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December 5, 2014

By Email and Overnight Mail

Lashun Cross, Principal Planner
Contra Costa County Department of Conservation and Development
30 Muir Road
Martinez, CA 94553
Email: lashun.cross@dcd.cccounty.us

Re: Comments on the Recirculated Draft Environmental Impact Report for the Phillips 66 Propane Recovery Project (SCH No. 2012072046)

Dear Ms. Cross:

We are writing on behalf of Safe Fuel and Energy Resources California ("SAFER California") to comment on the Phillips 66 Propane Recovery Project ("Project") Recirculated Draft Environmental Impact Report ("RDEIR"), prepared by Contra Costa County pursuant to the California Environmental Quality Act ("CEQA").[1] Phillips 66 proposes to recover 14,500 barrels per day of propane and butane from refinery fuel gas at its Rodeo Refinery and to export (by rail) the propane and butane for sale. This would require modifying existing equipment and adding new equipment, including a hydrotreater, fractionation columns, a steam boiler, six propane storage vessels, a loading rack and two rail spurs. B11-1

Based upon our review of the RDEIR, County records, as well as pertinent public records in the possession of other agencies, we conclude that the RDEIR is so inadequate under CEQA that it must be withdrawn. The RDEIR fails to describe and analyze the whole Project because it does not identify the Rodeo Refinery Marine Terminal throughput increase project (both phases), the Santa Maria Rail Spur Project or the Santa Maria Throughput Increase Project as part of this Project. As a result, the RDEIR fails to fully identify and mitigate the Project's potentially significant environmental impacts. In addition, the RDEIR fails to provide a

[1] Pub. Resources Code, §§ 21000 et seq.

sufficiently detailed environmental setting to enable an adequate analysis of significant impacts on air quality, public health and safety and from greenhouse gas emissions. The RDEIR also fails to identify and reduce the Project's potentially significant impacts on air quality, public health and safety, as well the Project's significant climate change impacts. These defects render the RDEIR inadequate as an informational document. The numerous defects in the County's analysis, set forth in greater detail in the following paragraphs, are fatal errors. The County must withdraw the RDEIR and prepare a revised RDEIR which fully complies with CEQA. B11-1

We prepared these comments with the assistance of environmental engineer, Phyllis Fox, Ph.D., PE and air quality expert Petra Pless, D.Env. Dr. Fox's and Dr. Pless' technical comments are attached hereto and submitted in addition to the comments in this letter. Accordingly, the County must address and respond to the comments of Dr. Fox and Dr. Pless separately.

I. INTEREST OF COMMENTORS

SAFER California advocates for safe processes at California refineries to protect the health, safety, standard of life and 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 and other refinery product transport and refining processes poses a substantial threat to the environment, worker health, surrounding communities and the local economy. B11-2

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 (Hancock). 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. Additionally, rail transport of crude oil and other refinery products has been involved in major explosions, causing vast economic damage, significant emissions of air contaminants and carcinogens and, in some cases, severe injuries and fatalities.

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.

B11-2

The members represented by the participants in SAFER California live, work, recreate and raise their families in Contra Costa County, including the town of Rodeo. 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 on the Project 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.

II. LACK OF TIMELY INFORMATION AND POTENTIAL NEED TO SUBMIT FURTHER COMMENTS

The County was required, but failed to make all documents referenced or relied on in the RDEIR available for the duration of the public comment period.[2] Access to these materials was essential to our review and evaluation of the County's findings. Despite our efforts to obtain immediate access to all materials referenced in the RDEIR, the County only granted us access to some of these materials and only two days before the end of the public comment period.

B11-3

The County issued its Revised Notice of Completion of the RDEIR on October 21, 2014. On October 28, 2014, we requested that the County provide immediate access to documents referenced or relied on in the RDEIR. The County provided some of the documents referenced in the RDEIR.

On December 1, 2014, we sent a follow-up request for the remaining documents referenced or relied on in the RDEIR. We also requested an extension of the comment deadline in light of the County's failure to make all documents

B11-4

[2] *See* Pub. Resources Code, § 21092(b)(1); 14 Cal. Code Regs., § 15087(c)(5) ("CEQA Guidelines").

referenced or relied on in the RDEIR available during the whole comment period, as required by CEQA. After some back and forth with County staff, the County provided a few more reference documents.

On December 3, 2014, we reiterated our request for documents referenced or relied on in the RDEIR and our request for an extension of the public comment period to allow an opportunity to review the materials provided by the County. The County denied access to the remaining documents referenced or relied on in the RDEIR and also denied our request for an extension of the comment deadline. Accordingly, we provide these initial comments on the RDEIR and reserve our right to submit supplemental comments on the RDEIR at a future date. B11-4

III. THE RDEIR FAILS TO DESCRIBE AND ANALYZE THE WHOLE PROJECT

CEQA Guidelines section 15378 defines "project" to mean "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment."[3] "The term 'project' refers to the activity which is being approved and which may be subject to several discretionary approvals by governmental agencies. The term project does not mean each separate governmental approval."[4] Courts have explained that a complete project description must "address not only the immediate environmental consequences of going forward with the project, but also all "*reasonably foreseeable consequence[s]* of the initial project."[5] "If a[n] . . . EIR. . . does not adequately apprise all interested parties of the true scope of the project for intelligent weighing of the environmental consequences of the project, informed decisionmaking cannot occur under CEQA and the final EIR is inadequate as a matter of law."[6] B11-5

Moreover, a public agency may not segment a large project into two or more smaller projects in order to mask serious environmental consequences. CEQA prohibits such a "piecemeal" approach and requires review of a project's impacts as a

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[3] CEQA Guidelines §15378.
[4] *Id.* § 15378(c).
[5] *Laurel Heights Improvement Association v. Regents of University of California* (1988) 47 Cal.3d 376, emphasis added; *see also Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 449-50.
[6] *Riverwatch v. Olivenhain Municipal Water Dist.* (2009) 170 Cal.App.4th 1186, 1201.
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whole.[7] CEQA mandates "that environmental considerations do not become submerged by chopping a large project into many little ones – each with a minimal potential impact on the environment – which cumulatively may have disastrous consequences."[8] Before approving a project, a lead agency must assess the environmental impacts of all reasonably foreseeable phases of a project.[9] "The significance of an accurate project description is manifest where," as here, "cumulative environmental impacts may be disguised or minimized by filing numerous, serial applications."[10]

B11-5

A. The Amount of Propane and Butane to be Recovered is Not Consistently Described

The amount of propane and butane to be recovered by the Project is not consistently described. The original DEIR for the Project states that 13,500 bbl/day of propane and butane will be recovered.[11] However, the RDEIR states that 14,500 bbl/day of propane and butane will be recovered.[12] Finally, the draft Bay Area Air Quality Management District ("BAAQMD") engineering analysis for the Project proposes a permit limit of 17,400 bbl/day of propane and/or butane.

B11-6

The amount of propane and butane that will be recovered from the Project affects air quality, greenhouse gas ("GHG") emissions, and hazards impact analyses.[13] Thus, the inconsistent description of the amount of propane and butane that will be recovered makes it impossible to accurately analyze the Project's potentially significant impacts. The County must prepare a revised RDEIR that accurately describes the amount of propane and butane that will be recovered by the Project.

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[7] CEQA Guidelines § 15378(a); *Burbank- Glendale-Pasadena Airport Authority v. Hensler* (1991) 233 Cal.App.3d 577, 592.
[8] *Bozung v. Local Agency Formation Commission* (1975) 13 Cal.3d 263, 283-84; *City of Santee v. County of San Diego* (1989) 214 Cal.App.3d 1438, 1452.
[9] *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 396-397 (EIR held inadequate for failure to assess impacts of second phase of pharmacy school's occupancy of a new medical research facility).
[10] *Arviv Enterprises v. South Valley Area Planning Commission* (2002) 101 Cal.App.4th 1333, 1346.
[11] DEIR, Table 3-2.
[12] RDEIR, Table 3-2.
[13] *See* **Attachment 1**: Comments on Recirculated Draft Environmental Impact Report for the Phillips 66 Propane Recovery Project, Phyllis Fox, Ph.D., PE and Petra Pless, D.Env., December 5, 2014 ("Fox/Pless Comments").
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B. The RDEIR Improperly Segments the Project from Other Related Actions

The California Supreme Court held that an EIR must treat activities as part of the project where the activities at issue are "a reasonably foreseeable consequence of the initial project and the future expansion or action will be significant in that it will likely change the scope or nature of the initial project or its environmental effects."[14]

The Phillips 66 San Francisco Refinery consists of two facilities linked by a 200-mile pipeline.[15] The Santa Maria Refinery is located in Arroyo Grande in San Luis Obispo County, and the Rodeo Refinery is located in Rodeo in the Contra Costa County. Dr. Fox and Dr. Pless explain in their comments that the Santa Maria Refinery mainly processes heavy, high sulfur crude oil and sends semi-refined liquid products to the Rodeo Refinery for converting into finished products.[16]

There are five projects in various stages of the development process at either end of this pipeline that are related and should be described and evaluated as a single project under CEQA. At the Rodeo Refinery, there is (1) the Propane Recovery Project, (2) the Marine Terminal Phase II Throughput Increase Project and (3) the Marine Terminal Phase III Throughput Increase Project. At the Santa Maria Refinery, there is the (4) Santa Maria Throughput Increase Project and (5) the Santa Maria Rail Spur Project. When analyzed together, as required by CEQA, the entire project would result in significant unmitigated project-level and cumulative air quality, global warming, and public health and safety impacts which are not disclosed or are improperly analyzed and/or mitigated in the RDEIR.

B11-7

The RDEIR fails to disclose the link between the Project and the four other directly related projects. The Project will benefit from and rely on these projects because it will receive increased amounts of butane and propane necessary for Project operation. Evidence shows that the current amount of recoverable butane and propane at the Rodeo Refinery is less than the RDEIR's proposed 14,500 bbl/day for the Project (and substantially less than the proposed BAAQMD permit limit of 17,400 bbl/day for the Project).[17] Moreover, Dr. Fox and Dr. Pless explain

[14] *Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal.3d 376, 396.
[15] See Santa Maria Rail Spur Project RDEIR, Fig. 2-2.
[16] Fox/Pless Comments, p. 2.
[17] *Id.*, pp. 9-12.
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that the current crude supply to the Rodeo and Santa Maria refineries from local California sources is declining and is more expensive than "cost-advantaged" crudes such as tar sands and Bakken crude.[18] Dr. Fox and Dr. Pless further explain that the crudes that will replace these declining and costly California crudes are crudes that are rich in propane and butane, including tar sands crudes at the Santa Maria Refinery and Bakken crudes at the Rodeo Refinery. The Santa Maria Rail Spur Project, the Santa Maria Throughput Increase Project, and the Marine Terminal Phase II and Phase III Throughput Increase Projects will enable the import of these cost-advantaged crudes to the Santa Maria Refinery and the Rodeo Refinery. In turn, the propane and butane from these crudes will be will be recovered by the Project.[19]

To further describe the connection between these projects, Dr. Fox and Dr. Pless explain that the Santa Maria Throughput Increase Project was proposed by Phillips 66 to increase the maximum limit of crude oil throughput at the Santa Maria Refinery by 10 percent.[20] The Santa Maria Throughput Increase Project would increase the volume of crude oil delivered to the Santa Maria Refinery and increase the volume of products leaving the Santa Maria Refinery by pipeline to the Rodeo Refinery (among other changes).[21]

B11-7

Further, the Santa Maria Throughput Increase Project is dependent on the Santa Maria Rail Spur Project because a throughput increase cannot be implemented at the Santa Maria Refinery unless Phillips 66 can import crude to offset declining local crude supplies.[22] Moreover, the Propane Recovery Project cannot be implemented but for the Rail Spur Extension Project and the Santa Maria Throughput Increase Project because the Propane Recovery Project depends on increased amounts of butane and propane to be recovered. Thus, the Santa Maria Throughput Increase Project, the Santa Maria Rail Spur Project and the Propane Recovery Project are all inextricably linked.[23]

Dr. Fox and Dr. Pless also explain that the Marine Terminal Phase II and III Throughput Increase Projects are essential to carry out the Project because they allow the Rodeo Refinery to import up to 77 percent of its crude capacity by marine

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[18] Fox/Pless Comments, pp. 2-5.
[19] *Id.*, p. 6.
[20] Phillips Santa Maria Refinery, Throughput Increase Project FEIR, Nov. 2012, at p. ES-1.
[21] *Id.*, at p. ES-4.
[22] Fox/Pless Comments, pp. 5-7.
[23] *Id.*

vessel, facilitating the import of Bakken crude from Phillip 66's west coast rail-to-marine terminal in Clatskanie, Oregon.[24] Bakken crudes contain high concentrations of propane and butane, which would be recovered by the Project.[25]

In short, CEQA requires the County to analyze the whole of the project, including the Propane Recovery Project, the Marine Terminal Phase II and Phase III Throughput Increase Projects, the Santa Maria Throughput Increase Project and the Santa Maria Rail Spur Project, rather than analyzing each individual proposal as unrelated and distinct projects (which they are not). B11-7

IV. THE RDEIR'S DESCRIPTION OF THE ENVIRONMENTAL SETTING IS INADEQUATE

CEQA requires the lead agency to include a description of the physical environmental conditions in the vicinity of a project as they exist at the time environmental review commences.[26] The description of the environmental setting constitutes the baseline physical conditions by which a lead agency may assess the significance of a project's impacts. The EIR must also describe the existing environmental setting in sufficient detail to enable a proper analysis of project impacts.[27]

Describing the environmental setting accurately and completely for each environmental condition in the vicinity of the project is critical to an accurate, meaningful evaluation of environmental impacts. The courts are clear that, "[b]efore the impacts of a Project can be assessed and mitigation measures considered, an [environmental review document] must describe the existing environment."[28] It is: B11-8

> a central concept of CEQA, widely accepted by the courts, that the significance of a Project's impacts cannot be measured unless the DEIR first establishes the actual physical conditions on the property. In

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[24] *Id.*, pp. 7-8.
[25] *Id.*
[26] CEQA Guidelines, § 15125(a); *see* also *Communities for A Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 321.
[27] *Galante Vineyards v. Monterey Peninsula Water Management District* (1997) 60 Cal.App.4th 1109, 1121-22.
[28] *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 952.
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other words, baseline determination is the first rather than the last step in the environmental review process.[29]

Additionally, it is axiomatic that the baseline information on which an EIR relies must constitute substantial evidence.[30] The CEQA Guidelines define "substantial evidence" as "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion."[31] "Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts." "[U]nsubstantiated opinion or narrative [and] evidence which is clearly inaccurate or erroneous . . . is not substantial evidence."[32] B11-8

The RDEIR fails to establish the appropriate environmental setting for air quality, health risks and hazards impacts. These inadequacies are described in detail in the sections below. The County must revise the RDEIR to include an adequate description of the environmental setting. Absent this information, the County cannot conclude that the Project's potentially significant impacts have been reduced to a less than significant level.

V. THE RDEIR FAILS TO IDENTIFY AND REDUCE THE PROJECT'S SIGNIFICANT AIR QUALITY IMPACTS

In this section, we address the RDEIR's analysis of the Project's environmental impacts as discussed in the RDEIR. Accordingly, the following comments analyze the potentially significant impacts that would result from the Project alone. The potentially significant impacts discussed here would be more severe if all Project components – the Santa Maria Rail Spur Extension Project, the Santa Maria Throughput Increase Project and the Marine Terminal Phase II and Phase III Throughput Increase Projects were analyzed together with the Propane Recovery Project, as required by CEQA. B11-9

[29] *Save Our Peninsula Comm. v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 125.
[30] *See* CEQA Guidelines §15063(a)(3) ("An initial study may rely upon expert opinion supported by facts, technical studies or other substantial evidence to document its findings.").
[31] CEQA Guidelines, §15384.
[32] Pub. Resources Code, § 21082.2(c).
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A. The RDEIR Substantially Underestimates the Project's Operational Emissions

The RDEIR estimates daily and annual Project operational emissions for nitrogen oxides ("NOx"), sulfur dioxide ("SO2"), particulate matter ("PM10 and PM2.5"), and reactive organic gases ("ROG").[33] The RDEIR compares the emissions estimates to the BAAQMD's daily and annual CEQA significance thresholds for NOx, PM10, PM2.5, and ROG. Dr. Fox and Dr Pless explain that there are several inadequacies with the RDEIR's analysis.

B11-10

As an initial matter, the RDEIR provides no significance threshold for SO2 and omits carbon monoxide ("CO") from the analysis completely. These omissions alone render the RDEIR inadequate.

Further, the emissions estimates in the RDEIR are unsupported and underestimated. Specifically the RDEIR underestimates locomotive emissions and NOx emission reductions from shutting down heater B-401 are incorrectly used to mitigate the Project's significant NOx emission increases. When the errors in the emission calculations are corrected, the resulting increases in daily and annual NOx and ROG emissions exceed CEQA significance thresholds.[34] These are significant unmitigated air quality impacts that were not identified in the RDEIR.

1. The RDEIR's Emissions Estimating Methodology is Unsupported

As an initial matter, the RDEIR's methodology for determining the Project's increased emissions is incorrect and unsupported. Dr. Fox and Dr. Pless provide the correct and standard way to estimate the Project's increased emissions – the sum of the difference between the Project's potential to emit and the average baseline emissions.[35] Dr. Fox and Dr. Pless explain that the RDEIR does not follow this standard approach. Instead, the RDEIR bases its emissions calculations on emissions increases and does not disclose the assumed baseline.[36] As Dr. Fox and Dr. Pless state, the County's approach "misses the point. The increases can only be

B11-11

[33] RDEIR, Tables 4.3-6 and 4.1-8.
[34] Fox/Pless Comments, p. 13.
[35] *Id.*
[36] *Id.*, p. 14; see also **Attachment 2**: Email from Lashun Cross to Rachael Koss re Marine Terminal Appendix C, December 4, 2014 ("Detailed records of the Refineries daily current baseline would not change the maximum increase and were not requested by the County. The impact(s) from the Project is not dependent on what the baseline is but the increase.").
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determined by following the calculation in Equation (1) [Project Increase in Emissions = Project Potential to Emit – Baseline]."[37]

B11-11

2. The RDEIR Underestimates the Project's Increase in Locomotive Emissions

Dr. Fox and Dr. Pless explain that locomotive emissions depend on the weight of the load that is carried, which is determined by the number of cars that are pulled and their contents.[38] Thus, the Project's increase in locomotive emissions depends on the increase in the number of rail cars that would export propane and butane from the Refinery, compared to baseline exports. The increase in the number of rail cars, in turn, depends on the increase in the amount of propane and butane that is exported after the Project is built, compared to the annual average of propane and butane exported during the baseline years.

B11-12

The RDEIR estimates that the Project's locomotive NOx emissions will increase 10.18 tons/year based on an increase from 8 to 20 rail cars per day.[39] The RDEIR provides no support for its assumptions or conclusions. Notably, the RDEIR does not provide the annual average amount of propane and butane recovered in baseline years. Moreover, Dr. Fox and Dr. Pless determined that the Project would increase locomotive NOx emissions by 13.85 tons/year, which is substantially more than the RDEIR's estimate of 10.18 tons/year, and which results in a significant impact.[40] Dr. Fox and Dr. Pless based their calculations on an increase in the number of rail cars from an annual average of four per day to a maximum of 24 per day, which is supported by substantial evidence in the record.[41] Thus, the RDEIR's conclusions regarding the Project's locomotive NOx emissions are unsupported and underestimated.

a. *The RDEIR Inflates the Baseline for Locomotive Emissions*

B11-13

The RDEIR presents the average annual baseline emissions from locomotives in Table 4.1-5. Dr. Fox and Dr. Pless explain that these baseline emissions are substantially overestimated because they rely on an incorrect assumption of the

[37] Fox/Pless Comments, p. 14.
[38] *Id.*, p. 15.
[39] RDEIR, Appx. B, pdf 6.
[40] Fox/Pless Comments, p. 19.
[41] *Id.*, p. 18.
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number of rail cars (eight) used to export propane and butane during the baseline years.[42] The RDEIR provides no support for the assumption that the baseline number of rail cars is eight. In fact, the BAAQMD application for the Project's Authority to Construct states "[i]n the summer, 8 to 12 railcars (up to 9000 barrels) of butane are typically loaded on any given day. In the winter, 3 to 4 railcars (2,300 to 3,000 bbl) are loaded per month. ***The average number of railcars loaded for the past three years is 4 rail cars per day.***"[43] Thus, the proper baseline is four – the average number of railcars for the past three years – not eight. This is confirmed by other statements in the RDEIR. For example, the RDEIR states "[o]n any given day, the maximum number of additional railcars could increase by about 20, resulting in a total of 24 railcars when added to the baseline."[44]

B11-13

The record does not provide the average annual butane export volumes for the baseline period. However, Dr. Fox and Dr. Pless calculated the volumes based on the annual average baseline number of rail cars (four) and a capacity for each rail car of 700 to 750 barrels.[45] Dr. Fox's and Dr. Pless' calculations show that the annual average baseline butane exports are 1,058,500 bbl/year (or 102,251 tons/year).[46] From there, Dr. Fox and Dr. Pless calculated the Project's baseline locomotive emissions for NOx, PM10, PM2.5 and ROG. Dr. Fox and Dr. Pless provide the results of their calculations in Table 2 of their comments, which show that that *the RDEIR overestimates the Project's annual average baseline locomotive emissions by a factor of two.*[47] As a result, the RDEIR significantly underestimates the Project's increase in locomotive emissions (see below).

b. The RDEIR Underestimates the Annual Average Locomotive Emissions

B11-14

The RDEIR provides that the annual increase in the Project's locomotive emissions is based on an increase in propane and butane exports of 276,599 tons/year (3,000,317 bbl/year) and an increase in the number of rail cars of 12 per day on an annual average basis.[48] Based on information in the record, Dr. Fox and

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[42] *Id.*, p. 14.
[43] ERM, Rodeo Propane Recovery Project, BAAQMD Authority to Construct and Significant Revision to Major Facility Review Permit Application, February 2013 (emphasis added).
[44] RDEIR, Appx. B, pdf 30, 146.
[45] Fox/Pless Comments, pp. 16, citing RDEIR, p. 3-17, fn. 7.
[46] *Id.*.
[47] *Id.*
[48] RDEIR, Appx. B.
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Dr. Pless determined that the Project actually allows a greater increase in propane and butane exports over the baseline of up to 390,332 tons/year (or 4,234,000 bbl/year), which results in an annual average increase in the number of rail cars of about 16 per day, four more than assumed in the RDEIR.[49] According to Dr. Fox and Dr. Pless, the RDEIR also incorrectly assumes that the switch locomotive would operate on site for the same amount of time per day as for the baseline (one hour), even though the number of rail cars that will need to be moved by the switch locomotive to accommodate the increased exports will increase by a factor of five.[50] As a result, Dr. Fox and Dr. Pless conclude that the RDEIR "substantially underestimates the increase in annual average locomotive emissions."[51] Dr. Fox and Dr. Pless provide a detailed discussion of the RDEIR's errors and provides revised emission calculations and estimates.[52] Dr. Fox and Dr. Pless find that the Project will increase annual locomotive emissions as follows:

B11-14

- **NOx**: 13.85 tons/year (a difference of 3.67 tons/year compared to the RDEIR's increase in annual locomotive NOx emissions);
- **PM10**: 0.35 tons/year (a difference of 0.09 tons/year compared to the RDEIR's increase in annual locomotive PM10 emissions);
- **PM2.5**: 0.34 tons/year (a difference of 0.09 tons/year compared to the RDEIR's increase in annual locomotive PM2.5 emissions); and
- **ROG**: 0.67 tons/year (a difference of 0.18 tons/year compared to the RDEIR's increase in annual locomotive ROG emissions).[53]

Annual Project increases in locomotive NOx emissions will be substantially more than estimated by the RDEIR.

c. The RDEIR Underestimates the Daily Average Locomotive Emissions

The RDEIR underestimates the Project's daily average locomotive emissions. For daily emissions estimates, the RDEIR assumes a Project increase of 8 additional rail cars per day over a baseline of 16 rail cars per day.[54] According to Dr. Fox and Dr. Pless, this assumption substantially underestimates the potential

[49] Fox/Pless Comments, p. 18.
[50] *Id.*
[51] *Id.*
[52] *Id.*.
[53] *Id.*, p. 19.
[54] *Id.*
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increase in daily propane and butane exports and the additional daily number of rail cars. Therefore, the RDEIR substantially underestimates the Project's increase in daily average locomotive emissions.[55]

Dr. Fox and Dr. Pless explain that, based on Phillip 66's Authority to Construct application for the Project and the RDEIR, the Project will result in a *maximum daily increase of 24 rail cars per day*.[56] Based on the daily increase of 24 rails per day, Dr. Fox and Dr. Pless prepared revised daily emission estimates for the Project. Dr. Fox and Dr. Pless found that the Project will increase daily locomotive emissions as follows:

- **NOx**: 94.37 lbs/day (a difference of 15.4 lbs/day compared to the RDEIR's increase in annual locomotive NOx emissions);
- **PM10**: 2.40 lbs/day (a difference of 0.4 lbs/day compared to the RDEIR's increase in annual locomotive PM10 emissions);
- **PM2.5**: 2.31 lbs/day (a difference of 0.4 lbs/day compared to the RDEIR's increase in annual locomotive PM2.5 emissions); and
- **ROG**: 4.53 lbs/day (a difference of 0.7 lbs/day compared to the RDEIR's increase in annual locomotive ROG emissions).[57]

B11-14

Dr. Fox's and Dr. Pless' calculations show that the Project's locomotive emissions will tip the Project's NOx emissions over the BAAQMD's significance threshold of 54 lbs/day. Notably, Dr. Fox and Dr. Pless explain that the Project's emissions will likely be even greater than shown in their calculations because they assumed far less than the maximum load for each rail car (approximately 715 bbl/rail car vs. 750 bbl/rail car) and their calculations do not account for increased operations of the switch locomotive on site or emissions outside of the BAAQMD (see below).[58]

d. The RDEIR Incorrectly Excludes Locomotive Emissions Outside of the BAAQMD

The RDEIR also underestimates the Project's locomotive emissions because it excludes emissions outside of the BAAQMD. Dr. Fox and Dr. Pless explain that the locomotives used to transport recovered propane and butane from the Project are a

[55] *Id.*
[56] *Id.*, p. 20.
[57] *Id.*, p. 21.
[58] *Id.*, pp. 21-22.
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major source of the Project's NOx emissions and contribute to the Project's ROG emissions.[59] The RDEIR underestimates these emissions because it fails to account for emissions released outside the boundary of the BAAQMD. Not only does CEQA require the County to consider all reasonably foreseeable indirect and direct emissions impacts from the Project, but it is common practice to base criteria pollutant emissions on the total track length within California. Other recent CEQA documents involving train transport of petroleum products include locomotive emissions for the entire distance travelled within California, from the Stateline to the project site (including the Phillips 66 Santa Maria Rail Spur Project RDEIR and the Valero Benicia Crude by Rail Project DEIR.[60]

The County's approach significantly underestimates total criteria pollutant emissions. According to Dr. Fox and Dr. Pless, had the County based its analysis on emissions released from outside of the BAAQMD (like it did for GHG emissions), the Project would result in a net increase in daily NOx emissions of 580 lbs/day.[61] These emissions exceed the BAAQMD's significance threshold for NOx of 54 lbs/day by a factor of ten. Similarly, even assuming the invalid NOx offsets (described below), the Project's net increase in annual NOx emissions is 68 tons/year.[62] This exceeds the BAAQMD's annual significance threshold of 10 tons/year by a factor of almost seven.[63] Thus, daily and annual NOx emissions from the Project based on the Statewide travel distance of locomotives result in significant air quality impacts that were not disclosed or mitigated in the RDEIR.

B11-14

For ROG emissions, the increase in daily emissions from all Project sources (including emissions released from outside the BAAQMD) is 70.5 lbs/day, which exceeds the BAAQMD's daily significance threshold for ROG of 54 lbs/day by 30 percent.[64] Similarly, the increase in annual ROG emissions from all Project sources is 11.5 tons/year, which exceeds the BAAQMD's annual significance threshold for ROG of 10 tons/year.[65] Thus, daily and annual ROG emissions from the Project based on the Statewide travel distance of locomotives result in significant air quality impacts that were not disclosed or mitigated in the RDEIR.

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[59] *Id.*, pp. 22-25.
[60] *Id.*
[61] *Id.*
[62] *Id.*
[63] *Id.*
[64] *Id.*
[65] *Id.*

Notably, Dr. Fox and Dr. Pless explain that even if Project emissions are based only on the track length within the BAAQMD, rather than the entire State, the Project would still exceed the NOx daily significance threshold if the actual Union Pacific track length going south out of the District (90 miles) was used in the calculations, rather than the average of the Union Pacific and BNSF track lengths (67 miles).[66] The distance to the eastern boundary of the District is 44 miles and 90 miles to the southern boundary. The 67 miles used in the RDEIR's line haul emission calculations is the average of these two. However, there is no evidence that the Project would use the BNSF track. Rather, 100 percent of the trains for the Project could use the Union Pacific track. In that case, the daily NOx emission increase would be 57 lbs/day (even assuming the invalid heater B-401 emission offsets), which exceeds the BAAQMD's significance threshold for NOx of 54 lbs/day.[67] B11-14

3. The RDEIR Contains Invalid NOx Emission Reductions for Heater B-401

The RDEIR proposes mitigation measure APM-1 to offset significant daily and annual NOx emission increases.[68] APM-1 provides:

> Phillips 66 shall use the remaining unused NOx *emissions credits* associated with the decommissioned B-401 process heater in Unit 240 to offset significant NOx emissions related to the proposed Propane Recovery Project. Prior to operation of the Project, Phillips 66 shall provide documentation to the Department of Conservation and Development that documents that Phillips 66 has not applied for or used any additional NOx credits associated with the Unit B-401 process heater shutdown.[69] B11-15

Dr. Fox and Dr. Pless explain that these reductions are invalid as CEQA mitigation.

First, the shutdown of heater B-401 occurred in 2011.[70] Emission reductions that occurred in the past are not valid CEQA mitigation for the Project. Rather, the reductions are part of the baseline and are not available to offset the Project's NOx increases. Without the reductions, the RDEIR's estimated increase for daily (99.2

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[66] *Id.*
[67] *Id.*
[68] RDEIR, pp. 3-43, 4.1-22, 23; Tables 4.1- 4.1-11.
[69] RDEIR, pp. 3-43, 4.1-22 (emphasis added).
[70] Fox/Pless Comments, p. 26.

lb/day) and annual (13.9 tons/year) NOx emissions exceed CEQA significance thresholds (54 lb/day and 10 tons/year, respectively) and are significant unmitigated impacts of the Project.

Second, the heater supplied heat to Phillip 66's hydrogen plant. This hydrogen plant, unit S-464, was shutdown as of October 12, 2011. However, the demand for hydrogen has not been reduced; rather, an off-site source now supplies hydrogen. Thus, NOx emissions would still increase, just elsewhere in the same air basin (the Air Liquide Hydrogen Plant (Site B7419), which is adjacent to the Rodeo Refinery). Therefore, for purposes of CEQA, the shutdown of the heater does not mitigate the Project's increased NOx emissions.[71]

Third, there is no basis for the RDEIR's use of 10.8 tons/year of NOx reductions from the heater shutdown for the Project's annual NOx emission calculations. The RDEIR provides no support for 10.8 tons/year. Further, Dr. Fox and Dr. Pless determined that the claimed reductions do not actually exist. Rather, the reductions were "created by shifting baseline dates and constitute double-counting." Dr. Fox and Dr. Pless provide a detailed account of why the reductions cannot be claimed. In short, the NOx emission reduction credits from the shutdown of heater B-401 were fully used by the Marine Terminal Offload Limit Revision Project (also called the Marine Terminal Phase II Throughput Increase Project). Even assuming actual or contemporaneous reductions (rather than emission credits) are available (which they are not), only 4.54 tons/year exist (not the purported 10.8 tons/year). Thus, the Project will result in a net increase in NOx emissions of 13.1 tons/year, which exceeds BAAQMD's annual significance threshold of 10 tons/year.[72]

B11-15

Fourth, like annual NOx reductions, there is no basis for the RDEIR's use of 62.3 lbs/day of NOx reductions from the heater shutdown for the Project's daily NOx emission calculations. The RDEIR provides no support for 62.3 lbs/day. Further, Dr. Fox and Dr. Pless determined that there are no daily NOx reductions available to offset Project emissions because the reductions were used for the Marine Terminal Offload Limit Revision Project. Thus, the Project's daily NOx emissions

[71] *Id.*

[72] *Id.*, pp. 27-30 (Note, the actual increase in NOx emissions is actually much greater because the RDEIR excludes locomotive emissions emitted outside of the BAAQMD).

(99.4 lbs/day) exceed the BAAQMD's CEQA significance threshold of 54 lbs/day. This is a significant unmitigated impact.[73]

B11-15

4. The RDEIR Fails to Identify Emissions from Other Sources

The Project will increase the emissions from other existing sources required to support the Project. Some of these were identified in Dr. Fox's previous comments on the Project DEIR and in the BAAQMD's March 12, 2014 comments on the Project. These include:

- An additional 135 tons/year of sulfur will be recovered at the Sulfur Recovery unit, which includes several emission sources. This will increase emissions of NOx, CO, ROG, H_2S, ammonia, sulfuric acid mist, and PM10; and
- The Air Liquid Hydrogen Plant will supply hydrogen to the new hydrotreater. This plant includes several sources of emissions including a hydrogen furnace, flare and cooling tower, which will emit additional ROG, NOx, CO, PM10, SO_2, SOx, and ammonia.[74]

B11-16

In response to these comments, the County admits to increases from the Sulfur Recovery Unit, but asserts that they "will not be discernible post-project" and calls them "speculative."[75] The County provides no support their statements. Dr. Fox and Dr. Pless explain that Phillips 66 monitors and reports its emissions from this unit to the BAAQMD and, thus, can calculate the baseline emissions. Further, according to Dr. Fox and Dr. Pless, Phillips 66 knows the post-Project increase, which can be determined from equipment design.[76] Thus, estimating increased emissions is not speculative. Moreover, without conducting the emission calculation or providing the baseline and post-project emissions for the record, the County lacks any evidence to support its assertion that emission increases will not be discernible. Dr. Fox and Dr. Pless provide that even "[s]mall increases are important as Project emissions are close to significance thresholds."[77]

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[73] *Id.*
[74] *Id.*, pp. 33-34.
[75] *Id.*, citing Contra Costa County, Responses to BAAQMD Comments of March 14, 2014, March 21, 2014, p. 1 of 5.
[76] *Id.*
[77] *Id.*

With respect to the Hydrogen Plant, the County concedes an increase, but fails to include the increase in the RDEIR. The County estimates, again without any support in the record, that if hydrogen use increased by 5 mmscd, "[c]riteria pollutant emission increases would all be less than 1.7 tpd [tons/day], ROG would be 0.6 tpy [tons/year], and GHG emissions would be approximately 43,000 MT/yr."[78] According to Dr. Fox and Dr. Pless, if NOx emissions increased 1.7 tons/year, the 10 tons/year significance threshold for NOx would be exceeded (when the offset credit error discussed above is corrected.)[79] Further, the resulting increase in GHG emissions is nearly big enough to offset the County's claimed Project decrease in GHG emissions of -43,603 MT/year.[80] The additional GHG increase from increased operation of the combustion sources in the Sulfur Recovery Unit, which were not disclosed by the County, would likely erase the claimed GHG reduction.[81] Thus, the County's statements are unconvincing. B11-16

The increase in emissions from operation of all existing sources to support the Project must be disclosed in a revised RDEIR and included in revised emission estimates.

VI. THE RDEIR FAILS TO IDENTIFY AND REDUCE THE PROJECT'S SIGNIFICANT GREENHOUSE GAS EMISSIONS IMPACTS

The RDEIR states that the Project would decrease GHG emissions by 43,603 metric tons per year ("MT/year").[82] The RDEIR assumes that increases in GHG emissions from the Project's new boiler (65,091 MT/year), additional natural gas combustion (592,792 MT/year), locomotive and other emissions (5,370 MT/year) and other miscellaneous sources (7,372 MT/year) are offset by removing 14,500 bbl/day of butane and propane from the fuel gas system and replacing it with natural gas, which emits less GHG (-708,858 MT/year).[83] B11-17

Dr. Fox and Dr. Pless explain that the RDEIR takes credit for reducing GHG emissions by removing propane and butane from the refinery fuel gas but fails to include the resulting increase in GHG (and other criteria pollutant) emissions when

[78] *Id.*, citing Contra Costa County, Responses to BAAQMD Comments of March 14, 2014, March 21, 2014, p. 1 of 5.
[79] *Id.*
[80] RDEIR, Table 4.5-3.
[81] Fox/Pless Comments, p. 33.
[82] RDEIR, Table 4.5-3.
[83] Fox/Pless Comments, p. 30.
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this propane and butane is used elsewhere.[84] The County's approach violates CEQA. If the Project is the root of GHG emissions, no matter where they are released, they must be accounted for when determining the Project's impacts. This is what CEQA calls "indirect" impacts.

The BAAQMD agrees. In a comment letter to the County regarding the Project, the District stated:

> The refinery currently extracts butane for commercial sale and expects to recover more butane and begin extracting propane as a result of implementing this project. Both are widely used as transportation fuels, for space heating, and a variety of other processes that involve combustion. ***An analysis that demonstrates whether GHG emissions will increase or decrease that also considers the potential uses of commercial products is recommended.*** This may ***include estimating the percentage of emissions from butane used for combustion or other manufacturing*** based on existing commercial sales. An evaluation of possible uses of propane besides combustion in which to demonstrate an emissions reduction is also highly recommended.[85]

B11-17

The RDEIR ignores the BAAQMD's comment and, instead, argues, without any evidence, that propane could replace other higher emitting fuels, such as coal, home heating oil, fuel oil, diesel, kerosene, gasoline, and ethanol.[86] However, Dr. Fox and Dr. Pless explain that these fuels are not widely used for heating within California.[87] Further, the RDEIR contains no evidence that propane would be shipped outside of California.

The County further argues that it does not need to consider emissions from the use of the recovered butane and propane because Phillips 66 "cannot be certain how the propane and butane it would manufacture would ultimately be used; therefore, quantification of the associated net GHG emissions would be speculative

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[84] *Id.*
[85] *Id.*, pp. 30-31, citing BAAQMD Comment Letter, March 12, 2014, pp. 4- 5, Comment 6 (emphasis added).
[86] RDEIR, p. 4.5-13.
[87] Fox/Pless Comments, p. 31.
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and inclusion of such information in an EIR is precluded by CEQA Guidelines §15145."[88] Once again, the County is wrong.

Dr. Fox and Dr. Pless provide ample evidence that Phillips 66 knows how its propane and butane products are currently used.[89] Thus, it is easy to predict the future use of the same products, and the associated GHG emissions are far from speculative. Therefore, the County must estimate the Project's increase in GHG emissions from expanding the current uses of propane and butane. These are reasonably foreseeable indirect impacts of the Project and must be evaluated.[90] B11-17

Dr. Fox and Dr. Pless conservatively estimate the increase in GHG emissions from combusting only 1,000 bbl/day of propane in boilers within California. Their calculations indicate that the resulting increase in GHG emissions is 86,134 MT/year.[91] When this estimate is included in the total net annual Project operational GHG emissions, the Project results in a net increase in GHG emissions of 42,531 MT/year.[92] This exceeds the CEQA significance threshold of 10,000 MT/year and is a significant unmitigated impact.

VII. THE RDEIR FAILS TO IDENTIFY AND REDUCE THE PROJECT'S SIGNIFICANT HEALTH RISKS FROM THE PROJECT'S OPERATIONAL EMISSIONS

The RDEIR states that the Project will not result in significant health risk impacts from Project operational emissions. According to Dr. Fox and Dr. Pless, the RDEIR's conclusion is unsupported and based on substantially flawed estimates. In addition, according to Dr. Fox and Dr. Pless, the RDEIR's health risk assessment is methodologically flawed.[93] B11-18

First, the health risk assessment fails to identify the Point of Maximum Impact and only shows results for the Maximum Exposed Individual Receptor, residences near the Refinery, and the Maximum Exposed Individual Worker.

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[88] RDEIR, p. 4.5-13.
[89] Fox/Pless Comments, pp. 31-33.
[90] CEQA Guidelines §§15064(d)(3), 15358(a)(2).
[91] Fox/Pless Comments, p. 33.
[92] *Id.*
[93] *Id.*, p. 44.
3105-015cv

Second, the RDEIR's health risk assessment incorrectly relies on annual average toxic air contaminant ("TAC") emissions to determine health risks. Dr. Fox and Dr. Pless explain that acute health risks occur after exposure to TACs for short periods (from one to 24 hours). Thus, the RDEIR underestimates acute health risks, which must be based on short-term, not annual, average emissions.[94]

Third, the RDEIR states that the health risk assessment conservatively models 100 percent of locomotive emissions under load along 2.16 miles of the southern route (from the Refinery towards the Richmond Rail Yard) and 100 percent of locomotive emissions under load along 3.2 miles of the northern route (from the Refinery towards the Roseville Rail Yard).[95] Yet, the files provided by the County to support the RDEIR only include modeling along the southern route, not along the northern route. Thus, the health risk assessment underestimates locomotive emissions.

B11-18

Fourth, the health risk assessment completely fails to account for idling emissions from operation of the on-site switching locomotive. According to Dr. Fox and Dr. Pless, due to its location, the switching locomotive may contribute to substantial health risks at nearby receptors.[96]

Fifth, the RDEIR fails to acknowledge that the Project would result in increased idling of haul locomotives on-site or nearby. Thus, the health risk assessment (and the RDEIR's emissions estimates) fails to account for the associated emissions.[97]

Sixth, as discussed above, the RDEIR substantially underestimates the annual propane/butane exports and number of rail cars loaded on an annual average basis. Consequently, the RDEIR underestimates locomotive emissions. Therefore, the RDEIR's estimate of incremental cancer risks from the Project's increases in locomotive diesel particulate matter emissions is also underestimated. Dr. Fox and Dr. Pless calculated the Project's incremental cancer risks from the Project's increases in locomotive diesel particulate matter emissions to be 2.31 in one million, substantially more than the 1.7 in one million stated in the RDEIR.[98]

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[94] *Id.*
[95] RDEIR, Appx. B, p. B-156.
[96] Fox/Pless Comments, p. 44.
[97] *Id.*, p. 45.
[98] *Id.*
3105-015cv

Seventh, the RDEIR's health risk assessment fails to account for cancer risks associated with increased emissions of benzene due to a switch to Bakken crudes, which contain considerably higher amounts of benzene than the baseline crude slate.[99]

Eighth, for cancer risks from existing sources at the Rodeo Refinery, the RDEIR's cumulative health risk assessment relies on a facility-wide health risk assessment previously conducted for purposes of demonstrating compliance with AB2588, the Air Toxics "Hot Spots" Program. AB2588 does not address mobile source emissions or exempt sources. Thus, health risks associated with existing locomotive and other mobile source emissions at the Refinery are not accounted for.

Finally, the RDEIR's estimates of PM2.5 concentrations from Project emission increases in locomotive emissions suffer from the same problems as described above for criteria pollutant and diesel particulate emissions. Dr. Fox and Dr. Pless provide revised PM2.5 concentrations for these sources: 0.052 $\mu g/m^3$, an increase of 0.010 $\mu g/m^3$. When added to the RDEIR's estimate for PM2.5 concentrations from cumulative sources of 0.739 $\mu g/m^3$, this increase brings total PM2.5 concentrations to 0.749 $\mu g/m^3$ (when rounded up, meets the 0.8 $\mu g/m^3$ BAAQMD significance threshold). Further, the RDEIR's emission estimates for the Project do not account for fugitive dust PM2.5 emissions associated with locomotive and other mobile source travel. Finally, as discussed above, the RDEIR's health risk assessment for existing sources at the Rodeo Refinery does not account for PM2.5 emissions from mobile or exempt sources. According to Dr. Fox and Dr. Pless, when all of these issues are addressed, PM2.5 concentrations will exceed the BAAQMD's significance threshold for this pollutant by 0.8 $\mu g/m^3$.[100] The RDEIR does not identify this significant impact. B11-18

VIII. THE RDEIR FAILS TO IDENTIFY AND REDUCE THE PROJECT'S SIGNIFICANT CUMULATIVE IMPACTS

An EIR must disclose a Project's significant cumulative impacts.[101] A legally adequate cumulative impact analysis views a particular project in conjunction with other related past, present, and reasonably foreseeable future projects whose B11-19

[99] *Id.*
[100] *Id.*, p. 46.
[101] CEQA Guidelines § 15130(a).
3105-015cv

impacts might compound or interrelate with those of the project at hand. "Cumulative impacts can result from individually minor but collectively significant projects taking place over time."[102] A project has a significant cumulative effect if it has an impact that is individually limited but "cumulatively considerable."[103]

"Cumulatively considerable" is defined as "the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."[104] Cumulative impact analyses are necessary because "environmental damage often occurs incrementally from a variety of small sources [that] appear insignificant when considered individually, but assume threatening dimensions when considered collectively with other sources with which they interact."[105] As discussed below, the RDEIR ignores CEQA's requirements and concludes that those Project's impacts that are not individually significant cannot be cumulatively significant. The RDEIR is patently wrong. B11-19

A cumulative impact analysis must first determine if baseline cumulative impacts (*i.e.*, impacts from all existing sources at the start of review) are significant. Then, it must determine whether a project's impacts taken alone are significant. Finally, it must determine whether a project's contribution to the baseline plus reasonably anticipated future projects is "cumulatively considerable" (*i.e.*, significant when considered in conjunction with other past, present and reasonably foreseeable projects).[106] The RDEIR skips one or more of these key steps, yet concludes that all cumulative impacts are insignificant.

A. The RDEIR's Cumulative Project List Incomplete

A cumulative impact analysis must be based on a complete list of all reasonably foreseeable potential projects. The RDEIR includes a list of "potential projects for cumulative effects evaluations."[107] This list is incomplete. Thus, the RDEIR's conclusions regarding cumulative impacts are invalid. B11-20

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[102] *Id.* § 15355(b).
[103] *Id.* §§ 15065(a)(3), 15130(a).
[104] *Id.* §15065(a)(3).
[105] *Communities for a Better Env't v. Cal. Res. Agency* (2002) 103 Cal.App.4th 98, 114.
[106] CEQA Guidelines § 15064(h)(1).
[107] RDEIR, Table 5-1.
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The list fails to include the four projects that are inextricably tied to the Project (described above): the Marine Terminal Phase II and Phase III Throughput Increase Projects,[108] the Santa Maria Throughput Increase Project and the Santa Maria Rail Spur Project. The omission of the Marine Terminal Phase II and Phase III Throughput Increase Projects is especially egregious since they are located at the Rodeo Refinery.

In addition, there are other projects that will emit pollutants in California and share the same rail tracks with the Project trains that should be included in the cumulative project list. These include:

- Kinder Morgan Richmond Terminal, which is currently importing Bakken crude;
- SAV Patriot Terminal at McClellan, which is currently importing Bakken crude;
- Plains All American Crude Terminal in Taft, which is currently importing cost-advantage crude;
- Alon Crude Flexibility Project in Bakersfield, which was recently permitted;
- Targa Terminal at Port of Stockton; and
- Bakersfield Crude Terminal.[109]

These projects must be included in the cumulative impact analysis because they will all emit significant amounts of criteria pollutants and greenhouse gases and will significantly increase rail traffic, increasing the probability of rail accidents that result in significant cumulative impacts.[110]

B11-20

B. The RDEIR Fails to Identify Significant Cumulative Air Quality Impacts

B11-21

The RDEIR *does not analyze cumulative air quality impacts.* Instead, citing BAAQMD guidance, the RDEIR states:

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[108] The Marine Terminal Phase II and Phase III Throughput Increase Projects were included in the cumulative PM2.5 analysis (RDEIR, Table 4.1-13) and the health risk assessment (RDEIR, Table 4.1-14). However, they were not considered in any other cumulative impact analyses.
[109] Fox/Pless Comments, p. 36.
[110] *Id.*
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> if a project exceeds the identified significance threshold... its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing adverse cumulative air quality conditions (BAAQMD, 2009d). Alternatively, if a project does not exceed the identified significance thresholds, then the project would not be considered cumulatively considerable and would result in a less than significant regional air quality impact.[111]

This statement is inconsistent with the CEQA Guidelines. Under CEQA, "cumulatively considerable" means that "the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.[112] "Cumulative impacts can result from individually minor but collectively significant projects taking place over time."[113]

Further, the Project's emissions will be released both inside and outside the boundaries of the BAAQMD. The locomotives that transport the recovered propane and butane will travel outside of the BAAQMD, emitting pollutants in other air districts. The RDEIR completely fails to consider the project-level and cumulative impacts of these out-of-BAAQMD emissions. B11-21

Dr. Fox and Dr. Pless calculated the Project's cumulative annual and daily NOx and ROG emissions. Dr. Fox's and Dr. Pless' calculations are summarized in Tables 6 and 7 of their comments.[114] Dr. Fox and Dr. Pless show that the Project's cumulative daily and annual NOx and ROG impacts are significant when compared to the BAAQMD's significance thresholds (even when calculated using the RDEIR's underestimated emissions).[115] These cumulative emissions also exceed significance thresholds of air districts in the Sacramento and San Joaquin Air Basins, through which the trains would pass, as follows: (1) for both NOx and ROG in the Yolo-Solano Air Quality Management District (10 tons/year) and the Sacramento Metropolitan Air Quality Management District (65 lbs/day); (2) for NOx in the Placer County Air Pollution Control District (82 lbs/day); and (3) for ROG and NOx in the San Joaquin Valley Air Pollution Control District (10 tons/year).[116] Thus, the

[111] RDEIR, p. 4.1-30.
[112] CEQA Guidelines §15065(a)(3).
[113] *Id.* § 15355(b).
[114] Fox/Pless Comments, pp. 38.
[115] *Id.*
[116] *Id.*

cumulative impacts of the Project are significant not only within the BAAQMD, but within adjacent air districts. B11-21

C. The RDEIR Fails to Identify Significant Cumulative Greenhouse Gas Emissions

The RDEIR concludes that the Project's contribution to GHG emissions impacts would not be "cumulatively considerable" because the Project would result in a net decrease of 43,529 metric tons per year of carbon dioxide-equivalent ("CO_2e") emissions.[117] However, Dr. Fox and Dr. Pless show that when Project GHG emissions are correctly calculated, the Project results in both a significant project-level and cumulative GHG emissions impact.

First, as explained above, the RDEIR fails to include two existing sources of GHG emissions, which are both necessary for the Project – the Sulfur Recovery Units and the Air Liquide Hydrogen Plant. The County provides that the Hydrogen Plant could increase GHG emissions by 43,000 MT/year, but fails to provide an estimate for the Sulfur Recovery Units. According to Dr. Fox and Dr. Pless, "[t]hese two increases combined are likely enough to offset 100% of the claimed GHG emission reductions."[118] B11-22

Second, as explained above, the Project could not recover the proposed amount of propane and butane (14,500 bbl/day) from its baseline crude slate. An additional source of propane and butane is necessary for the Project. The four related projects that will supply the additional amounts of propane and butane must be evaluated as part of the Project and their GHG emissions must be included in both the project-level and cumulative impact analyses.

Third, Dr. Fox and Dr. Pless explain that Phillips 66's widely reported plans to replace heavy sour San Joaquin Valley crudes with propane- and butane-rich Bakken crudes at its Marine Terminal will increase the amount of propane and butane in the refinery fuel gas after the Project is built out.[119] The RDEIR's GHG emission calculations incorrectly include no increase in GHG emissions from the increase in propane and butane in its refinery fuel gas from refining Bakken crudes as replacements for other heavier crudes.

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[117] RDEIR, p. 5-9.
[118] Fox/Pless Comments, p. 39.
[119] *Id.*
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Finally, the RDEIR fails to include any increase in GHG emissions from the end use of propane and butane, which according to Dr. Fox and Dr. Pless can be reasonably anticipated and is likely known by Phillips 66.[120] For cumulative pollutants whose emissions contribute to a global problem like GHG, the emissions, regardless of where or how they occur, must be considered. Dr. Fox and Dr. Pless explain that, assuming as little as 1,000 bbl/day of propane is burned as a fuel (its most common use), the Project's increase in GHG emissions are significant.[121] Thus, for purposes of analyzing GHG emissions impacts, "it is not speculative to assume that the use of propane and butane would generate GHG emissions. It is an undisputed fact that the combustion of propane and butane generate GHG."[122]

Dr. Fox and Dr. Pless calculated the Project's cumulative GHG emissions increase. They provide the results in Table 8 of their comments. Dr. Fox and Dr. Pless conclude that when even a subset of the cumulative projects is considered, the GHG emissions increase 40,876 ton CO_2e/year. This increase exceeds the BAAQMD's significance threshold of 11,023 ton CO_2e/year by a factor of four.[123] Thus, the Project's cumulative GHG emissions are significant. Further, Dr. Fox's and Dr. Pless' calculation represents merely a lower bound because it does not include: (1) the increase in GHG emissions from increased amounts of propane and butane in the refinery fuel gas from refining Bakken crudes at the Refinery; (2) emissions from the downstream use of recovered propane and butane; (3) emissions from most of the cumulative projects outside of the respective air district boundaries; and (4) increases in GHG emissions from the many other proposed, recently permitted and operating crude-by-rail projects.[124]

B11-22

D. The RDEIR Fails to Identify Significant Cumulative Hazards Impacts

The RDEIR concludes that "routine operations of the proposed Project would either not result in any impacts associated with hazards or hazardous materials or, would be less than significant...; thus routine operations would not contribute cumulatively to hazards-related impacts."[125] The RDEIR provides no further

B11-23

[120] *Id.*
[121] *Id.*
[122] *Id.*
[123] *Id.*, pp. 39-40.
[124] *Id.*, p. 40.
[125] RDEIR, p. 5-9.

analysis of the Project's cumulative hazards impacts. The RDEIR is fundamentally flawed and fails to comply with CEQA, which requires the County to consider the Project's impacts in conjunction with other past, present and reasonably foreseeable projects.[126]

First, the analysis is incorrectly based on an increase in the number of tank car shipments of propane and butane from 5,840 per year (16 per day) to 8,760 per year (24 per day).[127] The RDEIR provides no support for the assumed baseline, which should be the average number of tank car shipments in the two to three years prior to the start of CEQA review. As discussed above, the three-year baseline average number of tank cars of butane is four per day. Thus, the RDEIR underestimates the increase in the risk of a tank car accident by a factor of about four.[128]

Second, the RDEIR's analysis is incorrectly based on the frequency of propane and butane releases.[129] However, Dr. Fox and Dr. Pless explain that many other similar substances are transported by rail.[130] Therefore, the County must base its analysis on all tank cars, rather than just a small fraction of them. B11-23

Third, the RDEIR's analysis is incorrectly based on historic 1990 to 2010 propane and butane rail traffic accident data. However, the same rail lines that will be used by the propane/butane trains will also be used by unit trains of 80 to 100 tank cars each, carrying crude oil to local refineries, all routed from the same Roseville Rail Yard.[131] These rail lines pass very close to residential and commercial areas in the vicinity of the Project, as well as elsewhere along the route. The RDEIR completely fails to analyze the cumulative accident impacts of the increase in propane/butane cars coupled with the post-2010 and future increase in crude rail cars.

Dr. Fox and Dr. Pless conclude that the Project's cumulative accident impacts are significant. Dr. Fox and Dr. Pless explain that small amounts of crude oil have long been transported by rail, but since 2009 rail transport of crude oil has

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[126] CEQA Guidelines § 15064(h)(1).
[127] RDEIR, Table 4.6-6.
[128] Fox/Pless Comments, p. 41.
[129] RDEIR, p. 4.6-27.
[130] Fox/Pless Comments, p. 41.
[131] RDEIR, p. 4.6-27.
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increased tremendously.[132] Nationwide, crude oil shipments increased from 10,800 car loads in 2009 to about 400,000 in 2013, which is significantly more than the 270,000 tank cars of propane and butane assumed in the RDEIR's analysis.[133] In Canada, shipments of crude oil by rail increased from 500 car loads in 2009 to 160,000 car loads in 2013.[134] Large increases in crude-by-rail shipments are expected to continue.[135] According to Dr. Fox, these crude trains will share the tracks with the Project's propane and butane trains, increasing the probability of accidents.[136] There are several recent examples of accidents involving the collision of unit trains carrying crude with trains carrying other commodities due to the significant increase in rail traffic.[137]

Fourth, the RDEIR's analysis is incorrectly based on the short segment of track from the Richmond Rail Yard to the Refinery.[138] However, Dr. Fox and Dr. Pless explain that trains could take multiple routes from the rail yards to the California border.[139] Many segments of California rail line pass through some of the state's most sensitive ecological areas and parallel the water supply for most of the state. These route segments also contain many high hazard areas for derailments. Emergency response teams have generally good coverage in the urban areas, but none are located near the high hazard areas in rural Northern California that the RDEIR fails to consider.[140]

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Fifth, the RDEIR fails to establish any threshold of significance for its hazard probability analysis and fails to cite any authority for concluding that accident impacts are not significant. Instead, the RDEIR compares the odds of death from an accident involving a rail car full of propane to other common causes of death, such as car accidents. This trivializes the risk to residents and businesses that are just a few feet from the rail tracks.

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[132] Fox/Pless Comments, p. 41.
[133] *Id.*, p. 42.
[134] *Id.*
[135] *Id.*
[136] *Id.*
[137] *Id.*
[138] *Id.*
[139] *Id.*
[140] *Id.*

Finally, the RDEIR's probability of accident calculations is unsupported and misleading. The RDEIR reports a propane and butane release frequency of 1.04E-8 releases per mile travelled by tank car, based on 1990 to 2010 accident data.[141] The RDEIR also reports the annual probability of fatality associated with existing butane rail transport as 1.4E-6 and proposed butane/propane rail transport as 2.1E-6 (or one chance out of 500,000). This estimate is presented in a table with risks of other events, such as choking or drowning, to suggest the risks are *de minimis*.[142] The RDEIR's probability analyses are not supported.

Using the RDEIR's number of tanks cars and number of miles travelled, Dr. Fox and Dr. Pless calculated the resulting probability of propane/butane releases. Dr. Fox and Dr. Pless determined that when the Project is operational, an accidental propane/butane release could occur once every 17 years. When the correct baseline is used (four tank cars per day), Dr. Fox and Dr. Pless found that the risk of an accidental propane/butane release increases to once every 10 years.[143] According to Dr. Fox and Dr. Pless, these are very high accident probabilities that would increase the risk of accidents by a factor of four and constitute a significant impact.[144] This is a significant Project accident risk that was not identified or mitigated in the RDEIR.

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The cumulative accident risk from other trains using the same tracks would be significantly greater than the Project risk. According to Dr. Fox and Dr. Pless, "[t]his cumulative accident risk puts communities along the rail lines at significant risk of property damage, serious injury, and death."[145] The RDEIR fails to identify this significant unmitigated impact.

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[141] RDEIR, p. 4.6-27.
[142] *Id.*, Table 4.6-7.
[143] Fox/Pless Comments, p. 43.
[144] *Id.*
[145] *Id.*
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IX. CONCLUSION

We thank the County for this opportunity to comment on the RDEIR and urge the County to prepare and circulate a revised RDEIR which describes and analyzes the whole Project, identifies the Project's potentially significant impacts, and requires Phillips 66 to incorporate all feasible mitigation measures into the Project to reduce impacts to a less than significant level. B11-24

Sincerely,

Rachael E. Koss

REK:clv

Attachments

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