mail Code ORA-1,
75 Hawthorne Street
San Francisco CA 94105-3901

RE: Clark County Response to 120-Day 2015 Ozone NAAQS Designations Letter; Docket ID EPA-HQ-OAR-2017-0548

Dear Ms. Strauss:

On behalf of Governor Sandoval, as his appointed designee, pursuant to Section 107(d) of the 1990 Clean Air Act, this letter transmits to you one hard copy of the response by Clark County Department of Air Quality (DAQ) to the U.S. Environmental Protection Agency's intended 2015 ozone National Ambient Air Quality Standards (NAAQS) area designations for the State of Nevada. This transmittal provides additional information for the EPA to consider¹ in making the final designation decisions for the 2015 Primary and Secondary 8-hour ozone standard. The response makes note of recently available 2015 – 2017 design values for Clark County and calls attention to portions of Clark County where attainment with the standard has been demonstrated. The Nevada Division of Environmental Protection (NDEP) concurs with the DAQ's principal assertions, including:

- Hydrographic areas 164A (northern part of the Ivanpah Valley), and 165 (Jean Lake Valley) should be designated attainment/unclassifiable because the representative monitoring station for these areas is no longer violating the 2015 ozone NAAQS, and because recent modeling of emissions reductions indicates that there will be significantly lower ozone precursor emissions in these areas for the foreseeable future.
- The EPA should reconsider its proposed non-attainment designation for hydrographic area 216 (Apex Valley). This area should be designated attainment/unclassifiable because the 2015 – 2017 design values for the Apex monitor are below the standard, and analysis of meteorological conditions suggests that sources in the area do not contribute to the ambient air quality in the Las Vegas Valley.

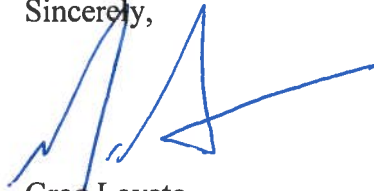
Therefore, NDEP recommends limiting the 2015 ozone NAAQS nonattainment designation to only hydrographic area 212 (Las Vegas Valley).

¹ Input requested from states in Federal Register / Vol. 83, No. 4 / Friday, January 5, 2018 Docket ID No. EPA-HQ-OAR-2017-0548

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The NDEP has reviewed DAQ's submittal and found it compelling and complete. If you should have any questions about this submittal or require additional clarification, you may contact Mike Sword, Planning Manager of the Clark County Department of Air Quality at (702) 455-1615.

Sincerely,



Greg Lovato
Administrator

Attachment

Clark County Department of Air Quality response letter

cc w/o Attachment

Laura Lawrence, Planning Office, USEPA Region IX (AIR-2)
Karina OConnor, Planning Office, USEPA Region IX (AIR-2)
Bradley Crowell, Director, Nevada Department of Conservation and Natural Resources
Jeffrey Kinder, Deputy Administrator, NDEP
Danilo Dragoni, Chief, Bureau of Air Quality Planning, NDEP
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February 20, 2018

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Greg Lovato, Administrator
Nevada Division of Environmental Protection
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Carson City, NV 89501

E-mail: glovato@ndep.nv.gov

Re: DAQ's Response to 120-Day 2015 Ozone NAAQS Designations Letter

Dear Mr. Lovato:

The Clark County Department of Air Quality (DAQ) is submitting this response to the 120-day letter, dated December 20, 2017, describing EPA's intended 2015 ozone NAAQS area designations for the State of Nevada.¹ EPA's technical analysis was based on 2014 – 2016 design values. DAQ's response relies upon the more recently available 2015 – 2017 design values for Clark County—which are based on air quality monitoring data that has been certified and quality-assured.

DAQ recommends limiting the 2015 ozone NAAQS nonattainment designation to only hydrographic area 212 (Las Vegas Valley).

Hydrographic areas 164A (northern part of the Ivanpah Valley) and 165 (Jean Lake Valley), which DAQ initially recommended as areas to be designated nonattainment based on 2013 – 2015 monitoring data, should be designated as attainment/unclassifiable. The portion of EPA's-intended nonattainment area that includes hydrographic area 216, south of a line common to Townships 16 South and 17 South, should also be designated as attainment/unclassifiable.

I. Apex and Jean Monitoring Stations No Longer Violating Standard

In a letter dated September 22, 2016, the State of Nevada provided EPA its recommended area designations for the 2015 ozone NAAQS. The recommendations were based on the most recently certified and quality-assured monitoring data (2013 – 2015), and EPA's suggested five-factor analysis. The recommendation for nonattainment area designation in Clark County was to include only hydrographic areas 212 (Las Vegas Valley), 164A (northern part of the Ivanpah Valley), and 165 (Jean Lake Valley).

¹ EPA, Ozone Designations – 2015 Standards – Nevada State Recommendations and EPA Response, <https://www.epa.gov/sites/production/files/2017-12/documents/nv-epa-resp-ozone.pdf>.

Since the initial recommendation was made, Clark County has certified and quality-assured air quality monitoring data for both 2016 and 2017. Table 1 provides the fourth-highest maximum daily 8-hour average ozone concentrations and the three-year averages (i.e., design values) for years 2013 – 2017.

Table 1: Clark County Monitoring Station Data (2013 - 2017)*

Monitoring Site	Fourth Highest (ppb)					Three-Year Average (ppb)		
	2013	2014	2015	2016	2017	2013 - 2015	2014 - 2016	2015 - 2017
Apex (32-003-0022)	73	76	72	68	69	73	72	69
Mesquite (32-003-0023)	67	65	65	58	62	65	62	61
Paul Meyer (32-003-0043)	75	77	73	71	70	75	73	71
Walter Johnson (32-003-0071)	74	74	68	73	75	72	71	72
Palo Verde (32-003-0073)	74	77	72	72	74	74	73	72
Joe Neal (32-003-0075)	76	79	71	77	76	75	75	74
Green Valley (32-003-0298)	-	-	70	68	70	-	-	69
Jerome Mack (32-003-0540)	69	73	69	69	65	70	70	67
Boulder City (32-003-0601)	71	73	68	62	67	70	67	65
Jean (32-003-1019)	75	74	71	66	66	73	70	67
JD Smith (32-003-2002)	72	75	73	73	72	73	73	72
Indian Springs (32-003-7772)	-	-	70	68	66	-	-	68

* Note that out-of-state transport and stratospheric ozone intrusion have sometimes had a significant influence on historic ozone concentration levels in Clark County. For example, recent studies have demonstrated that certain areas of the country, especially those areas located in the western states, have been significantly impacted by ozone emissions emanating from outside the United States. One modeling study found that 49% of springtime ozone readings above 70 ppb in the southwestern United States would not have occurred without Asian emissions. Lin, M., et al. (2012), *Transport of Asian ozone pollution into surface air over the western United States in spring*, J. Geophys. Res., 117. In another study utilizing lidar measurements from a high-elevation site in Clark County, Nevada, it was determined that an influx of ozone-rich lower stratospheric air and entrained Asian pollution persisted for more than 5 days and contributed to exceedances of the 2008 NAAQS in May 2013 in Clark County. Langford, A.O., et al. (2016), *Entrainment of stratospheric air and Asian pollution by the convective boundary layer in the southwestern U.S.*, J. Geophys. Res. Atmos., 122.

Once the EPA acquires sufficient information, the Clean Air Act (CAA) requires EPA to designate as nonattainment any area that violates the NAAQS.² The table indicates that while the 2013 – 2015 design values at the Apex (73 ppb) and Jean (73 ppb) monitors violated the 2015 ozone NAAQS, the 2015 – 2017 design values for the Apex (69 ppb) and Jean (67 ppb) monitors do not. Since the monitors are not violating the 2015 ozone NAAQS, EPA should not designate as nonattainment the areas represented by the Apex and Jean monitors based on the CAA provision requiring areas violating the NAAQS to be designated nonattainment.

II. Nearby Clark County Areas Do Not Contribute

In addition to requiring designation of areas that violate the NAAQS, the CAA also requires EPA to designate as nonattainment any area that contributes to ambient air quality in a nearby area that violates the NAAQS.³ Table 1 shows that the only air quality monitors within Clark County currently violating the 2015 ozone NAAQS are located within the Las Vegas Valley.

² CAA §107(d).

³ Id.

It could pedantically be argued that every hydrographic area within the county contributes to ambient air quality in the Las Vegas Valley, even though that contribution may be de minimis. However, EPA has long recognized that under the CAA a nearby area's contributions must be meaningful in order to be designated nonattainment.

For a contribution to be meaningful, two elements must be satisfied. First, there must be some threshold of emission sources present in a nearby area. Second, the nearby area must have the appropriate topographical and meteorological conditions in order to transport the emissions to the violating area.

It will be shown below that for hydrographic area 216 (Apex Valley), the emissions sources tended to advance the idea of contribution, whereas the meteorological conditions tended to reject that idea. The reverse can be said about hydrographic areas 164A and 165 (Jean Lake and Ivanpah Valleys). Here the emissions sources are relatively minor, but the topographical and meteorological conditions favor contribution.

A. Hydrographic Area 216 does not Contribute

In their analysis, EPA determined that large point sources are located in the Apex Valley and that there is only a weak geographic/topographic barrier to transport between the Apex Valley and the Las Vegas Valley.⁴ On the other hand, EPA determined that the predominant wind direction is from the southwest and that HYSPLIT back trajectories imply that locations in the southwest of the county may be more frequent contributors to exceedances than other sub-areas within Clark County, such as the Apex area and locations farther northeast.⁵

Further demonstration that the predominant regional wind direction in Spring, Summer, and Fall, is from the southwest is shown in a comprehensive climate summary of the Nevada National Security Site (previously known as the Nevada Test Site (NTS)) prepared by staff meteorologists. Reported summaries of winds aloft data were based on two locations of the upper-air radiosonde stations within NTS: Yucca Flat and Desert Rock. As shown in Tables 13 and 14 of the report, both locations showed that the morning (12Z) and afternoon (00Z) wind directions starting at 5,000 feet above mean sea level (i.e., approximately 2,000 feet above ground level) were from the SSW and SW directions.⁶

EPA constructed an extensive meteorological-based argument against including the Moapa River Indian Reservation within the nonattainment area. EPA determined that, “. . . the Moapa River Indian Reservation, and more generally hydrographic area 218, are not likely to contribute to ozone NAAQS violations at monitors in the Las Vegas Valley.”⁷

⁴ EPA TSD, p. 13, 25.

⁵ Id. at p. 17.

⁶ SORD Technical Memorandum SORD 2006-3, Climatology of the Nevada Test Site
http://www.sord.nv.doe.gov/documents/Climatology_of_The_Nevada_Test_Site.Soule.pdf

⁷ EPA TSD, p. 24.

The southwest portion of the reservation is located in the northeast portion of hydrographic area 216 where the regional scale predominantly southwest wind direction flow patterns are very similar to patterns in the remaining portion of hydrographic area 216. Thus, emissions in hydrographic area 216 are generally transported toward the northeast away from the Las Vegas Valley. Therefore, EPA's meteorological-based argument for excluding the Moapa River Indian Reservation as a nearby area that contributes to the nonattainment of the Las Vegas Valley also applies to the entirety of hydrographic area 216.⁸

It should also be noted that in 2013, EPA approved a ten-year maintenance plan for Clark County under the 1997 ozone NAAQS.⁹ Hydrographic area 216 was included within the maintenance plan and therefore the control requirements will be applicable to this area even if it is designated attainment/unclassifiable under the 2015 ozone NAAQS.

B. Hydrographic Areas 164A and 165 do not Contribute

Hydrographic area 164A consists of approximately 253 square miles of barren landscape located predominantly on federal land. There are approximately 1,035 residents in this area, which amounts to approximately 4 residents per square mile.¹⁰ Hydrographic area 165 is a similarly a barren landscape located on approximately 96 square miles of federal land. There is no residential population in this area.

Hydrographic areas 164A and 165 has been described as a "transport corridor," through which ozone and ozone precursor emissions are transported from outside the state into the Las Vegas Valley. Given its lack of residential population and point sources, hydrographic areas 164A and 165 would likely fall within the ambit of the Section 182(h) rural transport area provisions but for their questionable inclusion within the Las Vegas-Paradise-Henderson Metropolitan Statistical Area.¹¹

The point source emissions located in hydrographic areas 164A and 165 is relatively minor. Tables 2 and 3 summarize the 2016 ozone precursor emissions from these facilities.¹² The total from hydrographic area 164A was approximately 192 tons of NO_x and 63 tons of VOC. There were no point source emissions from hydrographic area 165.

⁸ See for example Figure 3 of the Trinity Consultants report dated May 7, 2004 (https://archive.epa.gov/ozonedesignations/web/pdf/moapa_atty.pdf) which is relied upon in the 2004 analysis performed on behalf of the Moapa Band of Paiute Indians, as referenced on page 24 of EPA's 2015 ozone NAAQS Technical Support Document. Figure 3 provides a Wind Rose of data collected at the Apex meteorological station from May 1, 2000 to October 1, 2000. The Wind Rose clearly shows that the predominant wind direction is from the southwest, indicating that emissions in the Apex area would be transported away from the Las Vegas Valley. ⁹ 78 FR 1149.

¹⁰ Population includes Goodsprings, Jean, and Primm.

¹¹ Section 182(h) of the CAA allows EPA to determine that a designated nonattainment area can be treated as a rural transport area if: (i) the area does not contain emission sources that make significant contribution to monitored ozone concentration in the area or other areas, and (ii) the area does not include, and is not adjacent to a Metropolitan Statistical Area.

¹² See also map of large point sources found in State of Nevada Recommendations, Figures 3-4 and 3-5.

Table 2: 2016 Ozone Precursor Emissions from Point Sources in Hydrographic Area 164A

Source	NO _x (tons)	VOC (tons)
Goodsprings Natural Gas Compressor Station	64.32	7.49
Goodsprings 5 MW Energy Recovery Station	0.01	0.36
Jean Aviation Center	0.00	1.12
Letica Corporation (Jean)	0.04	3.15
Gold Strike Truck and Auto Center (Jean)	0.00	2.77
Primm Valley Resort Hotel and Casino (includes Buffalo Bill and Whiskey Pete Casinos and GDF)	14.99	13.01
530 MW Natural Gas-Fueled Power Plant (Primm)	101.74	31.53
60 MW Photovoltaic Power Plant (Primm)	11.32	3.68
Totals:	192.42	63.11

Table 3: 2016 Ozone Precursor Emissions from Point Sources in Hydrographic Area 165

Source	NO _x (tons)	VOC (tons)
none	none	none

Due to the limited residential population, nonpoint source emissions are minimal. The most notable NO_x and VOC emissions sources in hydrographic areas 164A and 165 are on-road emissions from vehicles travelling along Interstate-15 from California to the Las Vegas Valley. However, on-road emissions in the State of Nevada are expected to substantially decrease in future years due to largely to the implementation of stringent federal regulations.

In 2017, EPA re-analyzed ozone interstate transport modeling for the 2015 ozone NAAQS using the Comprehensive Air Quality Model with Extensions (CAMx).¹³ As described in Table 4, on-road ozone precursor emissions in Nevada are expected to decrease by 70.6 percent for NO_x, and 64.9 percent for VOCs.

¹³ EPA re-analysis of ozone transport modeling using CAMx conducted as a result of August 29th, 2017 Federal-State Technical Work Collaboration Group conference call concerning EPA's re-analysis of the ozone transport modeling.

Table 4: Nevada Ozone Precursor Emissions for 2011 and 2023

Sector	NOx (tons)		VOC (tons)	
	2011	2023	2011	2023
Agricultural Fires	175	175	411	411
Biogenic (non-anthropogenic)	7,477	7,477	952,777	952,777
Nonpoint	4,269	3,808	23,596	22,572
Non-road	14,518	7,048	15,374	10,086
Nonpoint Oil & Gas	19	14	448	311
On-road	55,930	16,453	24,212	8,741
Point Oil & Gas	282	232	59	59
Point (EGU)	7,922	2,521	307	319
Wildfires (non-anthropogenic)	1,671	1,671	18,389	18,389
Point (non EGU)	9,182	9,788	2,145	2,205
Rail	6,414	4,387	324	162
Residential Wood Combustion	271	297	2,042	1,930
Anthropogenic Totals:	98,982	44,723	68,919	46,796
Anthropogenic Percent Reduction:	54.8%		32.1%	
On-Road Percent Reduction:	70.6%		64.9%	

Most of these reductions can be attributed to the promulgation of the federal *Tier 3 Motor Vehicle Emission and Fuel Standards* rule in 2014.¹⁴ The Tier 3 rule requires significant reductions in the sulfur content of gasoline (beginning in 2017).¹⁵ Since the vehicle emission standards will be phased-in over time (2017 thru 2025), there will be progressively fewer on-road ozone precursor emissions over time.

According to the U.S. Census Bureau, Clark County represents roughly 72 percent of Nevada's population and per capita ownership of gasoline-fueled vehicles in Clark County is about 0.58 as compared to 0.63 state-wide based on 2014 Nevada DMV data.¹⁶ Therefore the expected on-road ozone precursor emissions reductions within Clark County during the 2011 - 2023 timeframe, is 25,470 tons of NO_x and 3,500 tons of VOCs. A proportionate reduction based on VMT can be assumed along Interstate-15.

As shown in Table 1, the 2014 - 2016 design value (70 ppb) no longer violated the 2015 ozone NAAQS. The 2015 - 2017 design value was even lower (67 ppb). For the 2016 - 2018 design value to exceed the standard, the fourth-highest 2018 ozone value at the Jean monitor would have to be 81 ppb. However the emissions trend points in hydrographic areas 164A and 165 points in the other direction. It is also important to note that, just as with the Apex area, hydrographic areas 164A and 165 will continue to be subject to the 1997 ozone NAAQS maintenance plan.

¹⁴ 81 FR 23414 (April 28, 2014).

¹⁵ The lower gasoline sulfur standard allows emission control systems to be more effective for both existing and new model year vehicles. The Tier 3 rule also requires phased-in reduction of vehicle tailpipe and evaporative emissions for gasoline and diesel vehicles. The emissions standards are applicable to passenger cars, light-duty trucks, medium-duty passenger vehicles, and some heavy-duty vehicles.

¹⁶ U.S. Census Bureau estimates for July 1, 2017 are: Clark County (2,155,664) and Nevada (2,998,039).

NDEP

2/6/2018

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In summary, hydrographic areas 164A and 165 should be designated attainment/unclassifiable not only because the representative monitoring station for these areas is no longer violating the 2015 ozone NAAQS, but also because EPA's modeling of emissions reductions indicates that there will be significantly lower ozone precursor emissions in these areas for the foreseeable future.

If you have any questions about this submittal or require additional clarification, please contact Mike Sword, DAQ Planning Manager, at (702) 455-1615, or Robert Tekniepe DAQ Principal Management Analyst, at (702) 455-4063.

Sincerely,

A handwritten signature in blue ink that reads "Marci Henson". The signature is written in a cursive style.

Marci Henson, Director

MH:aml

cc:

Mike Sword, DAQ

Robert Tekniepe, DAQ