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To: "p66-railspur-comments@co.slo.ca.us"
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Cc: "jack.eidt@wilderutopia.com" <jack.eidt@wilderutopia.com>
Date: 11/24/2014 02:37 PM
Subject: REJECT Phillips 66 Santa Maria Refinery Rail Project - Tar Sands Action SoCal

Dear Mr. Wilson:

Please receive the attached comment letter on the Phillips 66 Santa Maria Refinery Rail Project into the public record on behalf of Tar Sands Action Southern California, South Bay 350 Climate Action Group, Burbank Green Alliance and Wild Heritage Planners. Text of the letter is also copied below.

Jack Eidt
Director - Wild Heritage Planners
Publisher - WilderUtopia.com - Coexisting into the Great Unknown Organizer - SoCal 350 and Tar Sands Action SoCal Keep in Touch on Facebook and @WilderUtopia on Twitter Office 323 362 6737

Tar Sands Action So Cal is a co-founding member of the Southern California Climate Action Coalition 350, affiliated with the national climate change organization 350.org. We are the region's largest clean energy coalition, with over 100 participating organizations, including environmental justice, social justice, labor, youth, environmental, business, and community groups. Through collaboration, SoCal 350 aims to mobilize, support, and strengthen the efforts of different organizations and community members working toward solutions to dirty fuel dependence and who are battling the effects of global-warming-caused climate disruption.

(See attached file: Reject Phillips 66 Santa Maria Rail Project - Tar Sands Action - Jack Eidt.pdf)

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November 24, 2014

Mr. Murry Wilson
SLO County Dept. of Planning and Building
976 Osos Street, Room 200
San Luis Obispo, California 93408

Email: **p66-railspur-comments@co.slo.ca.us**

Re: REJECT Phillips 66 Santa Maria Refinery Rail Project

Dear Mr. Wilson:

Tar Sands Action Southern California is an all-volunteer, grassroots organization dedicated to advocacy for clean renewable energy alternatives that wean us off dangerous extreme fossil fuel extraction, transportation, storage, and refining projects in Southern California as well as the state and nation. These moves put at risk the health and safety of our California neighborhoods, the sustainability of our ecosystems, and the stability of our global climate. We are a co-founding member of the SoCal 350 Climate Action Coalition. Along with coalition member South Bay 350 Climate Action Group, we are affiliated with the national climate change advocate 350.org. Burbank Green Alliance is a Southern California organization dedicated to community and sustainability and Wild Heritage Planners specializes in urban and environmental planning centered on the principles of ecology.

The SoCal 350 Climate Action Coalition organized an event last March 1st where over 100 organizations and almost a thousand activists came out in the streets of the Port of Los Angeles calling for clean energy solutions instead of enabling new infrastructure in service to extreme fossil fuel extraction. With the goals of our dedicated supporters and activists in mind, we are writing to voice our strong opposition to the proposed Phillips 66 Santa Maria Refinery Rail Project. The project would put the health and safety of

communities in Southern California and throughout the state in danger, presenting significant and unacceptable risks to our water, air and climate.

Emergency Responders

First and foremost, emergency responders are not prepared for these heavy, dangerous trains and current safety standards will not protect the public. First responders must be trained to deal with an increasing epidemic of oil train disasters across North America. First responders need to know up front what materials are being shipped through their jurisdictions and have sufficient response plans in place. While large shipments of Bakken shale oil must be identified, there is no requirement to disclose the type of crude and its properties. Thick, viscous tar sands oil, as the recent massive spills in Marshall, Michigan and Mayflower, Arkansas have demonstrated it is much more toxic and difficult to clean up than conventional crude. Training and information sharing with local emergency response personnel should be paid for by the industry, using a fee or assessment. TAR-01

With regards to small loads of under 1 million gallons first responders are "running blind," meaning not informed whether hazardous, potentially explosive, Bakken Shale oil are inside the tank cars. A single tanker car carries 30,000 gallons of potentially explosive and toxic crude oil. That's significantly more than most US fire departments can fight, and enough crude oil to permanently damage rivers, wild areas, and drinking water supplies. Small loads should be disclosed to police and fire departments as well.

Rail Accident Data Omitted. The recirculated draft EIR dangerously misinforms first responders because it does not adequately assess the risks of an oil train disaster. It's analysis of potential accidents and spills is flawed because it only evaluates rail accident rates from 2003 to 2012 and spill release rates between 2005 and 2009, and omits important data about crude rail accident frequency and magnitude in 2013 and 2014. This is troubling because we know that more crude spilled from trains in 2013 than spilled during the past four decades. The EIR must look at recent data, including accident data from Canada which has also experienced increased crude by rail incidents. This data reflects the increased quantities of dangerous crude being transported in old and unsafe tank cars and will provide a more accurate assessment of accident risk and magnitude along the rail lines that would serve this project. TAR-02

Moreover, the EIR's worst case scenario spill analysis estimates a spill of approximately 180,000 gallons, that is approximately six tank cars of crude. This must be an error because according to our studies from ForestEthics, most crude trains are comprised of 100 or more tank cars. Indeed, a worst case scenario spill would be on the order of millions of gallons of crude. Such a spill could devastate our scarce water resources, property and our local economy, and would pose a significant threat to public health and safety. This project cannot be approved without analyzing and mitigating its true impacts.

Air Quality Impacts

Additionally, the toxic air emissions resulting from the Phillips 66 project pose an unacceptable risk to public health, with high levels of toxic air emissions that will impact California communities. Volatile toxic chemicals leak out of tank cars into the air poisoning communities along rail routes. In its latest environmental review Phillips 66 admits that its proposed oil train facility will create "significant and unavoidable" levels of air pollution, including toxic sulfur dioxide and cancer-causing chemicals. The report cites increased health risks -- particularly for children and the elderly -- of cancer, heart disease, respiratory disease, and premature death.

Crude oil produced from Canadian tar sands is one of the world's dirtiest and most environmentally destructive sources of fuel. A diluting agent is typically mixed with the semisolid bitumen from tar sands to allow it to be moved into and out of railcars and through pipelines. Though the specific content of the diluting agents is proprietary information, most formulations include natural gas liquid condensate containing volatile hydrocarbons such as benzene, toluene, ethyl benzene and xylene (Source: NRDC). TAR-03

The transport of diluted bitumen involves a multistage process which can include pipelines, barges and loading and unloading railcars. During transfers between transportation mechanisms, there is an increased likelihood that vapors will be released from the diluted bitumen, putting workers at particular risk. The diluting agent, which evaporates quickly, contributes to greater unplanned, or fugitive emissions, of highly toxic and carcinogenic chemicals during loading, transport, and unloading than would be the case with conventional oil.

Refinery emissions. When diluted tar sands crude oils arrive at U.S. refineries, they bear little similarity to conventional crude oils. Not only does the bitumen portion of the diluted mixture contain 102 times more copper, 11 times more nickel, and 5 times more lead than conventional crude oils, but the added diluting agent contains high concentrations of hazardous pollutants such as benzene (Source: NRDC). All of these chemicals may be released as air pollutants during the refining process. Vapor or "fugitive" emissions may escape through leaks in piping and equipment throughout the refining process, and the presence of highly volatile diluting agents makes it likely that more carcinogenic pollutants will be released into the air. In addition, tar sands crudes require greater use of heaters, boilers, hydro-treating, and cracking, which are likely to increase emissions of toxic and smog- and soot-forming air pollutants. These pollutants have been tied to increased cancer risks, increased respiratory issues including asthma, cardiovascular illness, developmental delays, and other negative health effects. TAR-04

Noxious odors. In addition to toxic air pollutants, tar sands bitumen contains as much as 11 times more sulfur than conventional crude oils; diluted bitumen contains even higher levels due to the presence of sulfur compounds in diluting agents. Diluted bitumen from the tar sands also has notably high levels of certain sulfur compounds called mercaptans, which are highly volatile and produce strong odors at very low concentrations. Mercaptans have also been linked to central nervous system problems and can irritate the TAR-05

eyes, skin, and upper respiratory system. Due to the extreme volatility of mercaptans, experts have found it likely that they could be released, along with other highly volatile compounds, during the refining of crude oil. TAR-05 (cont.)

Crude By Rail Accidents and Water Resources

Moreover, as noted above, the EIR must fully analyze the potential worst-case scenario of a spill near each of the many watersheds crossed en route to the Santa Maria refinery. The proposed rail route brings oil trains through the San Francisco Bay-Delta watershed and along California's treasured central coast. California has a high risk for catastrophic accidents because many of its 5,000 to 7,000 railroad bridges are over 100 years old and are not routinely inspected by any state or federal agency, and the rail lines run through "hazard areas" such as earthquake faults and densely populated cities. Millions of Californians live near crude by rail routes and could face extreme safety risks. TAR-06

The average oil train carries more than three million gallons of explosive, toxic crude oil. A derailment near a river, stream, reservoir, or above a groundwater aquifer could contaminate drinking water for millions of Californians. During a time of extreme drought, San Luis Obispo County must not approve this project and create contamination risk for the rest of our state.

Phillips 66 Santa Maria and Rodeo Projects Connected

The San Luis Obispo County planning department must examine the Santa Maria and Rodeo proposals as a single project. It is clear that Phillips 66 wants to bring toxic Canadian tar sands to California. The proposed oil train terminal in Santa Maria is linked by pipeline to the Phillips 66 refinery in Rodeo, CA. Phillips 66 is proposing to modify these facilities to allow it to refine the toxic Canadian tar sands. Transporting and refining tar sands, as noted above, will create more toxic air and water pollution for families along the rail line and near the Santa Maria refinery. San Luis Obispo cannot approve this project in isolation. TAR-07

Climate Impacts: Crude Quality Full Disclosure

Finally, Phillips 66 must disclose crude quality information referred to above in order for decision makers to fully understand the climate impacts of the proposed rail project. Tar sands means more carbon pollution: At every stage of the mining, transportation, and refining process, Canadian tar sands are more carbon intensive than any other source of oil. Bringing tar sands to California will undermine the state's efforts to be a global leader addressing climate disruption. TAR-08

We strongly urge the San Luis Obispo County Planning Commission and Board of Supervisors to reject the Phillips 66 oil train proposal due to its significant, unavoidable, and unnecessary risks to our communities and climate! TAR-09

Sincerely,

Jack Eidt
Organizer
Tar Sands Action Southern California

Joe Galliani
Organizer
South Bay 350 Climate Action Group

Jessica Aldridge
Executive Director
Burbank Green Alliance

Jerry Collamer
Communications Director
Wild Heritage Planners

Tar Sands Action So Cal is a co-founding member of the Southern California Climate Action Coalition 350, affiliated with the national climate change organization 350.org. We are the region's largest clean energy coalition, with over 100 participating organizations, including environmental justice, social justice, labor, youth, environmental, business, and community groups. Through collaboration, SoCal 350 aims to mobilize, support, and strengthen the efforts of different organizations and community members working toward solutions to dirty fuel dependence and who are battling the effects of global-warming-caused climate disruption.

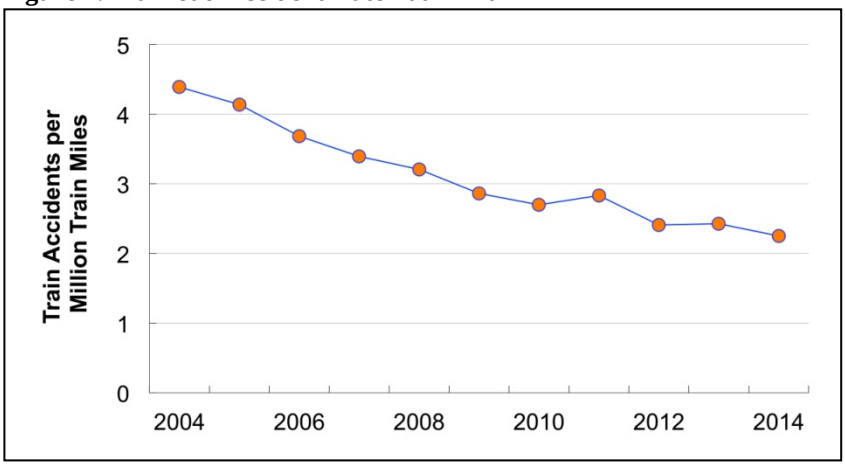
TAR-01	The RDEIR contains mitigation measures PS-3a through PS-3i (see Section 4.11, Public Services and Utilities) to ensure that the SMR Fire Brigade and the Cal Fire resource are sufficient before the project proceeds. These include; 1) an updated Fire Protection Plan for the Rail Spur Project that meets all the applicable requirements of API, NFPA, UFC, and Cal Fire/County Fire; 2) an updated Emergency Response Plan to include the rail unloading facilities and operations; 3) an updated Spill Prevention Control and Countermeasure Plan to include the rail unloading facilities and operations; 4) requirements that the SMR fire brigade meets all the requirements outlined in Occupational Safety and Health Administration 29 CFR 1910.156, and NFPA 600 & 1081; 5) updated fire brigade staffing/training requirements and Cal Fire funding requirements; 6) funding of a qualified Cal Fire inspector to conduct the annual fire inspections at the SMR; 7) funding of training for Cal Fire personnel, including field training, as per the Security and Emergency Response Training Center Railroad Incident Coordination and Safety (RICS) meeting Department of Homeland security, NIIMS, OSHA 29 CFR 1910.120 compliance. These extensive requirements would reduce the impacts of the rail spur project on fire resources at the SMR to less than significant with mitigation (Class II). Phillips 66 has proposed a state-of-the-art fire protection system for the rail spur unloading rack. This fire protection system would be reviewed and approved by Cal Fire prior to commencing operations at the new unloading facility. In addition, for transportation of crude oil along the mainline tracks, mitigation measures PS-4a though PS-4c) (see Section 4.11, Public Service and Utilities) include 1) Only rail cars designed to Option 1: PHMSA and FRA Designed Tank Car shall be allowed; 2) requires annual funding for first response agencies along the mainline rail routes; 3) require annual emergency responses scenario/field based training; and 4) notification requirements. Impacts to fire protection and emergency response would remain significant and unavoidable (Class I) along the mainline routes. Most crude oils contain some level of flammable natural gas liquids (Nils). Nils are typically composed of hydrocarbons from ethane (C2) to pentane (C5) The issue of unstabilized crude has been an issue for light crude such as Bakken. A new mitigation measure (HM-2d) in the Hazards and Hazardous Materials (Section 4.7) has been added that would ban the rail unloading of crudes with an API Gravity of 30° or greater, which would cover light crudes. Bakken crude can contain about 23% pentane and lighter natural gas liquids, were as the crudes evaluated in the RDEIR for use at the SMR would contain about eight to nine percent pentane and lighter natural gas liquids. The mitigation measure that eliminates the delivery of light crude to the SMR would serve to limit the amount of light hydrocarbon in the crude.

	Note that a crude oil train currently passes through SLOC weekly from San Ardo, so the risks of crude oil trains are currently present in the County as a part of the baseline. In addition, the SMR stores large quantities of crude oil and the SMR Fire Brigade is fully capable of combating a crude oil fire. Mitigation measures (PS-3d and PS-3i) in Section 4.11, Public Services and Utilities, require that the SMR Fire Brigade receive additional training as required by Occupational Safety and Health Administration 29 CFR 1910.156, and NFPA 600 & 1081.
TAR-02	The historical accidental data used in the RDEIR is not limited to trains shipping crude oil in recent years, but the long term historical train accident data for all freight. The use of data from all freight train movements nationwide provides a very robust database for estimating rail accidents and derailments. Average U.S. train derailment rates over the 5-year period 2005 – 2009 have previously been estimated using data from the U.S. Department of Transportation, Federal Railroad Administration (FRA) Rail Equipment Accident (REA) database combined with traffic data from the rail industry (Liu et al, 2014). This dataset was used to develop detailed derailment rates as a function of three factors: FRA Track Class, traffic volume (which appears to be correlated with additional maintenance above basic federal requirements) and Method of Operation (i.e., signaled or non-signaled trackage). All three of these factors have a significant effect on freight train derailment rate. These factors were used to calculate segment-specific derailment rates thereby enabling a fine grained calculation of derailment probability for any particular route. As discussed below, the overall accident rate has declined since this data was recorded and analyzed, thereby resulting in an overestimate of the present-day risk, and future risk. For example the average accident rate for the five-year period 2010-2014 was 27% lower than the average for the five-year period from 2005-2009, and the preliminary estimate of the accident rate for 2014 was 35% lower than the five-year period from 2010-2014. The reason data from 2005-2009 was used is because that dataset contained additional information that allowed for the estimated effect of FRA Track Class, Traffic Density and Method of Operation (Signaled or Unsignaled) on derailment rate. This additional granularity is needed for more precise segment-specific accident rate used in the analysis. The derailment rates calculated were based on 1,420 Class 1 railroad mainline derailments. Inclusion of a few more crude oil train derailments in recent years would have virtually no effect on the estimated rates. The suggestion that because these recent accidents were not included in our dataset somehow invalidates the results reflects a lack of understanding of the analytical technique and how it was used. The data needed for this analysis are less complete than for overall accident rate but all other things being equal, there is no reason to believe that crude oil trains derail at a rate different than other

freight trains. Using what data are available and making certain assumptions, the EIR consultant conducted an analysis in 2014 and observed no significant difference in the derailment rate for crude oil trains then for other freight trains.

The railroad accident rate has been steadily trending downward for over a decade. The accident rates in the past few years were the lowest since the FRA started recording the data in the mid-1970s. In the period from 2004 to 2014 the rate declined by 49% (almost half) (see Figure 1 below). Most derailments receive little or no attention from the public or media. Railroads are required by regulation to report all accidents that exceed a certain monetary threshold in damage to track, signals and rolling stock (currently $9,600). Proper estimation of train accident rates involves analysis of all accidents, divided by the total amount of traffic. The reason that some perceive an increase in the railroad petroleum crude oil accident rate is because of the more than 50-fold increase in this traffic since 2009. Estimates are that 233,698 tank cars of crude oil were moved by rail in 2012. This increased to over 435,000 tank cars moved by rail in 2013 (the full year of data is not yet available for 2014). With this increase in crude by rail traffic, the derailment and spill probability data would suggest that multiple crude by rail accidents would happen each year.

Figure 1. Railroad Accident Rate 2004 – 2014



Data Source: US DOT Federal Railroad Administration
http://safetydata.fra.dot.gov/officeofsafety/publicsite/summary.aspx
(Data for 2014 include January through November)

Using the accident and spill probability data from the RDEIR the DEIR would have estimated that between 2012 and 2013 there would have been two to five derailments that had spills of 100 gallons or more in the U.S. Based upon the United States Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) incident data base, there were three crude oil train derailments with spills of 100 gallons or more.

This does not contain the accident and spills that have occurred in Canada over this period since the accident and spill probability data is for mainline rails

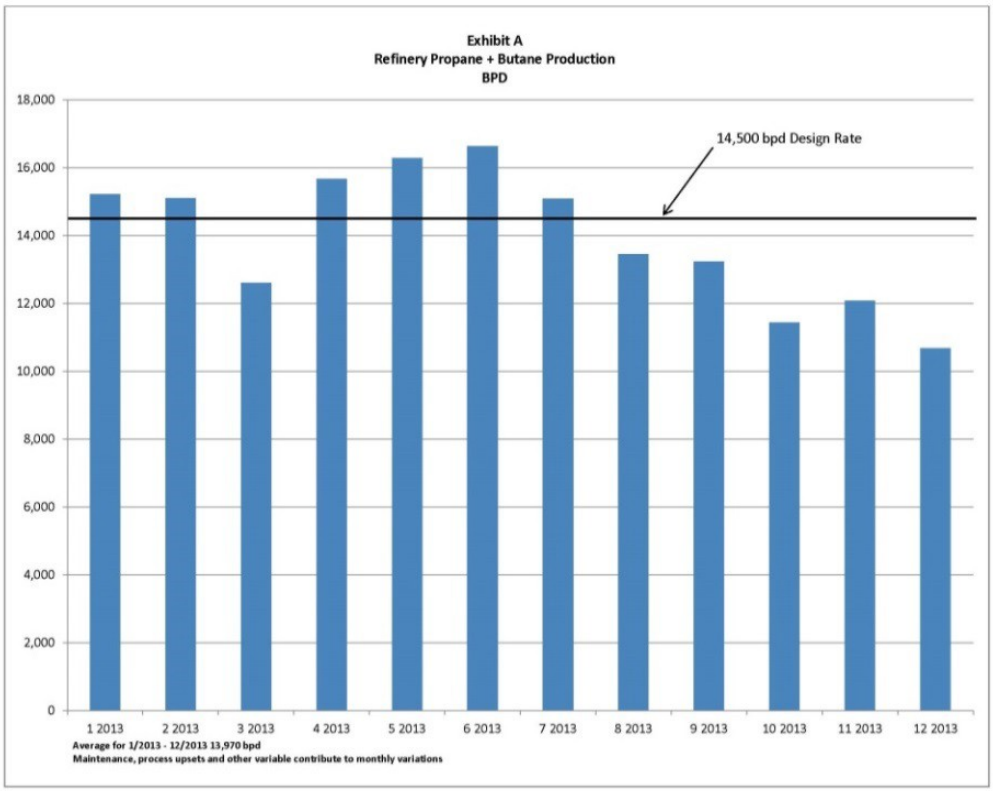
	within the United States only. The methodology for estimating crude oil unit train accidents and spill probabilities is also consistent with the methodology outlined by the American Institute of Chemical Engineers, Center for Chemical Process Safety (AIChE CCPS) document *Guidelines for Chemical Transportation Risk Analysis* (CCPS, 1995), which is the definitive reference on the methodology for estimating hazardous materials transportation risk. In the event of a train derailment and accident, only a limited number of rail cars actually derail and spill oil. In no case has a rail accident resulted in all rail cars derailing and failing. The median number of cars derailed per FRA-reportable, freight-train derailment on Class I mainlines was six (Liu et al., 2013). In this analysis, we assumed that all derailed cars were crude oil tank cars. The conditional probability of release (CPR) represents tank car safety performance in accidents and was estimated based on the latest statistics developed by the Railway Supply Institute (RSI) – Association of American Railroads (AAR) Railroad Tank Car Safety Research and Test Project. The RSI-AAR Tank Car Project analysis accounts for tank car safety design features and accident characteristics. The RSI-AAR Project has also calculated a similar statistic, CPR(>100), which is the conditional probability of release of more than 100 gallons from an individual tank car involved in an FRA-reportable accident. Releases smaller than this amount are not believed to pose a substantial threat, so this is the principal metric being used by the rail and tank car industries in their consideration of different tank car safety designs. CPR(>100) is used in the risk analysis described here to be consistent with other documents related to this subject. Please note that trains associated with the Phillips 66 Project would generally have 80 tank cars due based on the space available for the new rail spur. As noted in the RDEIR, the current DOT-111 tank cars have serious safety deficiencies that can lead to an unacceptable spill rate in the event of a train derailment. As a result, the RDEIR specifically included mitigation measure HM-2a, which requires only rail cars designed to Option 1: PHMSA and FRA Designed Tank Car as listed in Table 4.7.6, shall be allowed to unload crude oil at the Santa Maria Refinery. Even with the improved rail cars, the RDEIR found that the risk of a crude oil train accident and spill was considered a Significant and Unavoidable (Class I) impact. The potential consequences of a potential accident also need to be taken into account; specifically the distance from the rail line where adverse impacts would be possible. The worst-case thermal hazard zone associated with the catastrophic tank car failure and fire was approximately 500 meters. Within this distance, there is the possibility that individuals could experience thermal injuries. Beyond 500 meters, potential injuries would not likely occur. Likewise, the potential for fatalities is limited to 300 meters from the rail line. However, the potential impacts of a train derailment, oil spill and potential fires

	and explosions would be substantial. Therefore, the RDEIR found that the risk of a crude oil train accident and spill was considered a Significant and Unavoidable (Class I) impact.
TAR-03	The EIR addressed fugitive emissions from tank cars while at the site, as discussed under impact AQ.2 (see Section 2.3, Air Quality and Greenhouse Gases). Air emissions from tank car fugitive emissions during travel based on the EPA fugitive emissions from components calculations would be nominal, totaling only about 0.02 lbs/round trip within SLO County. Rails cars would not be opened during transit nor would they be steamed during transit. Emissions associated with unloading of the tank cars, including pumps, pressure relief valves, manifolds, connections, etc, were all included in the EIR and listed in detail in the Air Quality Appendix. Emissions associated with unloading would not occur during transit. Some comments (see Response to CBE-122) indicate that large losses occur during transit. Shrinkage estimates associated with cost projections appear to be very conservative. Loss of 3% of crude volume to evaporation over the course of the transit would produce emissions that far exceed the estimates based on EPA fugitive emissions methodologies and therefore appear to be inaccurate, at least for heavier crude oils. Not all crude oil is removed from a rail car during unloading, as some remains on the insides of the car and within piping and connections, thereby accounting for some "shrinkage" value. The estimates of on-site rail car fugitive emissions have been included in the EIR and are considered to be accurate. However, inclusion of rail car inspections to ensure non-leaking components is good practice and has been added to the mitigation measures for operations. The potential increase in BTEX has been addressed in the EIR as part of Impact AQ.2 (see Section 4.3, Air Quality and Greenhouse Gases). However, during the Enbridge Spill, 1,086 air samples of benzene levels, for example, were measured and 21 of the samples showed air concentrations above the EPA action levels (http://www.epa.gov/enbridgespill/data/dataair.html) of 6 ppb, indicating that some volatiles were present in the spilled materials although not very much. Sampling conducted by the Michigan Department Of Natural Resources And Environment Environmental Laboratory on the crude oil in the Enbridge pipeline (which was dilbit from Canada, same as would be expected for the proposed project) indicated that benzene could be as high as 1,100 ppm in the crude, Xylene as high as 1,200 ppm and Toluene as high as 1,900 ppm (measured as mg/kg) (http://www.epa.gov/enbridgespill/data/index.html#aqdata). The results indicated a BTEX concentration of about 0.50%, or, as per Table 4.3.13 in the RDEIR, within or below the range of crude oils currently processed by the SMR. The Keystone Pipeline FEIS (2013) also examined a wide range of crude oils and demonstrated that the " BTEX content of the dilbits [from Canada] is much lower than that of many lighter crude oils"

	The EIR analyzed a BTEX concentration of 1.25% to be conservative which indicated nominal increases in health risk.
TAR-04	The additional emissions associated with mining the tar sands, such as steaming or excavations, would occur no matter the destination of the crude oil, whether the crude oil is destined for the SMR, or other locations within the U.S. or world-wide, as is acknowledged in the Keystone Pipeline EIR " The proposed [Keystone Pipeline] Project is not likely to impact the amount of crude oil produced from the oil sands" (Keystone Final EIS, page ES-15) indicating that the crude oil would be produced and refined even without the new pipeline system or the elimination of California refineries to process the crude oil. Refineries are equipped to handle a specific type of crude oil, generally a refinery equipped to handle a heavy crude oil could not switch to a lighter crude oil and efficiently and economically conduct refining. Switching amongst heavy crudes would not substantially change the GHG emissions from a refinery. NETL (2009) conducted studies on a range of crude oils for a wheel-to-tank and wheel-to-wheel GHG lifecycle analysis associated with the Keystone Pipeline FEIS. The majority of differences between tar sands and other heavy crude oils was the Raw Material Acquisition (mining and extraction) stage of the lifecycle process, where the raw material acquisition GHG intensity ranged from 14 to 128 kg CO2e per bbl crude oil acquired, with Canadian Tar Sand at the upper end with 111. Conventional Canadian crude produced 36 kg and the US average produced 24 kg. This is in contrast to the refining stage of the lifecycle process which, between heavier crude oils, was similar. The EIR examined the increase in toxic fugitive emissions for the refining of the proposed crude oils by examining the increase in BTEX emissions from fugitive components at the SMR, including emissions from the crude tanks. These increases in BTEX are determined to have a nominal effect on health risk. The increased levels of nickel, vanadium, lead and copper do not affect air emissions as none of the crude oil is combusted and none of the metals are carried over in the fuel gas. The metals would remain in the coke. Sulfur production would increase producing potentially more sulfur trucks trips, as discussed in Section 4.3.4.2 (see Section 4.3 Air Quality and Greenhouse Gases).
TAR-05	The sulfur content of the crude oil does not correlate to the H2S content of the crude oil. The 1% H2S content used in the EIR is based on information provided by the Applicant and calculations generated by SPEC Services and Canister Manufactures Information, as provided by the Applicant.
TAR-06	Potential worst-case water quality impacts related to a rail accident has been addressed in Impact WR.3. Individual waterways that could be affected are shown on Figures 4.13-4 through 4.13-9 and in Tables 4.13-1 and 4.13-2, which included the San Francisco Bay-Delta watershed. Water quality impacts from a

	spill along the mainline rail were concluded to be significant and unavoidable (Class I). In estimating the probability of a train accident, items such as roadbed failure (mainline and on bridges) and earthquake were taken into account. Table 4.7.1 list the various initiating and contributing causes of rail accidents. As discuss in Impact HM.2 (see Section 4.7, Hazards and Hazardous Materials), regular inspection and testing of mainline track and bridges is conducted. As discussed in Impact HM.2, the risk associated with a rail accident was found to be significant and unavoidable (Class I).
TAR-07	The Rodeo Refinery (SFR) produces gases as a byproduct of the refining process, and these gases are used as fuel in various refinery processes (referred to as "refinery fuel gas" or "RFG"). Currently, the propane and part of the butane generated at the SFR is used as RFG. Instead of using the propane and butane as fuel at the SFR, the Propane Recovery Project will allow Phillips 66 to recover, store, and ship propane and additional butane via rail to outside customers. Therefore, the primary project objective is to recover liquid petroleum gases ("LPGs" *i.e.*, propane and butane) that already exists in the RFG. The Propane Recovery Project will not cause or require an increase in the amount of recoverable LPG present in the RFG; it will simply allow recovery of the LPGs that already are present in the RFG. The Propane Recovery Project is designed to remove up to 14,500 barrels of LPGs per day. Data regarding actual LPG content of the RFG is consistent with the design basis for the project. The figure below shows that, for the twelve month period from January through December 2013, the average LPGs in the Rodeo RFG was 13,970 barrels per day. The equipment design is a limiting factor on the amount of propane and butane that can be captured and stored, regardless of how much propane and butane can be produced by the SFR in the future or what type of crude oil is processed. Phillips 66 specified this design basis in the application to the Bay Area Air Quality Management District for an authority to construct the Propane Recovery Project, and it has been translated into an enforceable condition included in the draft permit prepared by the air district. Therefore, the amount of propane and butane to be extracted once the Propane Recovery Project is operational will be constrained by the physical design of the equipment and the permit limits. Most of the LPG produced at the SFR does not arrive as propane and butane in crude oil or in the semi-refined products received from the Santa Maria Refinery (SMR). Rather, the vast majority of LPG produced at the SFR is created through the refining process itself. As explained above, the design capacity of the Rodeo Propane Recovery Project was sized to recover LPGs that are currently being produced and burned as part of the refinery fuel gas at the SFR. No changes in the crude delivery system, type of crude or operations

at the SMR are needed in order to fully utilize the propane recovery unit in Rodeo.



The commenter's have overlooked the fact that the refining process at the SFR itself accounts for 90% of the propane and butane currently produced and proposed to be recovered by the Rodeo Propane Recovery Project. As described at pages 3-8 to 3-9 of the Recirculated Draft Environmental Impact Report for the Propane Recovery Project, the refining process incorporates four primary functions: separation, conversion, purification and blending. Crude oil and other incoming feed streams contain mixtures of various hydrocarbon compounds that can be separated using distillation and fractionation in the first step of the refining process. At the SFR, a small amount of butane and propane is separated from the crude oil in these first stage processes. However, butane and propane are also created from other hydrocarbon compounds during the conversion phase of the refining process. Overall approximately ten percent of the LPG (combined butane and propane) arrives as identifiable fractions of the crude oil, and the balance of approximately ninety percent is created in the refining processes (cracking units).

Since LPG in the crude oil accounts for only a very small fraction (approximately ten percent) of the total LPG produced at the SFR, a change in

	crude oil LPG content in Santa Maria or in Rodeo would have very little effect on the volume of LPG available for recovery at Rodeo. As discussed in the Recirculated Draft Environmental Impact Report for the Propane Recovery Project Section 3.4.2.1, and shown in Figure 3-7, the proposed Project's design basis was derived from data taken at the Refinery in August, 2011. In the same section, the RDEIR for the Propane Recovery Project also provides an update to substantiate this 2011 design basis with the most recent full year (2013) of RFG data from the Refinery in Figure 3-8. This figure shows that for 2013 an average of 13,970 barrels per day (BPD) of propane and butane were available and that this quantity of propane and butane varies monthly. These data provide the substantial evidence to support the "independent utility" of this Project and further support that the EIR has not inappropriately piecemealed or segmented this Project.
TAR-08	The additional GHG emissions associated with mining the tar sands, such as steaming or excavations, would occur no matter the destination of the crude oil, whether the crude oil is destined for the SMR, or other locations within the U.S. or world-wide. NETL (2009) conducted studies on a range of crude oils for a wheel-to-tank and wheel-to-wheel GHG lifecycle analysis associated with the Keystone Pipeline FEIS. The majority of differences between tar sands and other heavy crude oils was the Raw Material Acquisition (mining and extraction) stage of the lifecycle process, where the raw material acquisition GHG intensity ranged from 14 to 128 kg CO2e per bbl crude oil acquired, with Canadian Tar Sand at the upper end with 111. Conventional Canadian crude produced 36 kg and the US average produced 24 kg. This is in contrast to the refining stage of the lifecycle process which, between heavier crude oils, was similar.
TAR-09	This comment does not identify a specific environmental analysis or CEQA issue relative to the EIR and compliance with CEQA. The commenter's concerns about hazards and climate are included in the FEIR for the decision-makers' consideration as part of the County's deliberations on the proposed project.