COMMENT LETTER 1

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Via Overnight and Electronic Mail

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Re: Comments on the Draft Environmental Impact Report for the Phillips 66 Los Angeles Refinery Ultra Low Sulfur Diesel Project (SCH#2004011095)

Dear Mr. Inabinet:

We are writing on behalf of Safe Fuel and Energy Resources California ("SAFER California") to comment on the Draft Environmental Impact Report ("DEIR") for the Phillips 66 Los Angeles Refinery Ultra Low Sulfur Diesel Project ("Project"). The DEIR was prepared by the South Coast Air Quality Management District ("District" or "SCAQMD") pursuant to the California Environmental Quality Act ("CEQA").[1] In 2004, Phillips 66 (previously ConocoPhillips) proposed this Project to (1) revamp the Mid-Barrel Hydrotreater Unit 90 to improve the hydrotreating reaction to meet the required diesel sulfur level; and (2) modify the Mid-barrel handling and logistics to segregate diesel from higher sulfur jet fuel.[2] 1-1

The District prepared a Negative Declaration ("ND") for the Project in 2005, which was subsequently challenged. Although the Project was constructed despite litigation, the lawsuit eventually was considered by the California Supreme Court.[3] The Court struck down the District's use of a hypothetical baseline in the ND which relied on maximum permitted emission levels, instead of actual existing 1-2

[1] Pub. Resources Code, §§ 21000 et seq.
[2] Draft Environmental Impact Report ("DEIR") for the Phillips 66 Los Angeles Refinery Ultra Low Sulfur Diesel Project ("Project"), p. 1-9.
[3] *Communities For A Better Environment v. South Coast Air Quality Management Dist.* ("*CBE v. SCAQMD*") (2010) 48 Cal.4th 310.
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environmental conditions. The Court also found there was a fair argument that the Project could have significant NOx emissions and ordered the District to prepare an EIR.[4]

1-2 cont.

The District's EIR should have fully and adequately addressed the Supreme Court's holding in *CBE v. SCAQMD*. However, the DEIR is not consistent with the Supreme Court decision and fails to meet the requirements of CEQA. The DEIR introduces new errors that underestimate the Project's actual increase in emissions. Furthermore, the emissions data is not supported by substantial evidence. The DEIR also fails to provide sufficiently detailed information to support its conclusions, rendering the DEIR inadequate as an informational document under CEQA. Finally, the DEIR fails to adequately analyze Project emissions. When the calculation defects described below are corrected, the Project results in significant unmitigated air quality impacts due to NOx emissions.

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We prepared these comments with the assistance of Dr. Phyllis Fox, M.S., Ph.D., a licensed professional engineer. Dr. Fox's technical comments are attached hereto (**Attachment A**) and submitted in addition to the comments in this letter. Accordingly, the District must address and respond to the comments of Dr. Fox separately.

I. INTEREST OF COMMENTORS

Safe Fuel and Energy Resources California ("SAFER California") advocates for safe processes at California refineries to protect the health, safety, the standard of life and the economic interests of its members. For this reason, SAFER California has a strong interest in enforcing environmental laws, such as CEQA, which require the disclosure of potential environmental impacts of, and ensure safe operations and processes for, California oil refineries. Failure to adequately address the environmental impacts of crude oil transport and refining processes poses a substantial threat to the environment, worker health, surrounding communities, and the local economy.

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Refineries are uniquely dangerous and capable of generating significant fires and the emission of hazardous and toxic substances that adversely impact air quality, water quality, biological resources and public health and safety. These risks were recognized by the Legislature and Governor when enacting SB 54.

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[4] *Id.*, at 327-328.

Absent adequate disclosure and mitigation of hazardous materials and processes, refinery workers and surrounding communities may be subject to chronic health problems and the risk of bodily injury and death.

Poorly planned refinery projects also adversely impact the economic wellbeing of people who perform construction and maintenance work in the refinery and the surrounding communities. Plant shutdowns in the event of accidental release and infrastructure breakdown have caused prolonged work stoppages. Such nuisance conditions and catastrophic events impact local communities and can jeopardize future jobs by making it more difficult and more expensive for businesses to locate and people to live in the area. The participants in SAFER California are also concerned about projects that carry serious environmental risks and public service infrastructure demands without providing countervailing employment and economic benefits to local workers and communities.

The members represented by the participants in SAFER Califoruia live, work, recreate and raise their families in Los Angeles County, including in the Wilmington area of Los Angeles. Accordingly, these people would be directly affected by the Project's adverse environmental impacts. The members of SAFER California's participating unions may also work in the refinery itself. They will, therefore, be first in line to be exposed to any hazardous materials, air contaminants, and other health and safety hazards, that exist onsite.

1-5 cont.

II. THE DEIR RELIES ON AN INAPPROPRIATE BASELINE TO EVALUATE IMPACTS TO AIR QUALITY

CEQA requires lead agencies to include a description of the physical environmental conditions in the vicinity of a project as they exist at the time environmental review commences.[5] "This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant."[6] Baseline calculations must be supported by substantial evidence, which the CEQA Guidelines defme as "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion."[7] "Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by

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[5] CEQA Guidelines, § 15125 subd. (a); *see* also *CBE v. SCAQMD* (2010) 48 Cal.4th 310, 321.
[6] CEQA Guidelines, § 15125 subd. (a).
[7] CEQA Guidelines, §15384.
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facts." "[U]nsubstantiated opinion or narrative [and] evidence which is clearly inaccurate or erroneous . . . is not substantial evidence."[8]

1-6 cont.

In *CBE v. SCAQMD*, the California Supreme Court held that CEQA requires that the impacts of a proposed project ordinarily be compared to the ***actual environmental conditions*** existing at the time of CEQA analysis.[9] That is, the lead agency is required to consider "***real conditions on the ground*** . . . rather than the level of development or activity that *could* or *should* have been present according to a plan or regulation."[10] In *CBE v. SCAQMD*, the Court struck down the SCAQMD's Initial Study and ND for this Project because the District relied on a hypothetical baseline, rather than real conditions on the ground, to evaluate the impacts of a project proposed at the ConocoPhillips Wilmington Refinery. The Court explained:

> [T]he District's baseline operational level was the collective maximum capacity of the boilers; under the Negative Declaration's analysis, all four boilers could be run at maximum capacity simultaneously without creating any potential environmental impact. Yet the District acknowledged that in ordinary operation any given boiler ran at the maximum allowed capacity only when one or more of the other boilers was shut down for maintenance; operation of the boilers simultaneously at their collective maximum was not the norm.[11]

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Accordingly, the Court concluded that the District relied on an inadequate, hypothetical baseline to evaluate project impacts, and invalidated the District's analysis. Astonishingly, the District repeated this same error here.

Furthermore, in *San Joaquin Raptor Rescue Center et al. v. County of Merced* (2007), 149 Cal.App.4th 645, environmental groups challenged the County of Merced's mining project EIR because of a flawed baseline, among other issues. The aggregate mine at issue in the case averaged about 240,000 tons per year of aggregate material with peak mining of over 305,000 tons per year.[12] Although the draft EIR originally used the average mining production, the final EIR appeared to

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[8] Pub. Resources Code, § 21082.2 subd. (c).
[9] *Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 321.
[10] *Id.* at p. 321, emphasis added and in original.
[11] *Id.* at p. 322, emphasis added.
[12] *San Joaquin Raptor Rescue Center et al. v. County Of Merced* (2007), 149 Cal.App.4th 645, 651.
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obscure the baseline, creating uncertainty about the actual impacts of the project.[13] The County asserted it had in fact used the 240,000 average but the court admonished the County for being unclear in the final EIR. Despite the EIR's confusion on the issue, the court found the 240,000 annual average of the four years preceding the environmental review was the correct baseline,[14] rather than the peak mining operations.

1-8 cont.

Here, the description of the environmental setting in the DEIR is inadequate because it uses peak emissions, rather than average emissions levels that reflect the actual baseline over a two-year period. Essentially, the District's inaccurate calculations inflate the baseline and minimize the impacts. As the Supreme Court held in evaluating the District's ND for this Project, CEQA prohibits this approach. The District is required to determine the environmental baseline in reference to actual on-the-ground operations, rather than to a hypothetical haseline. Thus, the District has not met its obligation to accurately describe the existing environmental setting to enable a proper analysis of Project impacts.[15]

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The DEIR confusingly relies on different baselines for each emissions source. The DEIR uses peak emissions, rather than average or minimum day, for determining the baseline for heater B-201.[16] Not only is this illegal under CEQA, but the District's own significance criteria are based on the maximum increase in emissions.[17] Thus, as Dr. Fox concludes, this miscalculation is a "fundamental flaw."[18] In order to properly calculate the Project's maximum increase in emissions, the District must use a baseline of either the minimum or annual average pre-Project daily emissions.[19] As with the District's baseline in *CBE v. SCAQMD*, the District's own analysis shows that the selected baseline is not typical of normal operations.

Furthermore, Dr. Fox points out that the District's selection of 2002 to 2003 for baseline years is unsupported because "to support any given baseline, data over a much longer period of record is presented to demonstrate that the selected years

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[13] *Id.*, at 658.
[14] *Id.*, at 659.
[15] *Galante Vineyards v. Monterey Peninsula Water Management District* (1997) 60 Cal.App.4th 1109, 1121-22.
[16] DEIR, Appendix B-3.
[17] *See*, e.g., South Coast Air Quality Management District, CEQA Handbook (1993), p. 6-3.
[18] Phyllis Fox Comments re: Project DEIR (hereinafter, "Fox Comments"), p. 6, **Attachment A**.
[19] *Id.*

are representative of actual conditions at the start of the CEQA review."[20] Although the District's selection of 2002 and 2003 *may* be reasonable, Dr. Fox points out that "other circumstances may be present that warrant review of a longer pre-project record."[21] For example, "companies temporarily increase operations artificially to establish a higher baseline, which has the effect of reducing emissions increases due to the Project."[22] The Supreme Court warned against such action in *CBE v. SCAQMD*.[23] The DEIR provides a summary of reported emissions for various pollutants for the entire Refinery for the period 2000 to 2013.[24] However, Dr. Fox states that the summary is not adequate to support the baseline years for individual process units "because the modified units/operations emit only a tiny fraction of the total Refinery emissions." The District's decision to select a particular range and period of operations must be supported by substantial evidence. Here, it is not.

1-10 cont.

The DEIR claims that the calculations and methodology can be found in Appendix B.[25] However, Appendix B excludes historical emissions data. Dr. Fox cannot adequately assess the District's calculations because "[t]he DEIR does not contain any of the information used to select peak daily emissions of CO, VOC, NOx, SOx, PM10, or PM2.5 during 2002 and 2003."[26] The DEIR likely used continuous emissions monitoring data, or a subset thereof, to determine the pre-Project peak daily emissions.[27] According to Dr. Fox, such data is necessary to "evaluat[e] the reasonableness of the selected baseline emissions. . . [i]t is critical, for example, to determine whether a spike in operations just happened to occur prior to environmental review."[28] However, the DEIR does not contain this information, nor did the District provide this information in response to our Public Record Act request.[29] Without this data, it is impossible to determine actual emissions before the Project, "evaluate whether the peak values are outliers, occurring only once or very few times over the two year period, or whether they are

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[20] *Id.*, at 5.
[21] *Id.*
[22] *Id.*
[23] *CBE v. SCAQMD* (2010) 48 Cal.4th 310, 328.
[24] DEIR, Table 3.1-13.
[25] DEIR, p. 3-33.
[26] Fox Comments, p. 16.
[27] *Id.*
[28] *Id.*
[29] Letter from Laura Horton, to Michael Krause, Jeff Inabinet, and Kurt Wise re: Request for Records under CEQA and Public Records Act, October 28, 2014.
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representative of annual operating conditions over the two year period."[30] Accordingly, the District's conclusion that peak emissions in 2002 and 2003 are representative of typical operations of heater B-201 cannot be verified and is not supported by substantial evidence.

1-11 cont.

The District must prepare a revised analysis which considers normal operations as the baseline for its impact analysis. The revised analysis must also include sufficient information to enable those that did not prepare the revised analysis to determine whether the District's conclusions are adequately supported.

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III. THE DEIR FAILS TO ADEQUATELY DISCLOSE, ANALYZE, AND MITIGATE SIGNIFICANT ENVIRONMENTAL IMPACTS

CEQA has two basic purposes, neither of which the DEIR satisfies. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project.[31] CEQA requires that an agency analyze potentially significant environmental impacts in an EIR.[32] The EIR should not rely on scientifically outdated information to assess the significance of impacts, and should result from "extensive research and information gathering," including consultation with state and federal agencies, local officials, and the interested public.[33]

Second, CEQA requires public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures.[34] The EIR serves to provide public agencies and the public in general with information about the effect that a proposed project is likely to have on the environment and to "identify ways that environmental damage can be avoided or significantly reduced."[35] If a project has a significant effect on the environment, the agency may approve the project only upon a finding that it has "eliminated or substantially lessened all significant effects on the environment where feasible," and that any

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[30] Fox Comments, p. 16-17.
[31] Cal. Code Regs., tit. 14, § 15002, subd. (a)(1) (hereinafter, "CEQA Guidelines").
[32] *See* Pub. Resources Code § 21000; CEQA Guidelines § 15002.
[33] *Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm.* (2001) 91 Cal. App.4th 1344, 1367;*Schaeffer Land Trust v. San Jose City Council*, 215 Cal.App.3d 612, 620.
[34] CEQA Guidelines § 15002(a)(2)-(3); *Berkeley Keep Jets Over the Bay Com.*, 91 Cal.App.4th at 1354.
[35] CEQA Guidelines § 15002 subd. (a)(2).
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unavoidable significant effects on the environment are "acceptable due to overriding concerns" specified in Section 21081 of CEQA.[36]

The DEIR fails to meet these standards in several respects: it fails to disclose all relevant information related to Project emissions; it fails to analyze maximum potential to emit in calculating Project emissions; it fails to adequately analyze hydrogen production emissions, replacement heater emissions, steam production emissions, and emissions from increased electricity demand; and it fails to mitigate significant impacts. Thus, the DEIR is severely deficient under CEQA and must be revised. 1-13 cont.

A. The DEIR Fails to Disclose All Relevant Information Related to Project Emissions

An EIR must include sufficient detail to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project.[37] Thus, the EIR protects not only the environment but also informed self-government.[38] An EIR must also demonstrate a good faith effort at full disclosure.[39] A prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decision-making and informed public participation, thereby thwarting the statutory goals of the EIR process.[40] 1-14

The DEIR excludes key data and assumptions used to estimate Project emissions increases.[41] The DEIR estimates changes in emissions from several Project components including new fugitive components; a new replacement heater in Unit 90; reactivation of an existing storage tank 331; increased hydrogen production; electricity demand to support Unit 90; truck transport; and steam demand for Unit 90.[42] However, as Dr. Fox points out, the DEIR "narrowly focuses only on Unit 90 and new equipment, ignoring increases that occur at existing equipment required to support Unit 90."[43] 1-15

[36] CEQA Guidelines § 15092, subd. (b)(2)(A)-(B).
[37] *Association of Irritated Residents v. County of Madera*, 107 Cal.App.4th 1383, 1390.
[38] *Citizens of Goleta Valley v. Bd. of Supervisors* (1990) 52 Cal.3d 553, 564 (citations omitted).
[39] *Id.*
[40] *Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners* (1993) 18 Cal.App.4th 729, 748.
[41] Fox Comments, p. 1
[42] DEIR, Table 3.3-7; DEIR, Appendix B.
[43] Fox Comments, p. 5.
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As explained by Dr. Fox, removing increased amounts of sulfur requires additional steam, electricity, and heat, which requires the combustion of additional fuel and releases more pollutants.[44] The DEIR includes emissions data to support increased sulfur removal at Unit 90, but does not include certain emissions increases at other units. The DEIR also excludes additional utility demands from increased sulfur removal and related emissions from its calculations, as well as all of the information required to independently estimate those emissions.[45]

1-15 cont.

Furthermore, the DEIR does not include pertinent information related to carbon monoxide ("CO"), such as daily heat rate, daily CO emission data for the pre-Project period, and the actual permit condition assumed to control CO emissions.[46] Additional omissions include emissions from increased electrical demand and certain hydrogen production emissions, both discussed further below, and lead emissions calculations, which are not included in the DEIR even though the heater, hydrogen production, electricity demand and truck transport emit lead.[47] Finally, Dr. Fox explains in her comments that steam production emissions are underestimated. These omissions, in addition to missing information needed for calculating the baseline, render the DEIR inadequate as an informational document under CEQA.

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B. The DEIR Fails to Analyze Maximum Potential to Emit

The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return.[48] In order to properly alert the public to any impacts from a project, an EIR must accurately measure changes in the existing physical conditions in the affected area and "significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects."[49] In *San Joaquin Raptor Rescue Center et al. v. County of Merced* (2007), 149 Cal.App.4th 645, discussed above, the court found that a mining project EIR was deficient for failing to include "analysis of the impacts that would result from peak levels of [mining]

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[44] *Id.*
[45] *Id.*
[46] *Id.*, at 14.
[47] *Id.*, at 4, 6, 17.
[48] *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.
[49] CEQA Guidelines § 15126.2 subd. (a).
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production" given that the increase in mining production was "reasonably foreseeable."[50]

1-17 cont.

Here, the DEIR fails to adequately analyze Project emissions because it does not analyze the maximum potential to emit, in this case the peak day emissions. Instead, the DEIR minimizes potential emissions impacts by assessing average emissions in 2006-2008.[51] There are several problems with this analysis. First, the DEIR fails to state any rational basis for choosing those particular years, other than the fact that the District wanted to match the two-year baseline time frame.[52] Second, this period corresponds to a severe recession, during which fuel demand, and thus Refinery emissions, would have declined.[53] The DEIR indicates that Refinery-wide emissions in 2007 were among the lowest reported over the period 2000 to 2012.[54] According to Dr. Fox, "daily hydrogen demand data should have been provided for the period 2000 to 2013" to support the decision to assess average emissions in 2006 to 2008 as an estimate of post-Project emissions.[55] This would allow an accurate representation of the peak day calculation. However, the DEIR does not provide daily use data for processes, such as hydrogen production. Therefore, Dr. Fox cannot evaluate whether the post-Project emissions represent the peak day.[56]

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The comparison of impacts between the highest peak emissions in 2002 and 2003 (pre-Project) and the low average emissions in 2006-2008 (post-Project) is not an accurate portrayal of Project impacts. As the Court stated in *CBE v. SCAQMD*, "the comparison must be between existing physical conditions without the Diesel Project and the conditions expected to be produced by the project."[57] This must naturally include the maximum potential to emit, and not low average emissions. Using the lowest average emissions on record as the basis for "conditions expected to be produced by the project" is unsupported and is contradicted by the District's own statement that it "makes significance determinations for operational emissions based on the maximum or peak daily allowable emissions during the operational

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[50] *San Joaquin Raptor Rescue Center et al. v. County of Merced* (2007), 149 Cal.App.4th 645, 660.
[51] DEIR, p. 1-11.
[52] *Id.*,
[53] Fox Comments, pp. 4, 7
[54] *Id.*, at 7; DEIR, Table 3.1-3.
[55] Fox Comments, p. 8.
[56] *Id.*
[57] *CBE v. SCAQMD* (2010) 48 Cal.4th 310, 328.
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phase."[58] In order to adequately asses the Project's impacts, a baseline of average or minimum emissions pre-Project should be compared to the maximum potential to emit pollutants post-Project.[59] An accurate description of Project emissions over the life of the Project should be reflected by the maximum potential impact, as explained by Dr. Fox in her comments.[60]

The DEIR must provide an analysis that represents a maximum potential impact. It is unclear why the District insists on using average emissions rather than the maximum potential to emit, as it has done in other cases.[61] In addition, the DEIR provides no substantial evidence in the record or valid legal basis for replacing the maximum potential to emit with average emissions over a two year period just because the Project is operational. The Project still has the potential to emit, and indeed has emitted, more than the average of 2006-2008.[62]

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C. The DEIR Fails to Adequately Analyze Hydrogen Production Emissions

CEQA requires that an EIR include, among other things, a detailed statement setting forth "[a]ll significant effects on the environment of the proposed project."[63] For the purpose of a significance determination under CEQA, the lead agency is required to consider a project's direct and reasonably foreseeable indirect environmental impacts.[64] In particular, CEQA Guidelines sections 15064(d)(2)-(3) provide:

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> An indirect physical change in the environment is a physical change in the environment which is not

[58] DEIR, p. 3-31.
[59] Fox Comments, p. 2-3.
[60] *Id.*, at 15-16.
[61] In District responses to our office's comments on behalf of CURE for the Ultramar Inc. Wilmington Refinery Cogen Project, p. G-25, the District compared the baseline to "maximum permitted daily emissions of the proposed project." Although the baseline analysis for the Cogen Project was faulty, the District's analysis for future emissions was based on maximum permitted daily emissions. *Available at* http://www.aqmd.gov/docs/default-source/ceqa/documents/permit-projects/2014/ultramar_appendix_g.pdf?sfvrsn=2.
[62] *See* Fox Comments.
[63] Pub. Resources Code, § 21100, subd. (b); see also Guidelines, § 15126 ["Significant Environmental Effects of the Proposed Project" and "The Mitigation Measures Proposed to Minimize the Significant Effects" shall be discussed "preferably in separate sections or paragraphs of the EIR."].
[64] CEQA Guidelines § 15064 subd. (d).
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> immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment.

1-20 cont.

In order to remove increased amounts of sulfur, the Project requires increased amounts of hydrogen.[65] Emissions from hydrogen use were estimated assuming 100% of the hydrogen is supplied by the nearby Air Products and Chemicals, Inc. Hydrogen Facility in Carson, California ("Hydrogen Facility").[66] Emissions from hydrogen production can come from a variety of sources, including boilers, reformer heaters, fugitive sources (valves, pumps, flanges, etc.), flaring events, and various other indirect sources, including material delivery, truck transport of CO2, and worker travel.[67] According to Dr. Fox, the DEIR significantly underestimates the emissions resulting from the Project's increased hydrogen production by inexplicably excluding emissions from many of these sources.[68]

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The DEIR generally cites to the Hydrogen Facility EIR as a basis for its hydrogen emissions calculations.[69] However, Dr. Fox's review of the Hydrogen Facility EIR indicates that the emission factors used in the DEIR to estimate hydrogen emissions cannot be found in the Hydrogen Facility EIR.[70] For example, the emission factor used for NOx in the DEIR is based only on the Hydrogen Facility boiler and reformer heater, excluding other potential sources such as flaring and indirect emissions.[71] Dr. Fox presents her own calculations using emissions from producing hydrogen for the peak day from the Hydrogen Facility EIR.[72] Dr. Fox explains that hydrogen emissions from the Project must be calculated from peak day operational emissions in order to represent the maximum potential to emit, as discussed above.[73] Using the correct emissions factors and

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[65] DEIR, p. 3-35.
[66] DEIR, pp. 3-35; DEIR Appendix B-4.
[67] Fox Comments, p. 9.
[68] *Id.*, at 9.
[69] DEIR, Appendix B-4; Environmental Audit, Inc., Air Products and Chemicals, Inc. Hydrogen Facility and Specialty Gas Facility ("Hydrogen Facility"), Final Environmental Impact Report, Prepared for the City of Carson, SCH No. 97071078, June 1998.
[70] Fox Comments, p. 8-9.
[71] *Id.*
[72] *Id.*, at 10.
[73] *Id.*

including emissions from flaring and indirect sources increases the NOx emissions from hydrogen production from 14.06 lb/day to 32 lb/day.[74] 1-22 cont.

Furthermore, the Hydrogen Facility EIR from 1998 is outdated. It estimated flaring emissions using a low emission factor.[75] As Dr. Fox points out, the U.S. Environmental Protection Agency ("EPA") now recommends raising the NOx factor to 2.9 lb/mmbtu.[76] Incorporating EPA's updated NOx flaring emission factor would increase NOx emissions from 14 lb/day to ***115,814*** lb/day, greatly exceeding the District's significance threshold of 55 lb/day.[77] 1-23

A project's impacts, which include any "reasonably foreseeable indirect physical change in the environment. . ." must be compared to the environmental baseline to determine whether significant impacts may occur.[78] Even without using EPA's flaring recommendation, the increase in NOx emissions using accurate calculations, when combined with the increased NOx emissions discussed below, brings the total Project emissions beyond the District's significance threshold, thus resulting in a significant impact that the DEIR fails to analyze and mitigate. Dr. Fox's analysis demonstrates that the evidence in the record does not support the DEIR's conclusions regarding hydrogen emissions, and it therefore fails to meet the requirements of CEQA. 1-24

D. The DEIR Fails to Adequately Analyze Replacement Heater Emissions

An EIR may conclude that impacts are insignificant only after providing an adequate analysis of the magnitude of the impacts and the degree to which they will be mitigated. Thus, if the lead agency, here the District, fails to investigate a potential impact, its finding of insignificance simply will not withstand legal scrutiny.[79] 1-25

As explained above, the District again uses a flawed baseline to determine the pre-Project emissions for heater B-210, thus rendering the DEIR's entire

[74] *Id.* (FN 12 explaining revised ULSD operational NOx emissions = 14.06 – 3.5 + 21 = 32 lb/day).
[75] Fox Comments, p. 10.
[76] *Id.*; U.S. EPA, Emissions Estimation Protocol for Petroleum Refineries, Draft Version, August 2014, Table 6-2. **Attachment B** (Section 6 only).
[77] Fox Comments, p. 11.
[78] CEQA Guidelines Section 15378(a).
[79] Pub. Res. Code § 21081.6(b); Guidelines § 15126.4(a)(2).
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emissions analysis inadequate. Furthermore, the DEIR's analysis of heater B-401 is also deficient. The DEIR indicates that heater B-201 was removed from service at Unit 90 and replaced with a new, "functionally identical" heater, B-401.[80] According to the DEIR, the new heater B-401 uses low NOx burners and selective catalytic reduction ("SCR") to reduce NOx emissions.[81] The emissions for B-401 were calculated using a baseline of "actual operating conditions for 2002 and 2003" and the "maximum potential to emit" post-Project.[82] However, according to Dr. Fox's analysis, the DEIR's own emissions data is "not consistent with this explanation" for several reasons.[83]

1-25 cont.

1. Permit Limits Not Supported by the Evidence

Dr. Fox demonstrates that the permit limits used to estimate post-Project emissions in the DEIR are not supported by the evidence.[84] Based on a review of the most recent Title V permit for the Refinery, released in August 2014, the permit has not been updated to include the new B-401 heater and still includes the old B-201 heater.[85] Although Dr. Fox states that the use of permit limits for SOx, NOx, and CO to determine post-Project emissions "is potentially reasonable, if supported by the Title V permit," she is unable to verify the permit limits because the permit has not been updated.[86]

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Dr. Fox explains that review of permit limits is essential for several reasons. Limit exceptions, such as during unit startups and shutdowns, are often included in permits.[87] Such limits are important in determining maximum daily emissions.[88] In addition, permit limits may include averaging time, such as daily, hourly, or annual average. Dr. Fox states that "[t]hese averaging times must be reviewed to assure that the emission increase calculated from the permit limit represents the

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[80] DEIR, pp. 1-3. 1-9.
[81] DEIR, p. 3-34
[82] *Id.*
[83] Fox Comment, p. 11.
[84] *Id.*, at 12-13.
[85] SCAQMD, Facility Permit to Operate, Phillips 66 CO/LA Refinery Wilmington PL, 1660 W Anaheim St, Wilmington, CA 90744, Facility ID 171107, August 15, 2014 (Refinery Title V Permit).
[86] Fox Comments, p. 12.
[87] *Id.* Exceptions are included in the Title V permit for other similar units. *See*, p. 3, Condition A99.1: "The 9 ppm NOx emission limit(s) shall not apply when the equipment is in startup, shutdown, or on-line fuel transfer periods (for NOx)."
[88] Fox Comments, p. 13.
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maximum day, rather than an annual average or monthly average day."[89] Furthermore, a permit must require adequate testing to assure permit limits are met. If it does not, the permit limits cannot be used to establish maximum post-Project emissions.[90] Thus, the permit limits used to estimate post-Project emissions of NOx, CO, and SOx are unsupported. According to Dr. Fox, "[b]asing post-project emissions on these limits likely underestimate[s] the maximum daily emission increase."[91]

1-27 cont.

2. Permit Limits Underestimate NOx Emissions

Dr. Fox's analysis demonstrates that the permit limits underestimate post-Project NOx emissions.[92] The DEIR claims that NOx emissions have decreased because of the heater B-201 shutdown. However, the DEIR's post-Project NOx emission calculations from heater B-401 are based on an unsupported permit limit and do not account for uncontrolled emissions when the SCR is offline during startup or shutdown.[93] According to Dr. Fox, when taking those emissions into account, daily NOx emissions would increase from the DEIR's assumption of 5 lb/day to at least 12 lb/day, or in a worst-case scenario when the SCR is offline for an entire day, NOx emissions would increase to 50 lb/day.[94] Dr. Fox explains that this increase "is sufficient to offset the entire NOx decrease of 30.5 lb/day from shutting down heater B-201 . . . resulting in a NOx increase of 19.5 lb/day. . . for heater replacement."[95] This plausible scenario must be considered in determining the maximum post-Project NOx emissions. Dr. Fox's revised emission calculations, when coupled with the additional revised calculations discussed in other sections, would increase Project NOx emissions increases to 80 lb/day.[96] This increase exceeds the CEQA significance threshold of 55 lb/day.

1-28

[89] *Id.*
[90] *Id.*
[91] *Id.*
[92] *Id.*, at 13-14.
[93] DEIR, p. 3-34; DEIR, Appendix B-3.
[94] Fox Comments, p. 13.
[95] *Id.*, at 14.
[96] *Id.* (FN 20 explains "[r]evised increase in NOx emissions (Table 3.3-7) = 19.5 (replacement heater) + 21 (hydrogen production) +24.9 (electricity demand) + 14.8 (truck transport) = 80.2 lb/day").
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3. Permit Limits Underestimate CO Emissions

Dr. Fox's analysis demonstrates that the permit limits underestimate CO emissions.[97] The DEIR indicates that pre-Project CO emissions (22.64 lb/day) are nearly four times higher than post-Project CO emissions (6.04 lb/day) for a "functionally identical" heater with no CO controls.[98] In attempting to explain this, the DEIR states that "CO emissions are also less because the SCAQMD established a reduced CO emission limit (10 ppm). . ."[99] Because the Title V permit has not been updated, Dr. Fox cannot verify this statement.[100] However, Dr. Fox does explain that "an emission limit by itself without accompanying controls will not lower CO emissions" and that no CO controls have been proposed for heater B-401.[101] Additional analysis in Dr. Fox's comments shows that such a large decline in CO emissions cannot be valid based on peak emissions used for the 2002 and 2003 baseline.[102] Missing information in the DEIR, including CO emissions data, unlawfully thwarts adequate public review of the District's conclusions. 1-29

4. The DEIR's Revised Emissions Factors Underestimate PM10 and PM2.5 Emissions

Dr. Fox's analysis demonstrates that the District's revised emission factors underestimate PM10 and PM2.5 emissions.[103] The DEIR used the same "SCAQMD-approved emission factors" to calculate both the pre-Project and post-Project VOC, PM10, and PM2.5 emissions.[104] The DEIR fails to provide supporting evidence that "SCAQMD-approved emission factors" accurately represent post-Project emissions on the peak day compared to pre-Project emissions for VOC, PM10, and PM2.5. Dr. Fox states that "the DEIR should have provided stack tests to confirm that these emission factors are fair estimates of peak day emissions."[105] 1-30

[97] Fox Comments, p. 14.
[98] DEIR, p. 1-9; DEIR, Appendix B-4.
[99] DEIR, p. 3-34.
[100] Fox Comments, p. 14.
[101] *Id.*
[102] *Id.*, at 15; DEIR, Appendix B-3.
[103] Fox Comments, p. 14.
[104] *Id.*, at 15 (FN 22 explains that "[t]he ratio of pre-project to post-project emissions of VOCs, PM10, and PM2.5 is the same (0.84), indicating that these emissions were calculated using the same pre- and post-emission factor, varying only the firing rate. Thus, the DEIR assumed a baseline firing rate of 35 mmBtu/hr x 0.84 = 29 mmBtu/hr").
[105] Fox Comments, p. 15.
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According to Dr. Fox, "post-project emissions of PM10 and PM2.5 are underestimated by using the same emission factors for the pre- and post-project conditions" and the Project "would increase peak day PM10 and PM2.5 emissions from the use of SCR to control NOx."[106] The SCR, although used to reduce NOx emissions, likely resulted in an increase in the emission factors used for both PM10 aud PM2.5, which is not reflected in the emissions estimates in the DEIR.[107]

1-30 cont.

The DEIR is severely deficient in several ways, not least of which is its miscalculations regarding NOx emissions. The DEIR's flawed emissions calculations, when recalculated and combined with hidden NOx emissions from hydrogen production discussed above, reveal a significant unmitigated impact to air quality due to NOx emissions that exceed the District's significance threshold.

E. The DEIR Fails to Adequately Analyze Emissions from Increased Electricity Demand

To be adequate, an EIR should evidence the lead agency's good faith effort at full disclosure.[108] Its purpose is to inform the public and responsible officials of the environmental consequences of their decisions before they are made. Here, the DEIR asserts that the increase in emissions from the increase in electricity use was estimated based only on the horsepower ("hp") rating of select certain new equipment.[109] According to Dr. Fox, the estimate should be supported with a list of each piece of equipment and its vendor specifications, as it is unclear whether the estimate includes all new equipment.[110] Dr. Fox's analysis shows that the Project's electricity demand calculations in the DEIR are unsupported and may be underestimated.

1-31

The DEIR is inconsistent in its discussion of the recycle gas compressor, stating in one section that the existing recycle gas compressor was modified to "double its capacity by replacing its internals with a larger rotor,"[111] and in another section noting that the Applicant had "reactivated a 200 hp recycle gas compressor"

1-32

[106] *Id.*
[107] *Id.* at 16.
[108] CEQA Guidelines § 15151; *see also Laurel Heights Improvement Association Of San Francisco, Inc., v. The Regents Of The University Of California* (1998) 47 Cal.3d 376, 406.
[109] Fox Comments, p. 17; DEIR, p. 3-35.
[110] Fox Comments, p. 17.
[111] DEIR, p. 2-7.
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when discussing Project emissions.[112] The DEIR fails to mention in the latter statement that the capacity of the recycle gas compressor doubled to 400 hp, not 200 hp.[113] In addition, the DEIR is unclear in its discussion of several new pumps noted by Dr. Fox and whether all of these new pumps are included in DEIR's estimated increase in electrical demand.[114] These pumps include a new ULSD shipping pump, two new pumps for handling jet and diesel blendstocks, and one new pump to create separate facilities for handling jet and diesel fuel.[115] 1-32 cont.

The DEIR concludes that a total increase in electricity demand of 1,035 hp or about 18,623 kilowatt-hours per day (kwh/day), which was converted into an emissions increase using District emission factors.[116] However, Dr. Fox's analysis shows that the District is inconsistent in its approach to this calculation because, on the one hand, the DEIR presents the estimate as though it is the sum of hp ratings for new equipment and, on the other hand, the DEIR reports the same number as the difference between baseline hp and post-Project hp, suggesting it is not simply the sum of hp rating of new equipment.[117] 1-33

According to Dr. Fox, the DEIR does not explain how the pre-Project baseline electricity demand was selected.[118] It is unclear which baseline the District chose, given that it calculates baselines using different methods for several Project components. Furthermore, the DEIR's post-Project demand is unsupported and fails to provide pertinent information to allow the public an adequate review of the DEIR's calculations.[119] 1-34

In addition, Dr. Fox found that the DEIR underestimates the increase in electricity demand by including "only the demand for select new or newly activated equipment and none of the increase in electricity use by existing equipment."[120] However, the Project would increase electricity demand from existing equipment as well, plus any supporting equipment, such as sulfur removal and cooling water 1-35

[112] DEIR, p. 3-35.
[113] Fox Comments, p. 17.
[114] *Id.*, p. 17-18; DEIR, p. 3-35.
[115] DEIR, p. 2-8.
[116] Fox Comments, p. 17; DEIR, p. 3-35.
[117] Fox Comments, p. 17-18; DEIR, Appendix B-5.
[118] Fox Comments, p. 18.
[119] *Id.*
[120] *Id.*
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demand.[121] Dr. Fox also points out that the removal of sulfur would require an increase in hydrotreating, but that issue is only partially addressed in the DEIR. The removal of sulfur requires additional steam, electricity and heat, the generation of which requires the combustion of fuels in heaters, boilers, and turbines, which releases various pollutants. According to Dr. Fox, the DEIR "does not include any increase in emissions from these indirect sources of electrical demand nor from cooling water, but rather only includes the increase in electrical demand due to new equipment required to support Unit 90."[122] 1-35 cont.

Therefore, the DEIR fails as an informational document because it does not provide the public with all necessary information to make an informed assessment of the DEIR and its supporting documents.

F. The DEIR Fails to Mitigate Significant Impacts on Air Quality From NOx Emissions

CEQA requires that "for each significant effect, the EIR must identify specific mitigation measures; where several potential mitigation measures are available, each should be discussed separately, and the reasons for choosing one over the others should be stated."[123] The DEIR states that "[n]o significant air quality impacts have been identified and no mitigation measures are required for the ULSD Project."[124] However, the District does include one mitigation measure, AQ-1, which "contains specific reporting requirements, to ensure that the Refinery operations are consistent with the assumptions upon which the air quality analysis is based."[125] 1-36

Clearly, this measure is wholly inadequate to address the significant impact from NOx emissions revealed by Dr. Fox and discussed in these comments. The DEIR fails to provide any measures that would mitigate the environmental impact from increased NOx emissions to levels below significance. During the initial round of environmental review, the Project proponents decided to install a selective catalytic reduction ("SCR") unit for NOx control on replacement charge heater B-

[121] *Id.*
[122] *Id.*, at 19.
[123] *Sacramento Old City Assn. v. City Council* (1991) 229 Cal.App.3d 1011, 1027; *Lotus v. Department of Transporation, et al.* (2014) 223 Cal.App.4th 645,653.
[124] DEIR, p. 1-13.
[125] *Id.*
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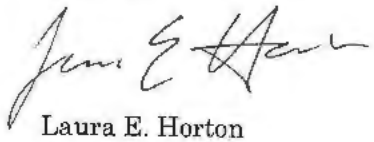
401, along with using low NOx burners.[126] However, the use of low NOx burners and SCR has failed to bring NOx emissions below a level of significance. Therefore, the District must incorporate clear and enforceable mitigation measures to address significant NOx emissions. 1-36 cont.

VI. CONCLUSION

For all of the reasons discussed above, the DEIR for the Project does not meet the requirements of CEQA. It must be thoroughly revised to include an adequate description of the environmental baseline and to provide analysis of, and mitigation for, the Project's significant NOx emissions. This revision will necessarily require that the DEIR be recirculated for public review. Until the DEIR has been revised and recirculated, the District may not lawfully certify the EIR nor approve the Project. 1-37

Sincerely,



Laura E. Horton

LEH:clv

Attachments	
Attachment A	Comments and Attachments, Phyllis Fox
Attachment B	EPA, Emissions Estimation Protocol for Petroleum Refineries (2014)

[126] DEIR, p. 1-3.