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December 16, 2013

Via Email

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Re: Review of Requested Inter-District Transfer of Emission Reduction Credits from Mojave Desert Air Quality Management District and San Joaquin Valley Air Pollution Control District, Respectively, to Antelope Valley Air Quality Management District for Use as Offsets for Palmdale Hybrid Power Project

Dear Ms. Smith,

Per your request, I have assessed the proposed transfer of emission reduction credits ("ERCs") from the Mojave Desert Air Quality Management District ("MDAQMD") and San Joaquin Valley Air Pollution Control District ("SJVAPCD") to the Antelope Valley Air Quality Management District ("AVAQMD") requested by Palmdale Energy LLC ("the Applicant" or "Palmdale Energy") on November 8, 2013 for use as offsets for the Palmdale Hybrid Power Project ("PHPP" or "Project")[1] with respect to compliance with California Health & Safety Code Section 40709.6 and with the California Environmental Quality Act ("CEQA").

My qualifications as an environmental expert include a doctorate in Environmental Science and Engineering ("D.Env.") from the University of California Los Angeles. I have provided expert comments on air quality in the permitting/licensing proceedings of numerous power plant projects including the adequacy of offsets under both the federal and state Clean Air Acts and their review under CEQA. My résumé is attached to this letter.

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[1] Letter from Mike Mischel, Palmdale Energy, to Eldon Heaston, AVAQMD, Re: Inter-District Emission Offset Transfer Request to Antelope Valley AQMD, November 8, 2013 (hereafter "Applicant's November 8, 2013 Request for ERC Transfer to AVAQMD").

For my assessment, I reviewed the licensing records for the PHPP under the jurisdiction of the California Energy Commission ("CEC")[2]; the AVAQMD's preliminary, revised preliminary and final determinations of compliance ("PDOC", "Revised PDOC" and "FDOC", respectively) for the facility[3] and associated correspondence between the CEC, the U.S. Environmental Protection Agency ("EPA") and the AVAQMD;[4] and historic records for the respective ERCs obtained from the MDAQMD[5] and SJVAPCD[6] via Public Records Act requests.

The Applicant proposes to offset the PHPP's ozone precursor emissions with banked ERCs, *i.e.*, banked credits for the reduction of emissions that occurred at other facilities sometime in the past, from adjacent air districts, namely the MDAQMD and the SJVAPCD. The Applicant's November 8, 2013 ERC Transfer Request to AVAQMD would have one believe that these proposed ERC transfers have already been subject to an in-depth review process by the CEC, in which the specific ERCs were explicitly evaluated and approved for their effectiveness in mitigating the Project's air pollutant

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[2] CEC, City of Palmdale Hybrid Power Plant Project, Docket No. 08-AFC-09; available at: http://www.energy.ca.gov/sitingcases/palmdale/.

[3] AVAQMD, Preliminary Determination of Compliance (Preliminary New Source Review Document), Palmdale Hybrid Power Project, Palmdale, California, February 12, 2009; Revised Preliminary Determination of Compliance (Preliminary New Source Review Document), Palmdale Hybrid Power Project, Palmdale, California, June 22, 2009; and Final Determination of Compliance (Final New Source Review Document), Palmdale Hybrid Power Project, Palmdale, California, May 13, 2010; available at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=08-AFC-09.

[4] Dale Edwards, CEC, Letter to Alan De Salvio, AVAQMD, Re: Comments on the Preliminary Determination of Compliance (PDOC), Palmdale Hybrid Power Project (08-AFC-9), March 16, 2009 (hereafter "CEC March 16, 2009 Letter to AVAQMD"); Gerardo Rios, EPA, Letter to Eldon Heaston, AVAQMD, Re: EPA Comments on the PDOC for Palmdale Hybrid Power Project, March 19, 2009 (hereafter "EPA March 19, 2009 Letter to AVAQMD"); Gerardo Rios, EPA, Letter to Eldon Heaston, AVAQMD, Re: EPA Comments on the Revised PDOC for Palmdale Hybrid Power Project, July 27, 2009 (hereafter "EPA July 27, 2009 Letter to AVAQMD"); Matthew Layton, CEC, Letter to Alan De Salvio, Re: Comments on Final Determination of Compliance (FDOC), Palmdale Hybrid Power Project (08-AFC-9), June 16, 2010 (hereafter "CEC June 16, 2010 Letter to AVAQMD"); Alan De Salvio, AVAQMD, Letter to Matthew Layton, RE: June 16, 2010 Letter Regarding Palmdale Power Project FDOC (08-AFC-9), June 29, 2010 (hereafter "AVAQMD June 29, 2010 Letter to CEC"); Gerardo Rios, EPA, Letter to Eldon Heaston, AVAQMD, re: EPA Comments on the Final Determination of Compliance (FDOC) for the Palmdale Hybrid Power Plant (PHPP), October 26, 2010 (hereafter "EPA October 26, 2010 Letter to EPA"); Alan De Salvio, AVAQMD, Letter to Gerardo Rios, EPA, Re: Palmdale Hybrid Power Project ERCs from SJVAPCD, December 15, 2010 (hereafter "AVAQMD December 15, 2010 Letter to EPA"); all available at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=08-AFC-09.

[5] Jennifer Rhinehart, MDAQMD, Email to Gloria Smith, re: PRR LOG# 13-12-04-13, December 4, 2013 (hereafter "MDAQMD Records Release").

[6] Carol Flores, SJVAPCD, Email to Gloria Smith, re: SJVAPCD Pulic [sic] Records Release # C-2013-12-10, December 6, 2013 (hereafter "SJVAPCD Records Release").

emissions under Health & Safety Code Section 40709.6.[7] In truth, while the CEC evaluated the validity of the ERC transfer *mechanism* from the SJVAPCD to the AVAQMD (but not from the MDAQMD),[8] the agency did not identify the specific ERCs the Applicant now proposes to use as offsets for the PHPP nor did it assess compliance of their transfer to the AVAQMD under Health & Safety Code Section 40709.6. In fact, the CEC explicitly pointed out that "*currently, no specific emission reductions credits have been identified*…"[9] and requires that the adequacy of any ERCs for the Project be demonstrated to the CEC's compliance project manager ("CPM").[10] Further, any conclusions the MDAQMD and SJVAPCD reached in their approvals of the proposed ERC transfers only evaluated compliance of the proposed ERC transfers with Health & Safety Code Section 40709.6 with regard to their own respective jurisdictions; they did not evaluate compliance of the proposed ERC transfers with Health & Safety Code Section 40709.6 for the AVAQMD's jurisdiction. (*See*, for example, SJVAPCD October 30, 2013 Letter to AVAQMD ("Since the emissions are used in another, downwind, district, no impact on air quality or public health is expected.") In other words, contrary to the Applicant's claim, my research indicates a complete lack of demonstration that

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[7] Applicant's November 8, 2013 Request for ERC Transfer to AVAQMD. ("Before offsets can be transferred between districts, Health & Safety Code § 40709.6(d) also requires consideration of "the impact of the offset on air quality, public health, and the regional economy." The California Energy Commission ("CEC") considered each and every one of these concerns before issuing its decision approving the Project on August 15. 2011. Specifically, the CEC made findings that the Project "will provide a degree of economic benefits and electricity reliability to the local area" and that construction and operation of the Project in compliance with the CEC's conditions of certification would ensure compliance with all applicable requirements including "applicable public health and safety standards, and air and water quality standards." Further, the CEC found that "construction and operation of the project, as mitigated, will not create any significant adverse environmental impacts." *Because the CEC has made these findings regarding the Project and its impact on air quality, public health, and the regional economy, and has supported these findings with substantial evidence, the transfer of offsets to the AVAQMD is protective of air quality, public health, and the regional economy, and likewise, the requirements of Health & Safety Code § 40709.6(d) are met.*" *Emphasis* added, internal citations omitted.)

[8] CEC, Commission Decision, Palmdale Hybrid Power Project, Docket No. 08-AFC-9, CEC-800-2011-005 CMF, August 2011 (hereafter "CEC Decision"); available at: http://docketpublic.energy.ca.gov/PublicDocuments/Regulatory/Non%20Active%20AFC%27s/08-AFC-9%20Palmdale%20Hybrid%20PP/2011/Aug/TN%2061876%2008-15-11%20Final%20Commission%20Decision.pdf, p. 6.2-11. ("There are meteorological circumstances where ozone and ozone precursor (NOx and VOC) emissions from the SJVAQMD [sic] result in significant contributions to ozone violations in the AVAQMD. Therefore, the use of ERCs from the SJVAQMD [sic] to mitigate the facility NOx and VOC emissions contribution to existing violations of ozone air quality standards complies with LORS, if approved by both air agencies." … "The use of ERCs from the SJVAPCD is a reasonable approach…")

[9] CEC Decision, p. 6.2-29.

[10] CEC Decision, AQ-SC18, p. 6.2-45. ("The project owner shall demonstrate to the satisfaction of the CPM that adequate emission reduction credits have been purchased prior to start of construction of the project.")

the proposed PHPP would not negatively affect air quality and public health. No agency has thus far evaluated this mitigation scheme under Health & Safety Code Section 40709.6 and the AVAMQD will be the first agency to do so.

As discussed in more detail below, if the AVAQMD were to perform this analysis, it would find that the ERC transfers, as proposed by the Applicant, do not comply with the requirements of Health & Safety Code Sections 40709.6(a) and 40709.6(c) and are not adequate under Section 40709.6(d) to protect air quality and public health. (*See* Section III.) Importantly, the emission reductions of volatile organic compound ("VOC") ERCs proposed for transfer from the SJVAPCD were generated 37 years, *i.e.*, almost four decades, ago. Emission reductions that occurred that long ago have no positive impact on today's air quality and will not "offset" the PHPP's impacts on air quality and public health. More to the point: the PHPP's emissions would result in a net increase in air pollution in the Mojave Desert Air Basin ("MDAB") without the benefit of contemporaneous emission reductions. (*See* Section II.) Further, the proposed transfer of nitrogen oxide ("NOx") ERCs does not satisfy the licensing conditions of certification for the PHPP established by the CEC for purposes of compliance with CEQA, and therefore do not demonstrate that air quality in the Mojave Desert Air Basin would not be adversely affected. (*See* Section III.D.2.) Finally, the requested ERC transfers are subject to consultation with EPA and the California Air Resources Board ("CARB") before they can be approved by the AVAQMD's Governing Board. This consultation has not finalized. (*See* Section III.D.3.) I therefore recommend that the AVAQMD governing board deny the requested ERC transfers.

I. Background for Palmdale Hybrid Power Project and Required Offsets

Palmdale Energy LLC ("the Applicant" or "Palmdale Energy") proposes to build the PHPP, a hybrid natural-gas fired combined-cycle and solar thermal generator with a nominal electric output of 570 megawatts ("MW"), located at 950 East Avenue M in Palmdale, California.[11] In August 2011, the CEC issued PHPP a license.[12]

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[11] CEC Decision, p. 2-1.

[12] CEC, Notice of Decision, Re: Filing of Notice of Decision in Compliance with Public Resources Code Section 21080.5 and Title 20, California Code of Regulations, Section 1768, Project Title: Palmdale Hybrid Power Plant, Docket No. 08-AFC-9, August 15, 2011; available at: http://docketpublic.energy.ca.gov/PublicDocuments/Regulatory/Non%20Active%20AFC%27s/08-AFC-9%20Palmdale%20Hybrid%20PP/2011/Aug/TN%2061899%2008-16-11%20Notice%20of%20Decision%20by%20California%20Energy%20Commission.pdf.

A. California Energy Commission Condition of Certification Requiring Offsets for PHPP Emissions

The CEC's license is conditional upon the surrendering of sufficient ERCs to offset the PHPP's emissions of the NOx and VOC, which are both ozone precursors.[13] (The CEC also requires offsets for emissions of particulate matter equal to or smaller than 10 micrometers ("PM10") and sulfur oxides ("SOx"), which are PM10 precursors.[14]) Specifically, the CEC Decision Condition of Certification AQ-SC18 requires the following for NOx and VOC ERCs:

> The project owner shall demonstrate to the satisfaction of the CPM that adequate emission reduction credits have been purchased prior to start of construction of the project. The project emissions of 115 and 40 tons per year of NOx and VOC, respectively, shall be offset at a ratio of 1.3 to one for ERC's [sic] within the MDAB or areas in the SJVAB [San Joaquin Valley Air Basin] that are within 15 miles of the AVAQMD western boundary (149.5 and 52 tons per year for NOx and VOC, respectively). If ERCs are obtained from locations greater than 15 miles from the western portion of the AVAQMD, an offset ratio of 1.5 to one shall be utilized for those offsets.[15]

Table 1 below summarizes the quantity of ERCs required under the CEC's license for the PHPP depending on the distance between the AVAQMD's western boundary and where the emission reductions occurred, as determined by the respective CEC-required distance offset ratios.

Table 1: Quantity of ERCs required for PHPP depending on distance between AVAQMD western boundary and origin of ERCs and respective offset ratio

	NOx (tons/year)	**VOC** (tons/year)
PHPP maximum annual potential to emit	115	40
AVAQMD offset threshold (Rule 1303(B(1))	25	25
Offsets required?	**YES**	**YES**
Required ERCs at offset ratio 1:3:1 (within 15 miles of AVAQMD western boundary)	149.5	52.0
Required ERCs at offset ratio 1:5:1 (greater than 15 miles of AVAQMD western boundary)	172.5	60.0

[13] CEC Decision, pp. 6.2-35 through 6.2-46.

[14] *Ibid.*

[15] CEC Decision, p. 6.2-45.

B. Proposed Inter-District ERC Transfers

The AVAQMD's ERC bank does not contain sufficient ozone precursor credits to offset the PHPP's emissions.[16] Therefore, the Applicant proposes to use ERCs generated in adjacent air districts, namely the MDAQMD and the SJVAPCD. The Applicant is currently in the process of obtaining approval by the AVAQMD, as the responsible receiving air district, for transferring NOx ERCs from MDAQMD and VOC ERCs from SJVAPCD.[17]

1. Proposed NOx ERC Transfer from MDAQMD

The Applicant has entered into an agreement with TXI – Riverside Cement Company ("Riverside Cement") for the purchase of up to 150 tons per year ("tons/year") of NOx ERCs.[18] Riverside Cement's NOx ERCs are registered with the MDAQMD with ERC certificate #78.[19] NOx emission reductions associated with this ERC certificate were generated by the shutdown of seven cement kilns and two boilers on May 16, 2008 at Riverside Cement's Victorville facility located at 19409 National Trails Highway in Oro Grande, California[20], 42.9 miles east of the PHPP site.[21]

The Applicant requested transfer of credits from the MDAQMD of 150 tons/year of NOx ERCs under ERC certificate #78 to the AVAQMD to satisfy offset requirements for the PHPP.[22] The MDAQMD and AVAQMD have jurisdiction over portions of the same air basin, the Mojave Desert Air Basin; the MDAQMD has jurisdiction over the eastern portion, specifically the northern portion of San Bernardino County and the eastern portion of Riverside County, and the AVAQMD has jurisdiction over the western portion of the Mojave Desert Air Basin, specifically the northeastern portion of Los Angeles County.[23] Thus, the requested transfer of NOx ERCs from MDAQMD to

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[16] *See* AVAQMD, Emission Reduction Credit Registry; available at: http://www.avaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=4046.

[17] Applicant's November 8, 2013 Request for ERC Transfer to AVAQMD.

[18] Applicant's November 8, 2013 Request for ERC Transfer to AVAQMD.

[19] Applicant's November 8, 2013 Request for ERC Transfer to AVAQMD.

[20] Alan De Salvio, MDAQMD, Shutdown of Seven Kilns and Two Boilers in Oro Grande, California, TXI - Riverside Cement Company Facility (County of San Bernardino), ERC Certificate MD0078, Revised ERC Engineering Evaluation, completed December 11, 2008, revised November 2009 (hereafter "MDAQMD 2009 NOx ERC Engineering Evaluation").

[21] Measured with Google Earth (19409 National Trails Highway in Oro Grande, California, to 950 E Avenue M in Palmdale, California).

[22] Applicant's November 8, 2013 Request for ERC Transfer to AVAQMD.

[23] *See* CARB, California Air District Map for District Rules; http://www.arb.ca.gov/drdb/dismap.htm; and CARB, California Local Air District Directory; http://www.arb.ca.gov/capcoa/roster.htm.

AVAQMD can be described as inter-district within the same air basin. The MDAQMD' Governing Board approved the requested inter-district NOx ERC transfer with October 28, 2013 Resolution, Agenda Item 9.[24] This inter-district NOx ERC transfer request will come before the AVAQMD's Governing Board for approval on December 17, 2013.[25]

2. Proposed VOC ERC Transfer from SJVAPCD

The Applicant has entered into an agreement with Big West of California, LLC ("Big West") for the purchase of VOC ERCs under ERC certificate S-4051-1, registered with the San Joaquin Valley Air Pollution Control District ("SJVAPCD").[26] VOC emission reductions associated with this ERC certificate were generated by the installation and operation of a so-called CO boiler to incinerate fluid coker exhaust[27] at the Big West (now Alon USA[28]) Bakersfield Refinery at 6451 Rosedale Highway in Bakersfield, California, in May 1977.[29] (The ERCs were initially issued on July 23, 1989 to Texaco Refining and Marketing, Inc. by the Kern County Air Pollution Control District ("KCAPCD")[30], whose jurisdiction over the Bakersfield area has since been subsumed into the SJVAPCD.) The facility is located 76.3 miles northwest of the PHPP site.[31]

The Applicant initially requested transfer from the SJVAPCD of 52 tons/year of VOC ERCs under ERC certificate S-4051-1 to the AVAQMD to satisfy VOC offset requirements for the PHPP.[32] The SJVAPCD has jurisdiction over the San Joaquin

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[24] MDAQMD, Regular Governing Board Meeting, Minutes, October 28, 2013.

[25] AVAQMD; Media Release, AVAQMD to Consider Power Plant Air Credit Transfer On December 17, December 9, 2013; http://www.avaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=4155.

[26] Applicant's November 8, 2013 Request for ERC Transfer to AVAQMD.

[27] The CO boiler combusts carbon monoxide ("CO") in the flue gas as fuel to provide steam for use in the refinery.

[28] *See* Wikipedia, Alon USA ("On June 2nd, 2010 Alon announced that it has completed the acquisition of the Bakersfield, California refinery from Big West of California, LLC, a subsidiary of Flying J Inc."); http://en.wikipedia.org/wiki/Alon_USA.

[29] SJVAPCD Records Release No. 636358: T. Goff, KCAPCD, Engineering Evaluation for Texaco Refining & Marketing, Inc., Bakersfield Refinery, HC & CO ERC Banking Certificate, March 4, 1987.

[30] SJVAPCD Records Release Nos. 636311 and 636313: KCAPCD, Emission Reduction Credit Certificate, Certificate No. 2007148/501, July 23, 1987.

[31] Measured with Google Earth (6451 Rosedale Highway in Bakersfield, California, to 950 E Avenue M in Palmdale, California).

[32] Applicant's November 8, 2013 Request for ERC Transfer to AVAQMD.

Valley Air Basin ("SJVAB").[33] Thus the requested transfer of VOC ERCs from SJVAPCD to AVAQMD can be characterized as inter-district and inter-basin. The SJVAPCD conditionally approved this inter-district and inter-basin ERC transfer on October 30, 2013, requiring submission and approval of an application to transfer the ERCs to be final.[34] On November 20, 2013, the Applicant submitted a revised request for transfer to the SJVAPCD for 60 tons/year of VOC ERCs under the same ERC certificate.[35] The SJVAPCD approved this inter-district and inter-basin transfer on December 5, 2013 subject to the same conditions.[36] This inter-district and inter-basin VOC ERC transfer request will come before the AVAQMD's Governing Board for approval on December 17, 2013.[37]

II. The 37-Year Old VOC ERCs Proposed for Transfer from the SJVAPCD Do Not Mitigate the Impact of PHPP Emissions on Ozone Pollution as a Practical Matter

The following sections provide an overview of the formation and health effects of ozone; a transport characterization for the Mojave Desert Air Basin and the AVAQMD attainment status with national and state ambient air quality standards ("NAAQS" and "CAAQS", respectively); and show that relying on ERCs generated by reducing pollution at other facilities elsewhere decades ago will do nothing to offset emissions from the PHPP. In my opinion, building a major new source of air pollution in the heavily polluted Mojave Desert Air Basin without contemporaneous offsets will obstruct future progress towards reaching attainment with state and national ambient air quality standards for ozone and will adversely affect the health of residents for the foreseeable future.

A. Formation and Health Effects of Ozone

Ground-level ozone is formed by the reaction of NOx and VOCs in the presence of heat and sunlight and forms readily in the atmosphere, usually during hot weather.

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[33] *See* CARB, California Air District Map for District Rules; http://www.arb.ca.gov/drdb/dismap.htm; and CARB, California Local Air District Directory; http://www.arb.ca.gov/capcoa/roster.htm.

[34] David Warner, SJVAPCD, Letter to Thomas Johns, Palmdale Energy, LLC, Re: Inter-District Emission Offset Transfer Request, October 30, 2013; SJVAPCD Records Release entitled "Inter-District Emission Offset Transfer Request."

[35] *See* David Warner, SJVAPCD, Letter to: Thomas Johns, Palmdale Energy, LLC, Re: Inter-District Emission Offset Transfer Request, December 5, 2013.

[36] *Ibid*.

[37] AVAQMD, Media Release, AVAQMD to Consider Power Plant Air Credit Transfer On December 17; http://www.avaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=4155.

NOx is emitted from motor vehicles, power plants and other sources of combustion. VOCs are emitted from a variety of sources, including motor vehicles, chemical plants, refineries, factories, and other industrial sources, and consumer and commercial products.

Even relatively low levels of ozone can cause health effects. People with lung disease, children, older adults, and people who are active outdoors may be particularly sensitive to ozone. However, children are at greatest risk from ozone exposure because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure. Children are also more likely than adults to have asthma.

Breathing ozone can trigger a variety of health problems in children and adults including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground level ozone also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue, aggravate lung diseases such as asthma, emphysema, and chronic bronchitis, lead to hospital admissions and emergency room visits and impair the body's immune system defenses.[38]

B. Transport Characterization for the Mojave Desert Air Basin and AVAQMD Attainment Status with Federal and State Ambient Air Quality Standards

The AVAQMD has jurisdiction over the western portion of the Mojave Desert Air Basin, specifically the desert (northeastern) portion of Los Angeles County.[39] The Mojave Desert Air Basin covers a large part of California's high desert. As shown in Figure 1 below, the Mojave Desert Air Basin is separated from the South Coast Air Basin, to its south, by the San Gabriel and San Bernardino Mountains. It is separated from the San Joaquin Valley, to the northwest, by the Tehachapi Mountains and the south end of the Sierra Nevada.

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[38] *See* EPA, Six Common Pollutants, Ground Level Ozone, Health Effects; http://www.epa.gov/glo/health.html.

[39] *See* CARB, California Air District Map for District Rules; http://www.arb.ca.gov/drdb/dismap.htm; and CARB, California Local Air District Directory; http://www.arb.ca.gov/capcoa/roster.htmc.

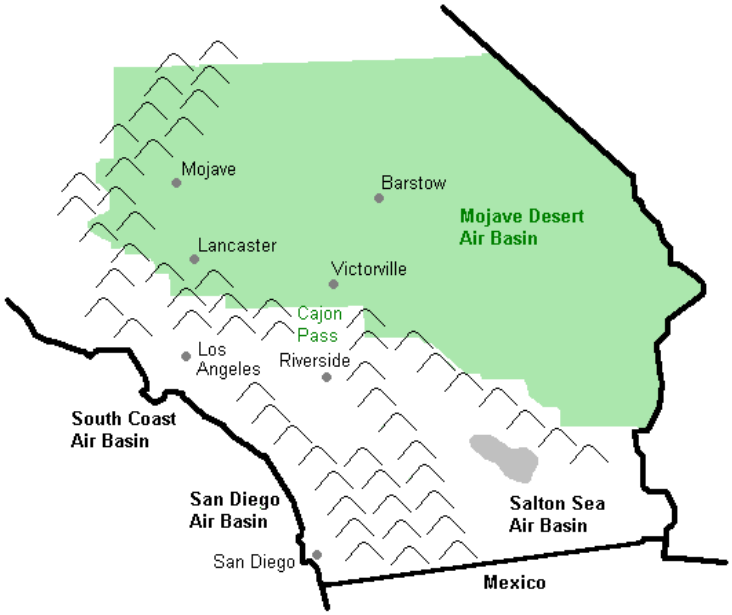

Figure 1: Mojave Desert Air Basin
(from: CARB, Ozone Transport: 2001 Review, Regional Transport Summaries, Mojave Desert Air Basin, (hereafter "CARB 2001 Ozone Transport Review"); available at: http://www.arb.ca.gov/aqd/transport/summary/transportsummary.doc.)

Although the eastern part of the basin is sparsely populated, the area just north of the San Gabriel and San Bernardino Mountains supports a large population. The Lancaster-Palmdale area, within the AVAQMD's jurisdiction, has a population of over 250,000, while the Victorville-Hesperia-Apple Valley area has over 180,000 residents. Apart from these urban areas the largest city is Barstow with approximately 23,000 residents.[40]

CARB describes the generation of pollutants within and transport from the South Coast Air Basin ("SCAB") and the San Joaquin Valley Air Basin into the Mojave Desert Air Basin as follows:

> The portion of the Mojave Desert immediately to the north of the San Gabriel and San Bernardino Mountains is heavily impacted by transport from the South Coast. Air monitoring stations at Hesperia and Phelan show the impact of surface transport through the Cajon Pass.
>
> In addition, transport aloft carries pollutants over the mountains to impact a broad area including Twentynine Palms and Lancaster-Palmdale. Despite the importance of transport from the South Coast, previous analyses have

[40] CARB 2001 Ozone Transport Review.

> demonstrated that local emissions play a significant role in causing ozone violations in this area.
>
> The air basin receives pollutants from the San Joaquin Valley as well. The area immediately downwind of Tehachapi Pass receives pollutants from the southern San Joaquin Valley. Violations in the town of Mojave in the eastern portion of Kern County are attributed entirely to this transport. The influence of pollutants from the San Joaquin Valley extends as far as Lancaster.[41]

Figure 2 illustrates pollutant transport from the South Coast Air Basin and San Joaquin Valley Air Basin into the Mojave Desert Air Basin.

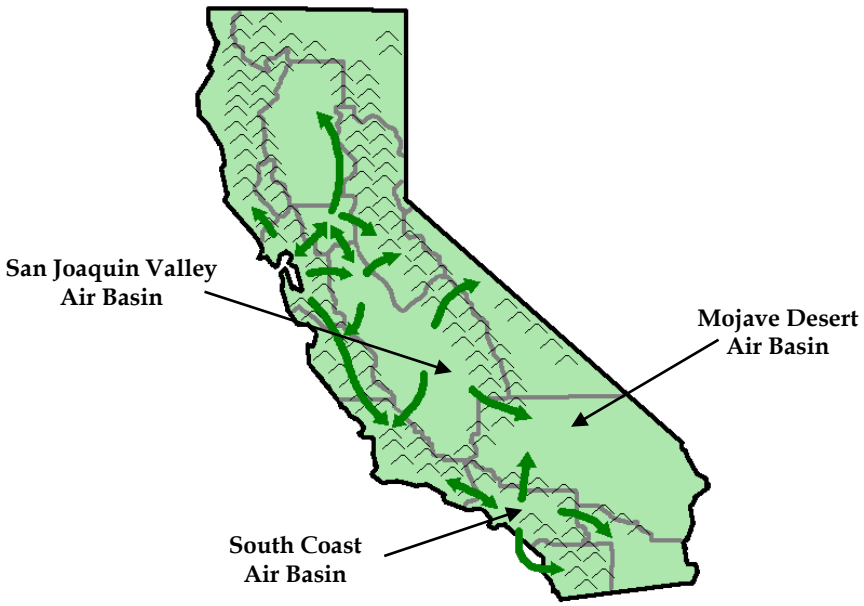

Figure 2: Pollutant transport into MDAB
(from: CARB 2001 Ozone Transport Review.)

As shown, the Mojave Desert Air Basin is impacted by emissions from the San Joaquin Valley Air Basin and the South Coast Air Basin, although local emissions also contribute to poor air quality. As CARB notes, "The air basin's population is substantial and growing.[42] Military bases, highways and railroad facilities, cement manufacturing and mineral processing contribute to the region's ozone precursor emissions.[43] As air

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[41] *Ibid.*

[42] *Ibid.*

[43] *Ibid.*

quality continues to improve in the South Coast, local emissions from the Mojave Desert Air Basin will become a more significant factor in its air quality."[44]

Currently, the Mojave Desert Air Basin is in nonattainment of both state and national ambient air quality standards for ozone.[45] AVAQMD adopted an attainment demonstration plan which projects attainment of the federal 8-hour ozone standard by 2021.[46] As discussed in more detail in Section III.D.6, the air quality in the district has not made adequate progress to achieve the progress goals of its ozone plan.[47] The AVAQMD's 2008 state implementation plan ("SIP") revision explains:

> The Antelope Valley Planning Area (Antelope Valley) is currently classified as a Moderate nonattainment area for the federal 8-hour ozone standard and has a nominal attainment deadline of June 15, 2010. However, air quality analyses, as well as photochemical modeling completed by the South Coast Air Quality Management District (South Coast District), indicate it is unlikely that Antelope Valley will attain by 2010, as required for Moderate areas.
>
> Ozone air quality in the Antelope Valley can be significantly impacted by transport from both the South Coast Air Basin (South Coast) and the San Joaquin Valley Air Basin (San Joaquin Valley). As a result, attainment projections for Antelope Valley must consider not only local emissions, but also the impact of transported emissions and pollutants.
>
> …
>
> The proposed South Coast, San Joaquin Valley, and statewide emissions reduction strategies will lower ozone concentrations in both the Antelope Valley and southwestern San Bernardino County over the next several years. However, the expected level of emissions reductions will fall short of those needed to reach attainment in either area by 2010, as currently required. Therefore, both areas are requesting a reclassification. Photochemical modeling results show that the entire Western Mojave Ozone Nonattainment Area could attain by the 2021 deadline for a Severe-17 nonattainment area. Therefore, both districts are

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[44] *Ibid*.

[45] CARB, Area Designations Maps / State and National, last reviewed April 22, 2013; http://www.arb.ca.gov/desig/adm/adm.htm.

[46] CARB, Antelope Valley Air Quality Management Plans, 2007 Western Mojave Desert Ozone Attainment Plan - Including Antelope Valley Attainment Plan (hereafter "AVAQMD 2007 Ozone Plan"); available at: www.arb.ca.gov/planning/sip/planarea/antvllysip.htm.

[47] CARB, Early Progress Plans Demonstrating Progress Toward Attaining the 8-hour National Air Quality Standard for Ozone and Setting Transportation Conformity Budgets for Ventura County, Antelope Valley - Western Mojave Desert, Coachella Valley, Eastern Kern County, Imperial County, revised: February 27, 2008; available at: www.arb.ca.gov/planning/sip/epp/revepptables.pdf.

requesting a reclassification to Severe-17, with an attainment date of June 15, 2021.[48]

Clearly, the Mojave Desert Air Basin, and in particular the AVAQMD, have a long way to go to achieve attainment with the national 8-hour ambient air quality standard for ozone. The same is true for the state 1-hour and 8-hour ambient air quality standards for ozone, as discussed in Section III.D.6.

C. Decades-old ERCs Do Not Mitigate Ozone Precursor Emissions from the PHPP

Allowing ERCs as mitigation to offset pre-application shutdowns or curtailments violates the plain meaning of the Clean Air Act. According to Section 173(a)(1)(A), "sufficient offsetting reductions" shall be obtained "such that total allowable emissions from existing sources in the region, from new or modified sources which are not major emitting facilities, and from the proposed source will be sufficiently less than total emissions from existing sources ... prior to the application for such permit to construct or modify so as to represent ... reasonable further progress."[49] And under Section 173(c)(1), offsets must come from "an equal or greater reduction, as applicable, in *actual* emissions of such air pollutant from the same or other sources in the area."[50]

As discussed above, the proposed VOC ERCs originate from the retrofit of a single stationary source, the Big West Bakersfield Refinery, in 1977, nearly four decades ago. Allowing the Applicant to mitigate the Project's air pollution emissions by relying on ERCs from emission reductions that occurred nearly four decades ago is inconsistent with the requirement in Clean Air Act Section 173(c)(1). Under that provision, new sources' emissions "shall be offset" by an equal or greater reduction in "actual emissions."[51] The plain meaning of the word "actual," is "existing or occurring *at the time*."[52] Here the proposed 37-year old VOC offsets are not "actual" emissions reductions that ensure "reasonable progress" toward attainment of the ambient air quality standards for ozone and they do not provide a positive net air quality benefit in

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[48] AVAQMD, Federal 8-Hour Ozone Attainment Plan, (Western Mojave Desert Non-attainment Area) adopted on May 20, 2008; available at: http://www.avaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=923.

[49] 42 U.S.C. § 7503(a)(1)(A).

[50] *Id.* § 7503(c)(1) (*emphasis* added).

[51] 42 U.S.C. § 7503(c)(1).

[52] Merriam Webster, http://www.merriam-webster.com/dictionary/actual; *see also Engine Mfrs. Ass'n v. S. Coast Air Quality Mgmt. Dist.*, 541 U.S. 246, 252, 124 S.Ct. 1756, 158 L.Ed.2d 529 (2004).

the area affected by the proposed source.[53] Further, as discussed in Section III.B, the validity of these ERCs at the time they were banked was called into question by the EPA who stated that "any source which attempts to use these emission reductions as an offset may be subject to federal enforcement action."[54]

In sum, the use of these old offsets raises serious concerns for future compliance and progress towards attainment of the state and national ambient air quality standards, as discussed in more detail in Section III.D.6. By any objective, common sense measure, use of these decades-old ERCs would result in an increase in unhealthful ozone pollution in the Mojave Desert Air Basin, thereby jeopardizing public health.

III. The Proposed ERC Transfers Do Not Comply with Health & Safety Code Section 40709.6

The Applicant's November 8, 2013 ERC Transfer Request to AVAQMD attempted to demonstrate compliance of the proposed ERC transfers with Health & Safety Code Section 40709.6. As discussed in the following comments, the Applicant's discussion was wholly inadequate. My research indicates that the proposed ERC transfers are not consistent with Health & Safety Code Sections 40709.6(a), 40709.6(c) and 40709.6(d).

A. Overview of Health & Safety Code Section 40709.6

Health & Safety Code Section 40709.6 reads as follows:

> (a) Increases in emissions of air pollutants at a stationary source located in a district may be offset by emission reductions credited to a stationary source located in another district if both stationary sources are located in the same air basin or, if not located in the same air basin, if both of the following requirements are met:
>
> > (1) The stationary source to which the emission reductions are credited is located in an upwind district that is classified as being in a worse nonattainment status than the downwind district pursuant to Chapter 10 (commencing with Section 40910).
> >
> > (2) The stationary source at which there are emission increases to be offset is located in a downwind district that is overwhelmingly impacted by

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[53] EPA, New Source Review Workshop Manual, ("NSR Manual"), p. G.6; http://www.epa.gov/NSR/ttnnsr01/gen/wkshpman.pdf.

[54] *Ibid*.

> emissions transported from the upwind district, as determined by the state board pursuant to Section 39610.
>
> (b) The district, in which the stationary source to which emission reductions are credited is located, shall determine the type and quantity of the emission reductions to be credited.
>
> (c) The district, in which the stationary source at which there are emission increases to be offset is located, shall do both of the following:
>
> > (1) Determine the impact of those emission reductions in mitigation of the emission increases in the same manner and to the same extent as the district would do so for fully credited emission reductions from sources located within its boundaries.
> >
> > (2) Adopt a rule or regulation to discount the emission reductions credited to the stationary source in the other district. The discount shall not be less than the emission reduction for offsets from comparable sources located within the district boundaries.
>
> (d) Any offset credited pursuant to subdivision (a) shall be approved by a resolution adopted by the governing board of the upwind district and the governing board of the downwind district, after taking into consideration the impact of the offset on air quality, public health, and the regional economy. Each district governing board may delegate to its air pollution control officer the board's authority to approve offsets credited pursuant to subdivision (a).

B. Proposed VOC ERC Transfer from SJVAPCD to AVAQMD Does Not Comply with Health & Safety Code Section 40709.6(a)(1)

Health & Safety Code Section 40709.6(a)(1) requires that the upwind district from which the ERCs are being transferred "is classified as being in a worse nonattainment status than the downwind district pursuant to Chapter 10 (commencing with Section 40910)." The Applicant's November 8, 2013 ERC Transfer Request to AVAQMD addresses compliance with Health & Safety Code Section 40709.6(a)(2) (downwind district is overwhelmingly impacted by emissions transported from the upwind district) but fails entirely to address the relative nonattainment status of the two air districts involved in the proposed VOC ERC transfer, *i.e.*, the SJVAPCD and the AVAQMD, pursuant to Health & Safety Code Section 40709.6(a)(1).

Health & Safety Code Section 40910 clarifies that it "is the intent of the Legislature in enacting this chapter that districts shall endeavor to achieve and maintain state ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide by the earliest practicable date." (The state's 8-hour ambient air quality standard for ozone (0.070 parts per million) is more stringent than the national 8-hour

ambient air quality standard for ozone (0.075 parts per million). In addition, California promulgated a 1-hour ambient air quality standard for ozone (0.09 parts per million).[55])

As discussed before, the SJVAPCD has jurisdiction over the San Joaquin Valley Air Basin and the AVAQMD has jurisdiction over the western portion of the Mojave Desert Air Basin. The CARB designated both the San Joaquin Valley Air Basin and the Mojave Desert Air Basin as "nonattainment" with the state ambient air quality standard for ozone.[56] Further, as shown in Figure 3 below, CARB classified all counties under the SJVAPCD's jurisdiction as "severe" nonattainment with the 1-hour state ambient air quality standard for ozone per Health & Safety Code Section 40921.5(a) for ozone concentrations between 0.16 and 0.20 parts per million. CARB classified the AVAQMD as "extreme" nonattainment for the 1-hour ozone state ambient air quality standard for ozone per Health & Safety Code Section 40921.5(a) for ozone concentrations in excess of 0.20 parts per million.[57]

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[55] CARB, Ambient Air Quality Standards, June 4, 2013, 2013; http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

[56] CARB, 2012 State Area Designations, Ozone, 2012 Area Designations for State Ambient Air Quality Standards Ozone; http://www.arb.ca.gov/desig/adm/2012/state_o3.pdf.

[57] CARB, 2012 State Area Designations, Ozone, 1-hour Area Classification Map, approved December 28, 2012, effective April 1, 2013; http://www.arb.ca.gov/desig/adm/s_classif.pdf.

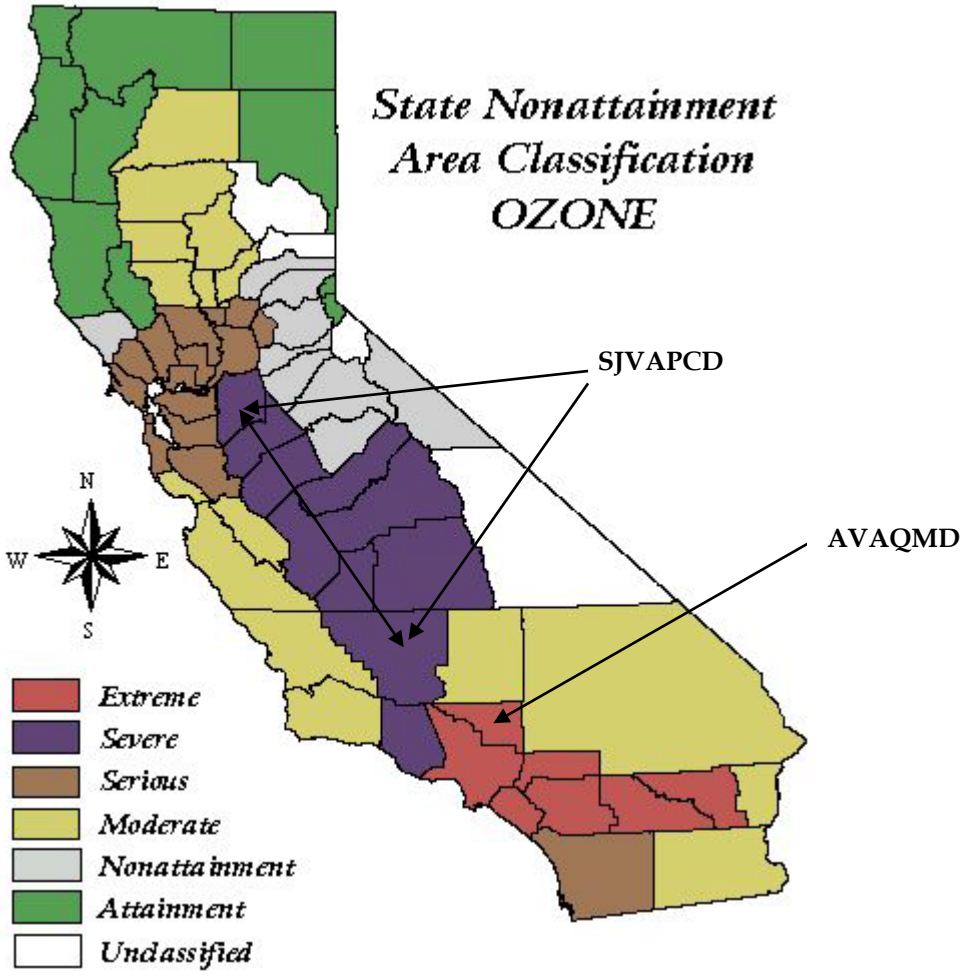

Figure 3: CARB nonattainment area classification
for 1-hour state ambient air quality standard for ozone
(from: CARB, 2012 State Area Designations, 1-hour Area Classification Map,
approved December 28, 2012, effective April 1, 2013; http://www.arb.ca.gov/desig/adm/s_classif.pdf)

Thus, the upwind district, *i.e.*, the SJVAPCD, is classified by CARB as having a comparatively better nonattainment status (severe) than the downwind district, *i.e.*, the AVAQMD (extreme). Therefore, based on my review of all the evidence the proposed inter-district/inter-basin transfer of VOC ERCs from the SJVAPCD to the AVAQMD does not comply with Health & Safety Code Section 40709.6(a)(1), which requires that the upwind district be classified as having a worse nonattainment status than the downwind district.

C. Proposed ERC Transfers Do Not Comply with Health & Safety Code Section 40709.6(c)(1) Because They Are Not Surplus

Health & Safety Code Section 40709.6(c)(1) requires that the receiving district determine "the impact of those emission reductions in mitigation of the emission

increases in the same manner and to the same extent as the district would do so for fully credited emission reductions from sources located within its boundaries."
My research indicates that if the AVAQMD were to perform this determination, it would find that the proposed ERC transfers do not comply with Health & Safety Code Section 40709.6(c)(1) because they do not comply with the requirements set forth in the AVAQMD's rules in that the impact of the specific ERCs as proposed by the Applicant as mitigation for the PHPP's air pollutant emission increases are not consistent with and not determined "in the same manner and to the same extent as the district would do so for fully credited emission reductions from sources located within its boundaries."

The 1990 Amendments to the federal Clean Air Act codified EPA's longstanding policy that ERCs used as offsets must be surplus.[58] Consequently, emission reductions "must be discounted to reflect reasonably available control technology (RACT),[59] new source performance standards, or any other requirement applicable to or reasonably foreseeable at the source of the emission reductions at the time of the use of the emission reductions as offsets."[60] In other words, surplus emission reductions must be included in the current emissions inventory and cannot be required by any local, state or federal law, regulation, and emission limitation or compliance plan. The AVAQMD incorporates EPA's guidance in Rule 1309, which regulates the creation, banking and use of all ERCs within the district, requiring in Section (D)(1) that "ERCs shall be real, enforceable, permanent, quantifiable and surplus." AVAQMD Rule 1301(WWW) accordingly defines "surplus" as reductions in emissions "which are in excess of the reductions which are otherwise required by Federal, State or District law, rule, order, permit or regulation." Rule 1305(C)(4) requires adjustment of "any Offsets proposed to be used to reflect any emissions reductions in excess of RACT in effect at the time such Offsets are used if such reductions have not already been reflected in the calculations required pursuant to District Rules [sic] 1304(C)(2)."

Here, the Applicant requests ERC transfer from the SJVAPCD and MDAQMD to the AVAQMD but failed to provide a determination that the respective ERCs are surplus. The EPA in its comments on the Revised PDOC noted that the AVAQMD

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[58] Clean Air Act §173(c)(2) ("Emission reductions otherwise required by this Act shall not be creditable as emissions reductions for purposes of any such offset requirement. Incidental emission reductions which are not otherwise required by this Act shall be creditable as emission reductions...").

[59] Reasonably Available Control Technology is a pollution control standard created by the EPA and is used to determine what air pollution control technology will be used to control a specific pollutant to a specified limit. RACT applies to existing sources in areas that are not meeting national ambient air quality standards on controlled air pollutants and is required on all sources that meet these criteria.

[60] Linda M. Murphy, Director, Air, Pesticides and Toxic Management Division, EPA Region 1, Letter to Dennis Keschl, Director, Bureau of Air Quality Control, Maine Department of Environmental Protection, March 1, 1994.

"must demonstrate whether the SJV-generated ERCs have been surplus-adjusted at the time of use. This required an analysis on how the ERCs were created and what rules they were subject to at the time of ERC creation, and what further adjustment may be required due to new requirements that would apply to the source of ERCs."[61]

In response, AVAQMD staff indicated that it did not "believe that further adjustment of subject ERCs is necessary" referring to the SJVAPCD's tracking system and required annual demonstration that its New Source Review ("NSR") program, including provisions related to emission offsets is, in the aggregate, equivalent to federal non-attainment NSR requirements.[62] AVAQMD staff concluded that since "SJVAPCD offsets are tracked, and if necessary adjusted, on a programmatic basis, there is no need to impose an additional RACT adjustment on any specific ERCs, including those that have been identified for use by the PHPP."[63] To arrive at this conclusion, AVAQMD staff argued that SJVAPCD "Rule 2201 has a self-implementing offset shortfall remedy procedure which entails following the federal offsetting requirements directly until the shortfall is eliminated." However, by transferring the subject ERCs to the AVAQMD, the SJVAPCD relinquishes control over them. Consequently, the SJVAPCD no longer has to account for the subject ERCs in its attainment demonstrations or future ozone plans. This increases the threshold at which the SJVAPCD would have to identify a shortfall under Rule 2201, thereby potentially increasing ozone precursor emissions within the San Joaquin Valley Air Basin, which, in turn, would increase pollutant transport into the Mojave Desert Air Basin. Therefore, the SJVAPCD's programmatic adjustments to ERCs under its control and the shortfall provisions of SJVAPCD Rule 2201 do not ensure that there would be no increase in ozone pollution in the Mojave Desert Air Basin. Thus, there is no adequate demonstration that the subject VOC ERCs are surplus.

Further, the AVAQMD must account for the transferred ERCs in a new ozone plan per Clean Air Act Section 173(a)(1)(A to ensure consistency with the area's plan for attainment and reasonable further progress before the subject ERCs can be used. At that time, the AVAQMD must require adjustment of the subject ERCs for purposes of demonstrating compliance with its ozone plan (rather than the SJVAPCD's ozone plan) per Rule 1305(C)(4).

As discussed in more detail in Section III.D.6, the AVAQMD has not made adequate progress as required under its 2007 ozone plan and has requested reclassification from "moderate" to "severe-17." (*See* Section II.B.)

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[61] EPA July 27, 2009 Letter to the AVAQMD.

[62] AVAQMD December 15, 2012 Letter to EPA.

[63] *Ibid.*

In sum, the subject VOC ERCs cannot lawfully be utilized because under no objective, common sense test can it be shown that air quality for the citizens of the Mojave Air Basin will be improved or protected by emission reductions that occurred at a refinery in Bakersfield nearly forty years ago. In my opinion, the proposed transfer of VOC ERCs from the SJVAPCD to the AVAQMD raises serious concerns for future compliance and progress towards attainment with the state and national ambient air quality standards.

Further, the subject VOC ERCs proposed for transfer from the SJVAPCD (Certificate No. 2007148/501) have a long and controversial history calling into question whether they can be considered "real, surplus, permanent, quantifiable, and enforceable" as required by law. The VOC emission reductions associated with these ERCs were generated by the installation and operation of a CO boiler on the fluid coker at the Tosco Corporation ("Tosco") refinery in Bakersfield to incinerate previously uncontrolled emissions in May 1977.[64] The company did not apply for ERCs to the then responsible air district, the KCAPCD, until April 24, 1984[65], well beyond the statutory filing requirements of KCAPCD Rule 210.3(C)(4)(b).[66] (The KCAPCD's jurisdiction over this facility was later subsumed into SJVAPCD.) Tosco's one-page application was rejected by KCAPCD the next day because it did not contain any documentation of emission reductions.[67] Tosco's follow-up application was not submitted until October 25, 1985.[68] In addition to finding this follow-up application incomplete and untimely, the KCAPCD raised numerous questions over the company's emission estimates because the data for the claimed emission reductions could not be reasonably verified and where therefore not considered real, surplus, permanent, quantifiable, and enforceable.[69] (The company was subsequently sold to Texaco Refining and Marketing, Inc. ("Texaco").[70]) After protracted wrangling between the KCAPCD and the company, the KCAPCD finally issued the ERC certificate for the company's claimed VOC

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[64] SJVAPCD Records Release No. 636358: T. Goff, KCAPCD, Texaco Refining and Marketing, Inc., Bakersfield Refinery (Acquired from Tosco, Corp.), March 4, 1987 (herafter "SJVAPCD Records Release No. 636358").

[65] SJVAPCD Records Release No. 636342: Tosco Corporation, Application for Banking Certificate for Emissions Reduction Credit, NMHC, submitted April 24, 1984.

[66] SJVAPCD Records Release No. 636324: David Howecamp, EPA, Letter to Leon Hebertson, KCAPCD, July 17, 1987 (hereafter "EPA July 17, 1987 Letter to KCAPD").

[67] SJVAPCD Records Release No. 636323: CARB, Letter to Citron Toy, KCAPCD, July 17, 1987.

[68] *Ibid*.

[69] SJVAPCD Records Release No. 636346: Leon Hebertson, AVAQMD, Letter to A.C. Ryder, Tosco Corporation, May 9, 1986.

[70] SJVAPCD Records Release No. 636358.

emission reductions on July 23, 1989, more than a decade after the emission reductions occurred.[71] The KCAPCD issued these ERCs against the explicit advice of the EPA (and CARB). Specifically, EPA called into question whether the ERCs were in fact surplus:

> The reductions from the installation of the CO boiler are quite old. The burden is on the District to verify in its analysis that these reductions have not been assumed elsewhere (in the emissions inventory, the latest AQMP [air quality management plan], the attainment demonstration) and therefore are indeed surplus. In all likelihood, these reductions are <u>not surplus</u> since they occurred so long ago and probably are already reflected in the District's records and plans. The District must verify that these reductions are not credited elsewhere.[72]

My review of the records for these ERCs indicates that no such demonstration was made.

With respect to the date of the emission reductions, EPA further clarified that it will not recognize the subject ERCs as valid offsets under the federal Clean Air Act:

> The reductions occurred prior to August 7, 1977, and are therefore too old to be granted credit. EPA has previously advised the District that banking credit may not be awarded for any reductions which occurred prior to the Clean Air Act Amendments of August 7, 1987. The fact that Kern County's banking rule allows credit prior to that date was cited as a deficiency in the Kern banking rule. *EPA will not recognize these reductions as valid offsets for any source wishing to purchase these ERCs for offsetting purposes.*
>
> In addition, these reductions, occurred prior to the December 28, 1976, baseline adjustment date that is required in the District's NSR rule since the ATC [Authority to Construct] was issued prior to that date.[73]

EPA went on to discuss the untimely application submittal:

> The complete application for banking credit was submitted well beyond the required time limits. It is not reasonable to accept the company's rationale for the delay.[74]

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[71] SJVAPCD Records Release Nos. 636311 and 636312: Kern County Air Pollution Control District, Emission Reduction Credit Certificate No. 2007148/501, Texaco Refining and Marketing, Inc., 6500 Refinery Ave. Bakersfield, CA, Actual Historical ERC: Hydrocarbons: 12,067.20 lbm/day, July 23, 1989.

[72] EPA July 17, 1987 Letter to KCAPD, <u>emphasis</u> in original.

[73] *Ibid*, *emphasis* added.

[74] *Ibid.*

EPA also identified the fact that there was no "RACT analysis for determining which reductions are eligible for emission reduction credits beyond RACT."[75]

Significantly, EPA concluded that "If the District issues the banking certificate to Texaco, any source which attempts to use these emission reductions as an offset may be subject to federal enforcement action."[76]

Clearly, EPA was adamantly opposed to the issuance of the subject VOC ERCs. Based on my review of the record, the KCAPCD chose to ignore EPA's guidance without adequate explanation. Because the transfer of the subject ERCs requires consultation with EPA, the validity of these offsets must survive EPA's scrutiny and, based on the record, will likely deemed deficient. Finally, any agency that approves the use of these offsets may expose itself to potential legal liability through an EPA enforcement action.

D. Proposed ERC Transfers Do Not Comply with Health & Safety Code Section 40709.6(d)

Health & Safety Code Section 40709.6(d) requires that any "offset credited pursuant to subdivision (a) shall be approved by a resolution adopted by the governing board of the upwind district and the governing board of the downwind district, after taking into consideration the impact of the offset on air quality, public health, and the regional economy." The Applicant's November 8, 2013 ERC Transfer Request to AVAQMD attempts to demonstrate that the CEC's Decision on the PHPP includes an adequate analysis of compliance of the requested ERC transfers with Health & Safety Code Section 40709.6(d) as follows:

> Before offsets can be transferred between districts, Health & Safety Code § 40709.6(d) also requires consideration of "the impact of the offset on air quality, public health, and the regional economy." The California Energy Commission ("CEC") considered each and every one of these concerns before issuing its decision approving the Project on August 15. 2011. Specifically, the CEC made findings that the Project "will provide a degree of economic benefits and electricity reliability to the local area" and that construction and operation of the Project in compliance with the CEC's conditions of certification would ensure compliance with all applicable requirements including "applicable public health and safety standards, and air and water quality standards." Further, the CEC found that "[construction and operation of the project, as mitigated, will not create any significant adverse environmental impacts."

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[75] *Ibid*.

[76] *Ibid*.

> Because the CEC has made these findings regarding the Project and its impact on air quality, public health, and the regional economy, and has supported these findings with substantial evidence, the transfer of offsets to the AVAQMD is protective of air quality, public health, and the regional economy, and likewise, the requirements of Health & Safety Code § 40709.6(d) are met.[77]

The Applicant's discussion is entirely inadequate and, contrary to its claim, did not demonstrate compliance of the proposed inter-district ERC transfer with Health & Safety Code Section 40709.6(d). In fact, the Applicant's November 8, 2013 ERC Transfer Request to AVAQMD grossly misinterpreted the CEC's findings regarding the use of inter-district ERC transfers. Specifically, the CEC Decision states in pertinent part:

> … Currently, *no specific emission reductions credits have been identified and not all appropriate air agencies have approved the proposed inter-district emission reduction transfers.* If the Applicant can obtain an additional quantity of NOx and VOC ERCs to meet a 1.5:1 ratio and if these could be located sufficiently near the project location, then the ozone precursor NSR requirements are met…[78]

Clearly, the CEC respected the independent authority of the respective air districts in this case. Indeed, the CEC's CEQA analysis did not attempt to address the factors for consideration under Health & Safety Code Section 40709.6(d). Although the Commission's CEQA analysis did include sections on local impacts, that analysis did not evaluate the particular air quality and local health impacts resulting from the use of the subject ERCs. For example, they did not address from the use of 37 year-old ERCs generated in the San Joaquin Valley Air Basin to offset and mitigate the PHPP's air pollutant emission increase in the Mojave Desert Air Basin (*see* Section II) or the impacts on the proposed NOx ERC transfer on the ozone transport within the Mojave Desert Air Basin (*see* Section III.D.5). As discussed throughout this report, approval of the proposed ERC transfers may negatively impact air quality and public health due to increased emissions of ozone precursors and resulting increased ozone concentrations in the Antelope Valley. Thus, the proposed ERC transfers do not comply with Health & Safety Code Section 40709.6(d).

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[77] Applicant's November 8, 2013 Request for ERC Transfer to AVAQMD, pp. 2-3, internal citations omitted.

[78] CEC Decision, pp. 6.2-29 and 6.2-29, *emphasis* added.

1. The Applicant's Transfer Request Does Not Contain Sufficient Information to Determine the Creditability of the Subject ERCs under the Federal Clean Air Act

EPA has clarified what information must be provided to determine the creditability of ERCs under the federal Clean Air Act:

> To determine creditability, for a State to allow the use of ERC's [sic] that were banked before 1990, the State [per footnote 1 in the same document, "State" means "any governmental agency that has authority to develop and implement an implementation plan to comply with the Clean Air Act (Act). This includes, but is not limited to, air pollution control districts in California."] must collect and maintain information on these ERC's, including, at a minimum, the name of the source that generated the ERC's, the source category that applies to this source, the quantity of ERC's generated by this source, the specific action that created the ERC's (*e.g.*, a shutdown of a unit, process change, add-on control), the date that the ERC's were generated and enough other information to determine the creditability of all ERC's. Without this level of information, there is no way to prevent the introduction of inaccurate data to the air quality management process, which may ultimately jeopardize the State's ability to meet the other requirements of the Act.[79]

In its comments on the Revised PDOC, EPA specifically noted that any ERC transfer must include "an analysis on how the ERCs were created and what rules they were subject to at the time of ERC creation, and what further adjustment may be required due to new requirements that would apply to the source of ERCs."[80] The Applicant's November 8, 2013 ERC Transfer Request to AVAQMD does not contain sufficient information to determine the creditability of the NOx and VOC ERCs because it does not specify

a) The source category that applies to the respective source;
b) The quantity of ERCs generated by the respective source;
c) The specific action that created the ERCs;
d) The date that the respective ERCs were generated; or
e) Enough other information to determine the creditability of the respective ERCs.

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[79] John S. Seitz, EPA, Director Office of Air Quality Planning and Standards (MD-10), Memorandum to David Howekamp, EPA, Director Region IX, Air and Toxics Division, Re: Response to Request for Guidance on Use of Pre-1990 ERC's and Adjusting for RACT at Time of Use, August 26, 1994; available at: http://www.epa.gov/region07/air/nsr/nsrmemos/pre-1990.pdf.

[80] EPA, July 27, 2009 Letter to the AVAQMD.

According to EPA, without this level of information, there is no way to prevent the introduction of inaccurate data to the air quality management process, which may ultimately jeopardize the district's ability to meet the other requirements of the federal Clean Air Act.

Here Applicant only recently identified the PHPP-specific ERCs it intends to rely on to mitigate the facility's air pollutant emissions. Therefore no agency to date has had the benefit of an analysis containing the above information with respect to its effects on the AVAQMD. In my opinion, the AVAQMD Governing Board may not approve the proposed transfer until the above considerations have been fully addressed.

2. *The Proposed NOx ERC Transfer Does Not Satisfy the CEC's Condition of Certification for the PHPP and Therefore Cannot Ensure that no Adverse Impacts on Air Quality Would Occur*

The Applicant proposed transfer of 150 tons/year of NOx ERCs from the MDAQMD to the AVAQMD, which incorporates a distance offset ratio of 1.3:1 for the PHPP's NOx emissions of 115 tons/year.[81] The associated NOx emissions reductions were generated at Riverside Cement's Victorville facility located at 19409 National Trails Highway in Oro Grande, California[82], 42.9 miles east of the PHPP site.[83] The Riverside Cement facility is located 21 miles from the eastern border of the AVAQMD and between 22 and 90 miles from the western border of the AVAQMD. Thus, if the Applicant intends to offset PHPP's NOx emissions only with the ERCs obtained from this facility, it must do so at a 1.5:1 distance offset ratio, requiring 173 tons/year of NOx ERCs[84] per CEC's Condition of Certification AQ-SC18, which clearly requires a distance offset ratio of 1.5:1 for ERCs that are obtained from locations greater than 15 miles from the western portion of the AVAQMD.[85] Lower distance offset ratios do not demonstrate a net air quality benefit for compliance with CEQA.[86] This requirement originates in the following discussion from the CEC Staff's Final Assessment for the PHPP:

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[81] (115 tons/year NOx emissions) × (1.3:1 NOx ERC/NOx emissions) = 149.5 tons/year NOx ERCs (rounded to 150 tons/year NOx ERCs).

[82] MDAQMD 2009 NOx ERC Engineering Evaluation.

[83] Measured with Google Earth (19409 National Trails Highway in Oro Grande, California, to 950 E Avenue M in Palmdale, California).

[84] (115 tons/year NOx emissions) × (1.5:1 NOx ERC/NOx emissions) = 172.5 tons/year NOx ERCs (rounded to 173 tons/year NOx ERCs).

[85] CEC Decision, p. 6.2-45.

[86] CEC Decision, p. 6.2-11.

> The AVAQMD is a very small district that does not have any distance ratios noted in their rules and regulations. Federal guidance on the requirement for a positive net air quality benefit is present in Appendix S of 40 CFR 51, which requires a demonstration of a positive net air quality benefit that can require modeling if emission offset ratios are insufficient and/or the location of the offsets are significantly different than the emissions being offset. Therefore, the SJVAPCD limitations on the distance between the ERC and new emission source should be considered as a guide in determining the relative effectiveness of the proposed ERCs. SJVAPCD Rule 2201 requires that an offset ratio of 1.5 to 1 be used for all ERCs that are more than 15 miles from the source. In addition, SJVAPCD Rule 2201 states that offsets from another district may be used only if the source of the offsets is within 50 miles of the proposed emissions increases and the APCO [air pollution control officer] has reviewed the permit conditions issued by the district in which the proposed offsets are obtained and certifies that such offsets meet the requirements of this rule and California Health & Safety Code Section 40709.6. Since the project site is almost 50 miles from the AVAQMD/SJVAPCD border, potential sources of SJVAB emission reduction credits meeting these requirements might be very limited.[87]

Therefore, the proposed NOx ERC transfer cannot satisfy the CEC's condition of certification for the PHPP, is inconsistent with the CEQA review of the Project, and should therefore not be approved by the AVAQMD. Further, the CEC's CEQA analysis did not analyze the specific ERCs but rather only evaluated the *mechanism* of a potential transfer. Any specific ERC and their inter-district transfers must be separately evaluated for their impacts. As the CEC explains "Identification of broad categories of ERCs does not meet the requirement to fully evaluate the validity and effectiveness of ERC mitigation."[88] Therefore, any specific ERC transfer to the AVAQMD must be subject to separate CEQA review to demonstrate that the proposed ERCs would not result in adverse impacts on air quality and public health. In my opinion, the NOx ERC transfer at the proposed offset ratio is insufficient and cannot ensure that PHPP emissions would not result in a net increase in unhealthful ozone pollution in the Mojave Desert Air Basin which, in turn, would adversely impact public health.

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[87] CEC, Final Staff Assessment, Palmdale Hybrid Power Project, CEC 700-2011-001–FSA, Docket No. 08-AFC-9, December 6, 2010, pp. 1-10 and 4.1-29; available at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=08-AFC-09.

[88] CEC June 16, 2010 Letter to AVAQMD.

3. The Use of ERCs for PHPP as a Federal Major Facility Requires Consultation with CARB and EPA

For inter-district ERC transfers within the same air basin, AVAQMD Rule 1305(4) requires:

> (a) Emissions reductions occurring within the air basin but outside the District may be used as Offsets upon approval of the APCO [air pollution control officer].
>
> (i) For a Federal Major Facility as defined in District Rule 1310(C)(6) … and which is located in a Federal nonattainment area the APCO's approval shall be made in consultation with CARB and the USEPA, on a case-by-case basis.

For inter-district and inter-basin ERC transfers, AVAQMD Rule 1305(5) requires:

> (a) Emissions reductions from outside the air basin may be allowed to be used as Offsets upon approval of the APCO.
>
> (i) For a Federal Major Facility as defined in District Rule 1310(C)(6) ... and which is located in a Federal nonattainment area the APCO's approval shall be made in consultation with CARB and the USEPA, on a case-by-case basis.

Here, the PHPP would be located in a federal (and state) nonattainment area for ozone[89] and the facility is a federal major facility per AVAQMD Rule 1310(C)(6) because its potential to emit to emit NOx, which are ozone precursors, of 115 tons/year[90] exceeds the 100 tons/year threshold established in AVAQMD Rule 1310(D)(1)(a). (The facility's potential to emit for VOCs is below the 100 tons/year threshold established in AVAQMD Rule 1310(D)(1)(a). However, the PHPP nonetheless is a federal major facility due to the exceedance of the AVAQMD's major source threshold for NOx emissions.) Therefore, the inter-district transfer of NOx ERCs from the MDAQMD to the AVAQMD and the inter-district/inter-basin transfer of VOC ERCs from the SJVAPCD to the AVAQMD may only be approved in consultation with CARB and EPA. (The consultation for the proposed ERC transfer could not have been conducted during the CEC proceeding for the PHPP because the Applicant had not yet procured the PHPP-specific ERCs now proposed for transfer.) EPA commented on the Revised PDOC that "Antelope Valley AQMD's Rule 1305(B)(5)(a)(i) requires that the District consult with the California Air Resources Board and U.S. EPA Region 9 on inter-basin and inter-district transfers. Neither EPA nor ARB has been consulted over these ERC transfers." According to my discussion with you on December 11, 2013, there is no evidence that further consultation over the specific ERCs proposed for transfer has

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[89] CARB, Area Designations Maps / State and National, last reviewed April 22, 2013; http://www.arb.ca.gov/desig/adm/adm.htm.

[90] CEC Decision, p. 6.2-12.

occurred. Therefore, the AVAQMD cannot at this point approve the requested ERC transfers.

In this particular instance, consultation between CARB, EPA and AVAQMD is critical because the nature and age of the ERCs raise serious concerns regarding whether they should be deemed actual mitigation to offset ozone pollution in an air basin already designated "nonattainment" for this pollutant. The three agencies must work together to protect air quality and public health.

4. VOC ERCs Are Not Surplus for Purposes of the AVAQMD's Nonattainment Planning

As discussed in detail before, the proposed VOC ERCs are not surplus for purposes of the AVAQMD's nonattainment planning and therefore their transfer may negatively impact air quality. Therefore, the VOC ERC transfers as proposed do not comply with the requirements of Health & Safety Code 40709.6(d).

5. Emission Reductions Associated with Requested NOx ERC Transfer Were Generated Downwind of the PHPP and Therefore Do Not Reduce Ozone Concentrations in the Antelope Valley

As previously discussed, the emission reductions associated with the requested NOx ERC transfer originate with Riverside Cement's Victorville facility[91], 42.9 miles east of the PHPP site.[92] The prevailing winds (and pollutant transport) in the Mojave Desert Air Basin are from the west and north. Therefore, NOx emissions from the PHPP will typically form ozone and impact areas downwind, *i.e.*, to the east and south. It is therefore unlikely that the NOx ERCs obtained from Riverside Cement will have any positive effect on the ozone concentrations in the Antelope Valley to the west. In my opinion, the ozone precursor emissions from the PHPP will result in an increase in ozone concentrations in the Antelope Valley and have deleterious impacts on public health.

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[91] MDAQMD 2009 NOx ERC Engineering Evaluation.

[92] Measured with Google Earth (19409 National Trails Highway in Oro Grande, California, to 950 E Avenue M in Palmdale, California).

Other districts have in the past found that ERCs generated within the same air basin only a few miles apart would not adequately offset emissions from a proposed source due to meteorological conditions affecting ozone transport. For example:

> In 1990, March AFB [air force base] attempted to acquire emission reduction credits from Norton AFB. March AFB and Norton AFB are located approximately 20 miles apart in Southern California. Both bases are located within the South Coast Air Quality Management District. March AFB was scheduled to receive the 63rd Military Airlift Wing from Norton AFB. March AFB needed emission reduction credits to offset the additional air emissions associated with the support equipment of the 63rd Military Airlift Wing. Despite being within the same air quality management district, and only approximately 20 miles apart, the South Coast Air Quality Management District denied the emission reduction credit transfer. The transfer was denied because March AFB was not in a compatible zone for emissions trading with Norton AFB. Compatible zones in the South Coast Air Quality Management District are determined by wind direction and other meterological [sic] factors (Savoie, 1993:10 and Lam, 1993).[93]

I therefore recommend that the AVAQMD carefully consider the ozone formation and transportation within the Mojave Desert Air Basin to determine whether the proposed NOx ERC transfers would have any beneficial impact on ozone concentrations in the Antelope Valley.

6. The AVAQMD Does Not Meet the Progress towards Attainment of the National Ozone Ambient Air Quality Standards Projected in Its Ozone Plan

The AVAQMD adopted an attainment demonstration plan which projects attainment of the federal 8-hour ozone standard by 2021.[94] Table 2 below summarizes the projected design values for various locations within the Mojave Desert Air Basin for 2012, 2017 and 2021 (including Lancaster within the AVAQMD's jurisdiction); the 1st highest monitored concentrations at the same locations in the year 2012; and the number of days ozone concentrations were observed above the 8-hour national ambient air quality standard for ozone.

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[93] *See* Charles H. Weir, Department of the Air Force, Air Force Institute for Technology, A Plan for Coordinating Department of Defense Emissions Trading, Thesis, September 1993, AD-A270 710, AFIT/GEE/LAS/93S-2; available at http://www.dtic.mil/get-tr-doc/pdf?AD=ADA270710.

[94] AVAQMD 2007 Ozone Plan.

Table 2: Comparison of AVAQMD's modeled ozone attainment demonstration design values and 2012 ozone monitoring values for 8-hour ozone national ambient air quality standard

Location	Projected design value[a] (ppb)*			Monitored concentration[b]		
	2012	2017	2020	1st highest (ppb) 2012	Days above NAAQS	Meets projected design value?
Lancaster	86.5	79.7	74.0	95	39	**NO**
Phelan	92.6	86.7	80.5	108	47	**NO**
Victorville	88.0	77.0	74.4	94	28	**NO**
Hesperia	95.7	88.7	76.5	97	55	**NO**
Barstow	79.7	73.2	79.5	84	15	**NO**
Twentynine Palms	77.3	65.8	82.2	97[d]	48[d]	**NO**

* parts per billion ("ppb")

a from: AVAQMD 2007 Ozone Plan

b CARB, iADAM: Air Quality Data Statistics, Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages; http://www.arb.ca.gov/adam/topfour/topfour1.php.

c A design value is a statistic that describes the air quality status of a given location relative to the level of NAAQS. Design values are defined to be consistent with the individual NAAQS as described in CFR Part 50 and are typically used to designate and classify nonattainment areas, as well as to assess progress towards meeting the NAAQS. Design values are computed and published annually by EPA's Office of Air Quality Planning and Standards. (*See* EPA, Design Values; http://www.epa.gov/airtrends/values.html.)

d Monitoring station at Joshua Tree National Monument, about 22 miles west of Twentynine Palms.

Table 2 clearly shows that the Mojave Desert Air Basin does not meet the projected design values for 2012. In 2013, ozone pollution in the AVAQMD exceeded the 8-hour national ambient air quality standard for ozone at the monitoring stations between 15 and 55 days per year.

While some improvement in ozone concentration could be observed over the past decade, as shown in Figure 4 below, the Mojave Desert Air Basin is a long way from achieving attainment with the federal 8-hour ozone standard.

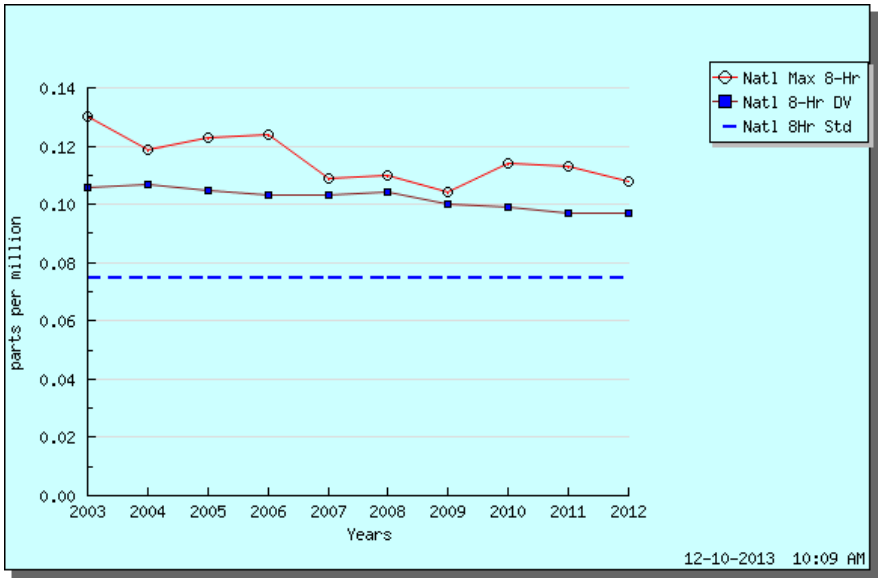


Figure 4: Monitoring values for 8-hour NAAQS in MDAB
(from: CARB, iADAM: Air Quality Data Statistics, Ozone Trends Summary: Mojave Desert Air Basin; http://www.arb.ca.gov/adam/trends/trends2.php#)

Similar observations can be made about the air basin's progress towards attainment with the 8-hour state ambient air quality standard for ozone for ozone from 2003 through 2012, as shown in Figure 5 below.

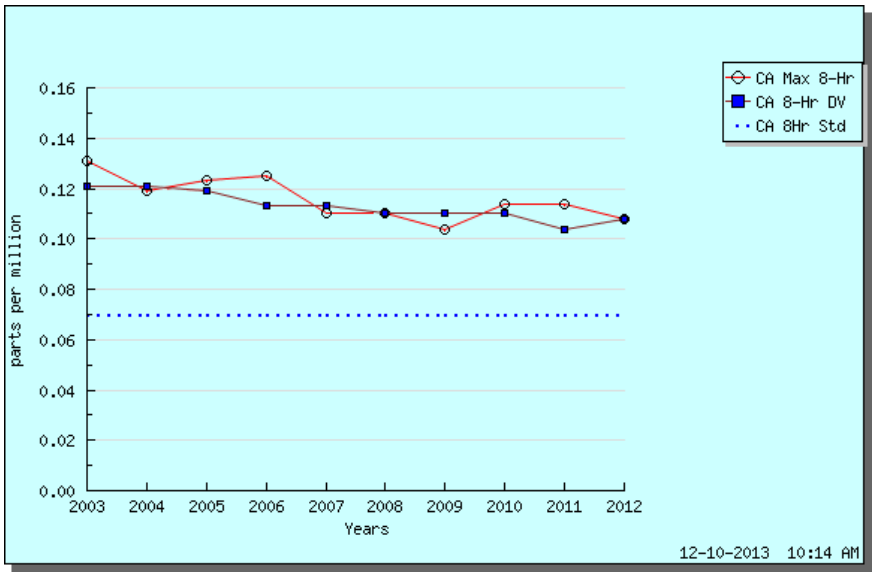


Figure 5: Monitoring values for 8-hour CAAQS in MDAB
(from: CARB, iADAM: Air Quality Data Statistics, Ozone Trends Summary: Mojave Desert Air Basin; http://www.arb.ca.gov/adam/trends/trends2.php#)

Ozone concentrations determined for the Mojave Desert Air Basin for the 1-hour state ambient air quality standard for ozone from 2003 through 2012, shown in Figure 6

below, again show some improvement but are still far above the state ambient air quality standard for ozone.

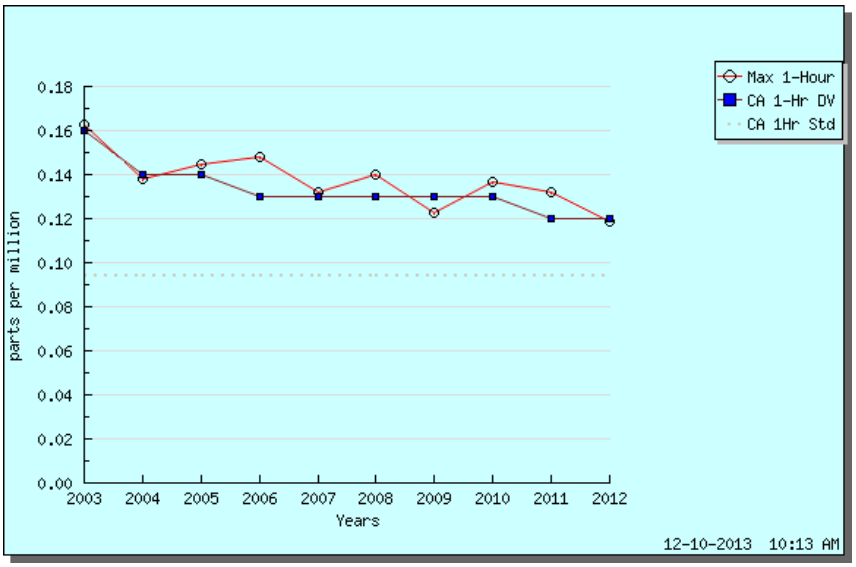


Figure 6: Monitoring value for 1-hour CAAQS in MDAB
(from: CARB, iADAM: Air Quality Data Statistics, Ozone Trends Summary: Mojave Desert Air Basin; http://www.arb.ca.gov/adam/trends/trends2.php#)

Finally, Figure 7 below, illustrates the number of days per year when ozone concentrations exceed the state and national ambient air quality standards, *i.e.*, when residents of the Mojave Desert Air Basin breathe unhealthy air due to ozone pollution.

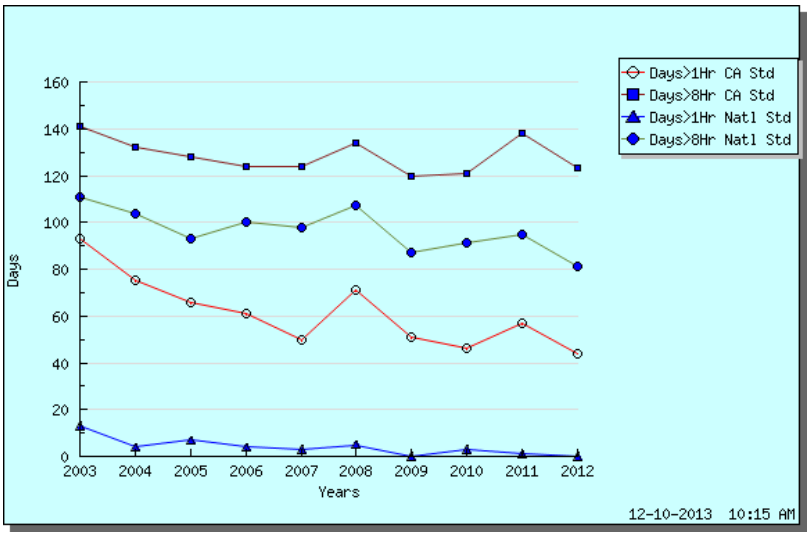


Figure 7: Days over the 1-hour and 8-hour CAAQS and 1-hour (revoked) and 8-hour NAAQS in the MDAB
(from: CARB, iADAM: Air Quality Data Statistics, Ozone Trends Summary: Mojave Desert Air Basin; http://www.arb.ca.gov/adam/trends/trends2.php#)

In 2012, the ozone concentrations in the Mojave Desert Air Basin exceeded the 8-hour state ambient air quality standard on about 80 days and the 1-hour state ambient air quality standard for ozone on more than 120 days, i.e., about a third of the year.

Clearly, the Mojave Desert Air Basin including the part under the AVAQMD's jurisdiction, is a long way from attainment with the state and national ambient air quality standards for ozone and its residents continue to be exposed to harmful concentrations of this pollutant. The PHPP would emit substantial amounts of ozone precursors which further aggravate the already dire air quality in the air basin.

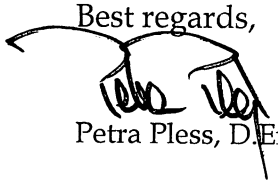
IV. Recommendation

Based on the above analysis, I find that the proposed ERC transfers to the AVAQMD do not comply with Health & Safety Code Section 40709.6, do not comply with the AVAQMD rules, and do not comply with the CEC's conditions of certification. Based on my opinion, the transfer and use of subject ERCs as proposed by the Applicant would adversely affect the air quality in the Antelope Valley and thereby endanger public health.

Therefore, I recommend that the AVAQMD Governing Board deny the proposed ERC transfers. Finally, I note that any ERCs transferred to the AVAQMD must be included in the district's ozone plan before the AVAQMD can issue an Authority to Construct to the PHPP and before the respective ERCs can be used as offsets for the PHPP.

Please feel free to call me at (415) 492-2131 or e-mail at petra@ppless.com if you have any questions about the comments in this letter or if you require a copy of any cited document.

Best regards,



Petra Pless, D.Env.