Valero Crude by Rail Project
Public Comments received May 30 - July 1, 2013

Comment Letter	Commenter	Date Received
Agencies		
A1	Caltans, Erik Alm, District Branch Chief, Local Development-Intergovernmental Review	27-Jun-13
Organizations		
B1	Amports	1-Jul-13
B2	Natural Resources Defense Council	1-Jul-13
B3	Communities for a Better Environment	1-Jul-13
B4	Local Union 180, International Brotherhood of Electrical Workers	1-Jul-13
Individuals		
C1	Sabina Yates	12-Jun-13
C2	Harry Newhall	19-Jun-13
C3	David Lockwood	21-Jun-13
C4	Susan Hutchinson	27-Jun-13
C5	Tom Cepernich	28-Jun-13
C6	Ralph Aguin	1-Jul-13
C7	Constance Beutel	1-Jul-13
C8	Sylvia Fracisco	1-Jul-13
C9	Nancy Carey	1-Jul-13
C10	Larry Fullington	1-Jul-13
C11	Richard Lim	1-Jul-13
C12	John Ord	1-Jul-13
C13	Bea Reynolds	1-Jul-13
C14	Tim Rose	1-Jul-13
C15	Rick Slizeski	1-Jul-13
C16	Pat Toth-Smith and Andy Smith	1-Jul-13
C17	Don and Gail Stock	1-Jul-13
C18	Janeen Thomas	1-Jul-13
C19	Marilyn Bardet	1-Jul-13
C20	Roger Green	1-Jul-13
C21	Jerome Page	1-Jul-13
C22	Jim Ponder	1-Jul-13
C23	Roger Straw	1-Jul-13
C24	Steven Goetz	1-Jul-13
C25	Mary Frances Kelly Poh	1-Jul-13
C26	Ed Ruszel	1-Jul-13
C27	Jack Ruszel	1-Jul-13
C28	Kathy Kerridge	1-Jul-13
C29	Jon Van Landschoot	1-Jul-13

DEPARTMENT OF TRANSPORTATION
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Flex your power!
Be energy efficient!

June 27, 2013

SOL680059
SOL-680-R2.58
SCH#2013052074

Ms. Amy Million
City of Benicia
250 East L Street
Benicia CA 94510

Dear Ms. Million:

Valero Crude by Rail / Mitigated Negative Declaration

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the project referenced above.

Traffic Operations
Please consider in your mitigation measures ways to reduce the impacts your project may have on Interstate (I-) 680. We are particularly concerned about how your project will impact I-680 / Bayshore Road intersection. The Level of service (LOS) on I-680 Northbound off ramp goes from a LOS D to a LOS F. Please find ways to mitigate this impact your project has on this off ramp to maintain or improve the LOS.

Should you have any questions regarding this letter, please contact Keith Wayne of my staff by telephone at (510) 286-5737, or by email at keith_wayne@dot.ca.gov.

Sincerely,

ERIK ALM, AICP
District Branch Chief
Local Development – Intergovernmental Review

c: Scott Morgan, State Clearinghouse

WRITTEN COMMENT # A1

AMPORTS

APS West Coast, Inc.
P.O. Box 315
1997 Elm Road
Benicia, CA 94510
Tel: (707) 745-2394
Fax: (707) 746-1485

June 27, 2013

Brad Kilger
City Manager and Benicia Planning Commission
City of Benicia
250 East L Street
Benicia, CA 94510

Re: Letter of Clarification (Valero Crude by Rail Project)

Dear Mr. Kilger,

There appears to be a fair amount of misinformation regarding the Valero crude by rail project and its potential impact on AMPORTS and the Port of Benicia.
For clarification, Valero operates their own marine terminal. A reduction in vessels delivering crude to their terminal will have no economic or operational impact on AMPORTS or our port operations

.
The record should also show, AMPORTS operates Valero's petcoke silos and provides the associated marine terminal services at AMPORTS pier. This operation should be unaffected by the crude by rail project as well.

If you have any questions regarding the impact of this project on AMPORTS or the Port of Benicia, please do not hesitate to give us a call.

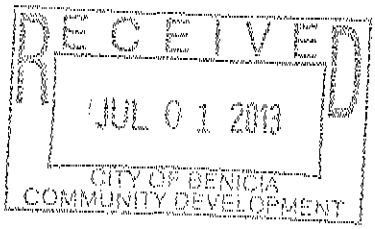
Best Regards,

Randy Scott
General Manager
Amports - Benicia

WRITTEN COMMENT # B1

NATURAL RESOURCES DEFENSE COUNCIL

July 1, 2013



Via Fax to
City of Benicia Community Development Department
Attn: Amy Million
250 East L Street
Benicia, CA 94510
Fax: (707) 747-1637

Re: Notice of Intent to Adopt a Mitigated Negative Declaration for the Valero Crude by Rail Project

Dear Ms. Million:

On behalf of the Natural Resources Defense Council (NRDC), which has over 1.4 million members and activists, 250,000 of whom are Californians and approximately 100 of whom reside in Benicia, we submit the following comments on the Notice of Intent to Adopt a Mitigated Negative Declaration for the Valero Crude by Rail Project. The Notice of Intent for the project was issued on May 28, 2013, and indicated that the public comment period closes on July 1, 2013. Valero applied for a land use permit from the City of Benicia in December of 2012 to allow Valero to receive crude oil by train in quantities up to 70,000 barrels per day, in 100 rail cars per day.

Although the May 31, 2013 Initial Study/Mitigated Negative Declaration [IS/MND] on the Valero Crude by Rail Project assumed the project would cause no significant unmitigated effects on the environment, the IS/MND failed to consider all potential impacts. Our evaluation of the Project, as well as that of two independent experts retained by NRDC to evaluate the project, indicates that it will likely result in significant environmental impacts that have been neither discussed in the Initial Study nor mitigated under the IS/MND. Our comments below focus on air quality, public health, public safety, noise, general hazards and ecological risks.[1]

Because this Project could result in significant impacts to the environment, an Environmental Impact Report [EIR] must be prepared and circulated for public comment before the City may lawfully approve the project. Any significant impacts revealed by the EIR should be thoroughly analyzed and fully mitigated.

I. Air Quality and Public Health Impacts

The two key premises of the IS/MND's air quality analysis—that the new "North American-sourced crudes" received by the refinery as a result of the project will have a sulfur

[1] Selected sources cited have been provided to the City of Benicia in hard copy. All sources cited in NRDC's comments and in the expert reports will be provided in CD to follow.

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WRITTEN COMMENT # B2

content and density similar to the refinery's current slate, and that as a result, air emissions will not significantly change—is both unsupported and demonstrably wrong. The range of sulfur contents and densities projected for the new crude slate is wide, and air impacts could vary substantially within that range. Even more importantly, air emissions from crude refining depend on a host of characteristics other than sulfur content and density, and likely changes in those other characteristics are not disclosed or discussed by the IS/MND at all. Nor are other potentially significant air impacts, as further discussed below. The IS/MND thus fails to recognize the full suite of potential air quality and public health impacts of this project or provide any meaningful mitigation for those impacts.

No mitigation is included for the operational phase of this project. The operation of this project has very serious implications for air quality and public health that are not discussed in the IS/MND because the IS/MND fails to consider the appropriate scenarios of crude oils that may be transported by rail.

Valero's application states that "[t]he crude oil to be transported by rail cars is expected to be of similar quality compared to existing crude oil imported by marine vessel" and that the Project would not result in changes in refinery emissions. The May 31, 2013 IS/MND also assumes that there would be no significant change in crude oil slate due to the Project and no change in refinery emissions. But neither Valero's application nor the IS/MND provide data, let alone any analysis, sufficient to support these assumptions.

We have included as attachments to our comment letter, two expert reports that evaluate whether this Project would impact the crude oil slate or refinery emissions. The first report, by The Goodman Group, discusses changes to the refinery's crude slate that would likely occur due to the Crude by Rail Project. The report concludes that, although much of the relevant information needed to evaluate the proposed Project's exact effect on crude oil slate was not made publically available by either Valero or the City of Benicia, the Project is likely to significantly affect crude quality. In particular, the project is likely in the long-term to facilitate the refinery's use of Canadian tar sand crudes blended with diluent or "DilBits."

The second report, by Dr. Phyllis Fox, concludes that Canadian tar sand crudes blended with diluent have the potential to significantly change the profile of and increase air emissions compared to current crude slates. These changes may be, and indeed are likely to be, significant. The transport and refining of dilbits could significantly increase emissions of a wider range of pollutants including but not limited to volatile organic compounds (VOCs); hazardous air pollutants, including benzene and lead; and highly odiferous sulfur compounds. This additional pollution would degrade ambient air quality, adversely affect the health of workers and residents around the subject facilities, and create public nuisance odors. Further, the high acid levels in these crudes would accelerate corrosion of refinery components, contributing to equipment failure and increased accidental releases.

Unfortunately, contrary to CEQA's goals of public disclosure and evaluation, the IS/MND does not disclose enough specific information about the chemical composition of the crudes that would be imported and the crudes that would be displaced to fully assess crude quality changes and resulting air quality and other impacts. The number and nature of the

deficiencies are so substantial that the IS/MND should be withdrawn. The City should prepare an EIR with a complete Project description and a thorough environmental impact analysis.

The minor mitigations included for the construction component of the project amount to little more than dust control. The construction phase of the project should require all trucks, construction equipment and any other equipment utilizing a diesel engine to meet the latest and cleanest U.S. EPA emission standards or be retrofitted with exhaust controls to achieve similar emission reductions.

A. Increased Air Emissions Due to Heavier, Lower Quality Crude Oil

The IS/MND fails to disclose or quantify the increases in emissions that could and likely would result from modifications to the crude slate at the Valero refinery that could and likely would result from the Crude by Rail Project. As noted in the concurrently submitted expert report of The Goodman Group, publicly disclosed information supports a finding that the rail project could foreseeably lead to replacing as much as 40% or more of the refinery's current crude slate (70,000 barrels per day) with tar sands crudes. This would make the refinery's overall crude slate heavier, increase emissions, and result in significant environmental impacts.

The CEQA baseline that must be considered for this project is the current slate of crude oil. Current refinery conditions and current air emissions must be analyzed. The use of the proper CEQA baseline is critical to accurately evaluate impacts. The Refinery operates under a permit issued by the Bay Area Air Quality Management District (BAAQMD). This permit establishes maximum amounts of regulated pollutants that can be emitted. However, even if emissions increases from the Crude by Rail Project fell within the limits of existing permits and plans, those increases may still be significant for purposes of CEQA. A long line of Court of Appeal decisions and a California Supreme Court decision hold that impacts of a proposed project are to be compared to the actual environmental conditions existing at the time of CEQA analysis, rather than to allowable conditions defined by a plan or regulatory framework, such as the BAAQMD permit. The California Supreme Court specifically concluded, regarding the ConocoPhillips refinery in Los Angeles, that the pre-existing permits did not establish the baseline for CEQA analysis. *Communities for a Better Environment v. South Coast Air Quality Management District (2010) 48 Cal.4th 310.*

Thus, even if the emission increases identified below, when fully analyzed, fell within existing permit limits, or potential future emissions analyzed with respect to other projects,[2] this would not exclude them from CEQA review for the Crude by Rail Project. The increases in emissions that will occur from importing "North American-sourced crudes" must be quantified and evaluated under CEQA as of current conditions. (And even if those increased emissions had

[2] Although the IS/MND neglected to discuss the Valero Improvement Project (VIP) that began in 2002 and remains in progress, that Project envisioned process changes designed to facilitate the import and processing of much higher sulfur and heavier crudes than the current slate. Documents related to the VIP are relevant to our comments because those VIP documents articulate Valero's clear intent to process much dirtier crudes, and provide some insight into the additional energy usage required and potential increased air emissions.

been considered earlier, they would now have to be evaluated now within the regulatory and other framework on the ground now.)

In fact the potential air emissions increases related to this project would be significant, would exceed BAAQMD CEQA significance thresholds and potentially would contribute to adverse health impacts, malodors, and major accidental releases, as well as degradation of ambient air quality. The IS/MND fails to evaluate these potential emission increases and their environmental consequences, yet we find that they are significant and unmitigated, requiring the preparation of an EIR.

1) Changes in Crude Slate and Chemical Composition

The air quality impacts of refining North American-sourced crudes such as tar sands depends on the chemical and physical composition of the refinery slate with tar sands crude compared to the current slate. The current slate includes very little tar sands, from 0.5% to 2% of the Refinery total crude slate over the period 2010 to 2012. The Crude by Rail Project could increase the heavy, sour tar sands crude by up to 70,000 BPD, or up to 42% of the permitted refinery throughput. This represents a significant increase in a crude with a dramatically different chemical composition, which will change the emissions profile and cause significant increases in emissions of some pollutants compared to the emissions from the Refinery's current crude slate.[3]

The U.S. Geological Survey ("USGS"), for example, reported that "natural bitumen," the source of all Canadian tar sands-derived oils, contains 102 times more copper, 21 times more vanadium, 11 times more sulfur, six times more nitrogen, 11 times more nickel, and 5 times more lead than conventional heavy crude oil, such as those currently refined from Ecuador, Columbia, and Brazil.[4] These pollutants contribute to smog, soot, acid rain, and odors that affect residents nearby.

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[3] Straatiev and other, 2010, Table 1; Brian Hitchon and R.H. Filby, Geochemical Studies - I Trace Elements in Alberta Crude Oils, http://www.ags.gov.ab.ca/publications/OFR/PDF/OFR_1983_02.PDF; F.S. Jacobs and R.H. Filby, Trace Element Composition of Athabasca Tar Sands and Extracted Bitumens, Atomic and Nuclear Methods in Fossil Energy Research, 1982, pp 49-59, *available at* http://link.springer.com/book/10.1007/978-1-4684-4133-8/page/1;James G. Speight, The Desulfurization of Heavy Oils and Residua, Marcel Dekker, Inc., 1981, Tables 1-1, 2-2, 2-3, 2-4 and p. 13 and James G. Speight, Synthetic Fuels Handbook: Properties, Process, and Performance, McGraw-Hill, 2008, Tables A.2, A.3, and A.4; Pat Swafford, Evaluating Canadian Crudes in US Gulf Coast Refineries, Crude Oil Quality Association Meeting, February 11, 2010, Available at: http://www.coqa-inc.org/20100211_Swafford_Crude_Evaluations.pdf.

[4] R.F. Meyer, E.D. Attanasi, and P.A. Freeman, Heavy Oil and Natural Bitumen Resources in Geological Basins of the World, U.S. Geological Survey Open-File Report 2007-1084, 2007, p. 14, Table 1, Available at http://pubs.usgs.gov/of/2007/1084/OF2007-1084v1.pdf.

Additionally, many of these chemicals pose a direct health hazard from air emissions. These metals, for example, mostly end up in the coke. Greater amounts of coke are produced by the tar sands crudes than the current crude slate. The California Air Resources Board has classified lead as a pollutant with no safe threshold level of exposure below which there are no adverse health effects. Thus, just the increase in lead from switching up to 42% of the slate to tar sands crude is a significant impact that was not disclosed in the IS/MND. Accordingly, crude quality is critical to a thorough evaluation of the impacts of a crude switch, such as proposed here.

A good crude assay is essential for comprehensive crude oil evaluation.[5] The type of data required to evaluate emissions would require, at a minimum, the following information:

- Trace elements (As, B, Cd, Cl, Co, Cr, Cu, Hg, Mn, Mo, Ni, Pb, Sb, Se, U, V, Zn)
- Nitrogen (total & basic)
- Sulfur (total, mercaptans, H_2S)
- Residue properties (saturates, aromatics, resins)
- Acidity
- Aromatics content
- Asphaltenes (pentane, hexane and heptane insolubles)
- Hydrogen content
- Carbon residue (Ramsbottom, Conradson)
- Distillation yields
- Properties by cut
- Hydrocarbon analysis by gas chromatography

Valero is likely to have access to the crude assay or "fingerprint" of the oil, but it was not made available to the public, foreclosing any meaningful public review. The IS/MND does not contain any crude assays for the current refinery slate, the crude that would be imported by rail, or the crude that is currently imported by ship but would be replaced. The IS/MND also does not contain an analysis of the impact of changes in crude quality on air emissions, asserting that there would be no change. The Initial Study should have evaluated the impacts of refining tar sands crudes on air emissions and other residuals or included conditions of certification specifically prohibiting their import, as publicly available information indicates that Valero is considering tar sands crudes and they would arrive at the Refinery with the largest discount relative to other crudes.

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[5] CCQTA, Canadian Crude Oil Quality Past, Present and Future Direction, February 7, 2012, pp. 8 ("Need more than sulfur and gravity to determine the "acceptability and valuation" of crude oil in a refinery. The crude oil's hydrocarbon footprint and contaminants determine the value of crudes.."), Available at: http://www.choa.ab.ca/index.php/ci_id/9210/la_id/1/, provided as Appendix I to TGG Comments.

Although specific information is lacking, significant impacts can reasonably be expected from including tar sands crudes in the crude slate. The IS/MND claims that new "North American-sourced crudes" will not significantly change the range of sulfur content and density of the crude slate; however, it is possible and probable for the range of API and sulfur reported in the IS/MND to remain similar, yet with relatively small shifts in the average levels of sulfur and density and with major shifts in other properties, for emissions to increase. Essentially, the premise of the IS/MND that the composition of the crude slate will not change and thus will not impact air emissions, is inherently false.

For example, sulfur content of crude oils represents a complex collection of individual chemical compounds such as hydrogen sulfide, mercaptans, thiophene, benzothiophene, methyl sulfonic acid, dimethyl sulfone, thiacyclohexane, etc. Each crude has a different suite of individual sulfur chemicals. The impacts of "sulfur" depend upon the specific sulfur chemicals and their relative concentrations, not on the range of total sulfur expressed as a percent of the crude oil by weight. Although a range in the total sulfur content of rail-imported crude and the current crude slate may appear similar, even a small increase in total sulfur content can have profound impacts, and the composition of sulfur species also matters. A minor increase in sulfur content was reported by the Federal Chemical Safety Board (CSB) as a major contributing factor in the recent (August 2012) catastrophic fire at the Chevron Richmond Refinery in California.

Similarly, while the lighter sulfur compounds such as mercaptans and disulfides found in light sweet crudes may not significantly increase the overall weight percent sulfur in the crude slate, as claimed in the IS/MND, they do lead to impacts, such as aggressive sulfidation corrosion, which can lead to accidental releases.[6] As another example, the specific sulfur compounds will determine which compounds will be emitted from storage tanks and fugitive component, some of which could result in significant odor impacts, e.g., mercaptans. Thus, regardless of what crude might be brought in by rail, there are potential significant environmental impacts that are due to characteristics of that oil besides total sulfur and API gravity.

The specific chemicals in crude oil also determine which ones will be volatile and lost through equipment leaks and outgassed from tanks, which ones will be difficult to remove in hydrotreaters and other refining processes (thus determining how much hydrogen and energy must be expended to remove them), which ones will cause malodors, and which ones might aggravate corrosion, leading to accidental releases. The IS/MND failed to consider these finer details that have important implications for air quality and public health, and thus, failed to satisfy the disclosure requirements of CEQA and failed to analyze relevant impacts.

2) Heavier Crudes Require More Processing

Canadian tar sands bitumen is distinguished from conventional petroleum by the small concentration of low molecular weight hydrocarbons and the abundance of high molecular

[6] See, for example, Jim McLaughlin, Changing Your Crude Slate, Becht New, May 24, 2013, Available at: http://becht.com/news/becht-news/.

weight polymeric material.[7] Crudes derived from Canadian tar sands bitumen—DilBits, Synthetic crude oils (SCOs) and the combination of the two (SynBits)—are heavier, i.e., have larger, more complex molecules such as asphaltenes,[8] some with molecular weights above 15,000.[9] They generally have higher amounts of coke-forming precursors; larger amounts of contaminants (sulfur, nitrogen nickel, vanadium) that require more intense processing to remove; and are deficient in hydrogen, compared to other heavy crudes.

Thus, to convert them into the same refined products requires more utilities -- electricity, water, heat, and hydrogen. This requires that more fuel be burned in most every fired source at the refinery and that more water be circulated in heat exchangers and cooling towers. Further, this requires more fuel to be burned in any supporting off-site facilities, such as power plants that may supply electricity or Steam-Methane Reforming Plants that may supply hydrogen. Under CEQA, these indirect increases in emissions caused by a project must be included in the impact analysis. The increases in fuel consumption also releases increased amounts of NO_x, SO_2, VOCs, CO, PM10, PM2.5, and HAPs as well as greenhouse gas emissions (GHG). The IS/MND fails to analyze these impacts of crude composition on the resulting emissions from generating increased amount of these utilities.

a. Higher Concentrations of Asphaltenes and Resins

The severity (e.g., temperature, amount of catalyst, hydrogen) of hydrotreating crude oil in a refinery depends on the type of compound a contaminant is bound up in. Lower molecular weight compounds are easier to remove. The difficulty of removal increases in this order: paraffins, naphthenes, and aromatics.[10] Most of the contaminants of concern in tar sands crudes are bound up in high molecular weight aromatic compounds such as asphaltenes that are difficult to remove, meaning more heat, hydrogen, and catalyst are required to convert them to lower molecular weight blend stocks. Some tar sands-derived vacuum gas oils (VGOs), for example, contain no paraffins of any kind. All of the molecules are aromatics, naphthenes, or sulfur species that require large amounts of hydrogen to hydrotreat, compared to other heavy crudes.[11]

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[7] O.P. Strausz, The Chemistry of the Alberta Oil Sand Bitumen, Available at: http://web.anl.gov/PCS/acsfuel/preprint%20archive/Files/22_3_MONTREAL_06-77_0171.pdf.

[8] Asphaltenes are nonvolatile fractions of petroleum that contain the highest proportions of heteroatoms, i.e., sulfur, nitrogen, oxygen. The asphaltene fraction is that portion of material that is precipitated when a large excess of a low-boiling liquid hydrocarbon such as pentane is added. They are dark brown to black amorphous solids that do not melt prior to decomposition and are soluble in benzene and aromatic naphthas.

[9] O.P. Strausz, The Chemistry of the Alberta Oil Sand Bitumen, Available at: http://web.anl.gov/PCS/acsfuel/preprint%20archive/Files/22_3_MONTREAL_06-77_0171.pdf.

[10] James H. Gary, Glenn E. Handwerk, and Mark J. Kaiser, Petroleum Refining: Technology and Economics, 5th Ed., CRC Press, 2007, p. 200 and A.M. Aitani, Processes to Enhance Refinery-Hydrogen Production, Int. J. Hydrogen Energy, v. 21, no. 4, pp. 267-271, 1996.

[11] See, for example, the discussion of hydrotreating and hydrocracking of Athabasca tar sands cuts in. Gary R. Brierley, Visnja A. Gembicki, and Tim M. Cowan, Changing Refinery Configurations for Heavy and Synthetic Crude Processing, 2006, pp. 11-17. Available at:

Asphaltenes and resins generally occur in tar sands bitumens in much higher amounts than in other heavy crudes. They are the nonvolatile fractions of petroleum and contain the highest proportions of sulfur, nitrogen, and oxygen.[12] They have a marked effect on refining and result in the deposition of high amounts of coke during thermal processing in the coker. They also form layers of coke in hydrotreating reactors, requiring increased heat input, leading to localized or even general overheating and thus even more coke deposition. This seriously affects catalyst activity resulting in a marked decrease in the rate of desulfurization. They also require more intense processing in the coker required to break them down into lighter products. These factors require increases in steam and heat input, both of which generate combustion emissions -- NO_X, SO_X, CO, VOCs, PM10, and PM2.5.

Further, if the crude includes a synthetic crude, SCO, for example, the material has been previously hydrotreated. Thus, the remaining contaminants (e.g., sulfur, nitrogen), while present in small amounts, are much more difficult to remove (due to their chemical form, buried in complex aromatics), requiring higher temperatures, more catalyst, and more hydrogen.[13]

The higher amounts of asphaltenes and resins generate more heavy feedstocks that require more severe processing than lighter feedstocks. The coker, for example, makes more coker distillate and gas oil that must be hydrotreated, compared to conventional heavy crudes. Similarly, the Crude Unit makes more atmospheric and vacuum gas oils that must be hydrotreated.[14] This increases emissions from these units, including fugitive VOC emissions from equipment leaks and combustion emissions from burning more fuel.

b. Hydrogen Deficient

Tar sands crudes are hydrogen deficient compared to heavy and conventional crude oils and thus require substantial hydrogen addition during refining, beyond that required to remove contaminants (sulfur, nitrogen, metals). This again means more combustion emissions from burning more fuel.

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https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId=%7BA07DE342-E9B1-402A-83F7-36B18DC3DD05%7D&documentTitle=5639138.

[12] James G. Speight, The Desulfurization of Heavy Oils and Residua, Marcel Dekker, Inc., 1981, Tables 1-1, 2-2, 2-3, 2-4 and p. 13 and James G. Speight, Synthetic Fuels Handbook: Properties, Process, and Performance, McGraw-Hill, 2008, Tables A.2, A.3, and A.4.

[13] See, for example, Brierley et al. 2006, p. 8 ("The sulfur and nitrogen species left in the kerosene and diesel cuts are the most refractory, difficult-to-treat species that could not be removed in the upgrader's relatively high-pressure hydrotreaters."); Turini et al. 2011 p. 4.

[14] Turini et al. Processing Heavy Crudes in Existing Refineries, prepared for AIChE Spring Meeting, Chicago, IL 2011, p. 9.; available at: http://www.aiche-fpd.org/listing/112.pdf

c. Higher Concentrations of Catalyst Contaminants

Tar sands bitumens contain about 1.5 times more sulfur, nitrogen, oxygen, nickel and vanadium than typical heavy crudes.[15] Thus, much more hydrogen per barrel of feed and higher temperatures would be required to remove the larger amounts of these chemicals. These impurities are removed by reacting hydrogen with the crude fractions over a fixed catalyst bed at elevated temperature. The oil feed is mixed with substantial quantities of hydrogen either before or after it is preheated, generally to 500 F to 800 F.[16]

Canadian tar sands crudes generally have higher nitrogen content, 3,000 to >6,000 ppm[17] and specifically higher organic nitrogen content, particularly in the naphtha range, than other heavy crudes.[18] This nitrogen is mostly bound up in complex aromatic compounds that require a lot of hydrogen to remove. This affects emissions in five ways.

First, additional hydrotreating is required to remove them, which increases hydrogen and energy input. Second, they deactivate the cracking catalysts, which requires more energy and hence more emissions to achieve the same end result. Third, they increase the nitrogen content of the fuel gas fired in combustion sources, which increases NO_x emissions from all fired sources that use refinery fuel gas. Fourth, nitrogen in tar sands crudes is present in higher molecular weight compounds than in other heavy crudes and thus requires more hydrogen and energy to remove. Fifth, some of this nitrogen will be converted to ammonia and other chemically bound nitrogen compounds, such as pyridines and pyrroles. These become part of the fuel gas and could increase NO_x from fired sources. They further may be routed to the flares, where they would increase NO_x emissions.

These types of chemical differences between the current crude slate and the new crude slate facilitated by the Crude by Rail Project were not addressed at all in the IS/MND. Some of these increased utility impacts were revealed in the VIP FEIR as of 2002. For example, the VIP FEIR indicated that the then-proposed changes in the crude slate would cause: (1) an increase in electricity demand of 23 MW; (2) an increase in natural gas consumption of 9.6 MMscf/day; (3) an increase in the firing rate of heaters and boilers of 400 MMBtu/hr; (4) an increase in the hydrogen capacity of 30 MMscf/day; and an increase in coker capacity of 5,000 BPD. Mitigations were proposed in the VIP FEIR for these significant increases in utility demands. However, this decades-old analysis has not been re-evaluated to determine if the current

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[15] R.F. Meyer, E.D. Attanasi, and P.A. Freeman, Heavy Oil and Natural Bitumen Resources in Geological Basins of the World, U.S. Geological Survey Open-File Report 2007-1084, 2007, p. 14, Table 1, Available at http://pubs.usgs.gov/of/2007/1084/OF2007-1084v1.pdf.

[16] James H. Gary, Glenn E. Handwerk, and Mark J. Kaiser, Petroleum Refining: Technology and Economics, 5th Ed., CRC Press, 2007, p. 200 and A.M. Aitani, Processes to Enhance Refinery-Hydrogen Production, Int. J. Hydrogen Energy, v. 21, no. 4, pp. 267-271, 1996.

[17] Murray R. Gray, Tutorial on Upgrading of Oil Sands Bitumen, University of Alberta, Available at: http://www.ualberta.ca/~gray/Links%20&%20Docs/Web%20Upgrading%20Tutorial.pdf.

[18] See, for example, James G. Speight, Synthetic Fuels Handbook: Properties, Process, and Performance, McGraw-Hill, 2008, Appendix A.

proposed change in crude slate would result in further increased impacts or if the changed regulatory framework requires more aggressive mitigation.

3) *Failure to Mitigate Air Emissions of Crudes*

The VIP environmental analysis was performed over 10 years ago. Much has changed in the last 10 years, from the suite of tar sands products available in the market, to the transportation options (marine shipping may have been the focus 10 years ago, while the current development is for rail), to the timing of implementation of the VIP, to the regulatory framework. Thus, a new, full, thorough analysis is required in conjunction to the proposed Crude by Rail Project and the crude slate composition. The impacts of importing unidentified crudes by rail cannot be reasonably evaluated without considering and re-evaluating the impacts of the VIP modifications to the refinery.

a. VOC emissions of the Project are Significant and Unmitigated

The VIP FEIR, for example, assumes that the use of a higher percentage of sour crudes would mitigate increases in VOC emissions from increasing crude throughput.[19] However, the dilbits that may now be imported with this Project would result in much higher VOC emissions than the originally anticipated heavier crude oil. These VOC emissions include large amounts of hazardous air pollutants, such as benzene, toluene and xylenes that result in significant health impacts, including elevated cancer risk.

Increased VOC emissions impacts have not been sufficiently analyzed for the current project. While we have focused our comments mainly on the reasonably foreseeable possibility that the Crude by Rail project will bring in heavy bitumen tar sands crudes, the IS/MND asserts that the imported crudes could include up to 70,000 BPD of light, low density crudes, which would create increased VOC emissions. These crudes have a much higher vapor pressure than the crude slate contemplated in the VIP FEIR and would significantly increase VOC emissions from tanks, pumps, compressors, valves, and connectors throughout the Refinery compared to the scenario analyzed in the VIP FEIR. Further, the FEIR explicitly assumes that the imported heavy sour crudes would mitigate increases in VOC emissions. This assumption did not consider the fact that diluents are now widely used to blend with the crudes, which similarly have significant VOC emissions increases associated with them, discussed below.

[19] ESA, Valero Refining Company's Land Use Application for the Valero Improvement Project, Environmental Impact Report, Draft, October 2002 (DEIR), The Benicia Planning Commission certified the Final EIR, consisting of the DEIR and the Responses to Comments in Resolution No. 03-4. This FEIR was amended in 2007. See VIP RTC, p. IV-61. Supporting documents available at: http://www.ci.benicia.ca.us/index.asp?Type=B_BASIC&SEC=%7B737165B4-11C5-4974-9B0B-0AE4AC535ECC%7D.

The BAAQMD CEQA significance threshold for VOCs is 15 tons/year based on conservative 1999 guidance.[20] Assuming 70,000 BPD of the crude throughput or 42% of the total, is light sweet crude, as now asserted in the Crude by Rail project, the VOC emissions would increase to more than 104 tons/year or by 31 tons/year. This exceeds the BAAQMD CEQA significance threshold by a factor of two and is a very significant unmitigated impact, triggering an EIR. Actual increases could be much higher under any of the currently understood plausible scenarios, importing light sweet crude under the Crude by Rail Project, or importing diluent-blended DilBit under the VIP project, as explored further below.

b. Cumulative impacts of simultaneous construction of the VIP Project and the Crude By Rail Project are significant and unmitigated.

The Initial Study for the Crude by Rail Project estimated that the daily average construction exhaust emissions from building the rail terminal would be 51.9 lb/day.[21] The CEQA significance threshold is 54 lb/day.[22] Taken together with NOx emissions from the VIP Project, which is still being constructed, cumulative NOx emissions are likely to exceed the significance threshold. The last portion of the VIP project, the new Hydrogen Plant, will be under construction at the same time that the new rail terminal is being constructed. The VIP FEIR did not calculate construction emissions, as this was not required at the time, which is an example of the change in regulatory framework. If the NOx emissions from constructing the Hydrogen Plant would exceed 2.1 lb/day, cumulative NOx emissions from simultaneously constructing the Hydrogen Plant and the Crude by Rail project would be cumulatively significant. The IS/MND does not analyze cumulative NOx emissions and provides no support for an implicit assumption that NOx emissions from constructing the Hydrogen Plant would be less than 2.1 lb/day (i.e., 25 times less than from constructing the rail terminal). It is reasonable to assume—at least absent contrary analysis—that the emissions from constructing the Hydrogen Plant will exceed 2.1 lb/day (i.e., not be 25 times less than for constructing the rail terminal) and that the cumulative impacts of constructing the two projects simultaneously will exceed the significance threshold.

c. Emissions must be reduced to assure that regulatory levels are not exceeded.

Ten years have passed since the environmental analysis was done for the VIP and the FEIR was certified. As the VIP FEIR was certified in 2003, and amended in 2007, the regulatory and informational framework within which the Project would be developed today has

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[20] Newer guidelines adopted in 2010 lowered the thresholds of significant for VOCs and other pollutants to 10 tons per year. However, the newer guidance is on hold due to ongoing litigation. See: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES.aspx

[21] ESA, Valero Crude by Rail Project, Initial Study/Mitigated Negative Declaration, Use Permit Application 12PLN-00063, Prepared for City of Benicia, May 2013,Table 3-1.

[22] BAAQMD Recommended CEQA Threshold of Significance, Available at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/Staff-Recommended%20and%20Existing%20CEQA%20Thresholds%20Table%2010-07-09.ashx?la=en.

changed dramatically, rendering the 2002 analysis obsolete.

Since the VIP FEIR was certified in 2003, new scientific evidence about the potential adverse impacts of air pollutants has become available, and in response, new guidance has been published and several federal and state ambient air quality standards have been revised. These include:

- The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005 and became effective on May 17, 2006.
- The EPA lowered the 24-hour PM2.5 standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$ in 2006. EPA designated the Bay Area as nonattainment of the PM2.5 standard on October 8, 2009.
- On June 2, 2010, the U.S. EPA established a new 1-hour SO_2 standard, effective August 23, 2010.
- The EPA promulgated a new 1-hour NO_2 standard of 0.1 ppm, effective January 22, 2010.
- The EPA issued the greenhouse gas tailoring rule in May 2010, which requires controls of GHG emissions not contemplated in the VIP FEIR.
- The California Air Resources Board has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure below which there are no adverse health effects determined.
- The EPA issued a final rule for a national lead standard, rolling 3-month average, on October 15, 2008.

Emissions must be reduced to assure that these new regulatory levels are not exceeded. Lead, for example, can be present in very high concentrations in fugitive dusts from coke storage, handling, and export, especially when heavy sour crudes are being processed. There is a long history of nuisance coke dust issues at this Refinery that impact residents.[23] The VIP would increase coke production and thus fugitive coke dust emissions with elevated lead levels. The proposed Crude by Rail Project also could increase coke production, depending upon the specific "North American-sourced crude" that it imports. [24] Coke contains many contaminants including lead.[25] The California Air Resources Board has concluded there is no safe threshold level of exposure for lead; any amount poses significant health risks. Thus, the cumulative increase in coke fugitive emissions estimated in the VIP EIR and facilitated by the Crude by Rail Project are a significant public health impact.

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[23] See, e.g., VIP DEIR, p. 4.2-14.

[24] The VIP DEIR did not disclose the actual coke increase, but did acknowledge that it would increase coke exports over the dock by 12 ships per year and by rail of 5 rail cars per day. VIP DEIR, p. 3-52. The capacity of a coke ship and coke rail cars was not disclosed.

[25] For example, see a Material Safety Data Sheet for Petroleum Coke: http://www.tsocorp.com/stellent/groups/corpcomm/documents/tsocorp_documents/msdspetrocoke.pdf

Further, the VIP DEIR assumed health impacts from coke dust exposure would be mitigated by complying with the then-current PM10 and PM2.5 regulations.[26] However, these have been significantly lowered and an ambient air quality standard for lead has been promulgated. There has been no demonstration that the increase in lead and heavy metal-laden coke dust, that could reasonably be expected to result from the Crude to Rail Project, could comply with these new standards, or that such compliance would mitigate lead health impacts, given CARB's zero threshold finding, or that other contaminants in coke dust would not pose a significant risk to public health.

B. Increased Air Emissions from Diluent

The majority of the crudes that will eventually be transported by rail will likely be a blend of bitumen and diluent due to their discounted price compared to conventional light sweet crudes. When heavy crude is shipped by pipeline, it needs to be diluted so that it will flow in the pipe, and this is similarly the case for un-heated railcars. We estimate that the Dilbit likely to be imported by this project will contain 20% to 30% diluent based on the description of the rail facility in the IS/MND.[27]

Regardless, the mixture of diluent and bitumen does not behave the same as a conventional crude, as the distribution of hydrocarbons is very different. The blended lighter diluent evaporates easily when exposed to ambient conditions, leaving behind the heavy ends, the vacuum gas oil (VGO) and residuum.[28] Thus, when a DilBit is released accidentally, it will generally create a difficult to cleanup spill as the heavier bitumen will be left behind.[29] Further, in a storage tank, the diluent also can be rapidly evaporated and emitted through tank openings.

These conventional DilBits, which are the most likely "North American-sourced crude" to be imported by rail over the long term, given the current economic outlook, are sometimes referred to as "dumbell" or "barbell" crudes as the majority of the diluent is C_5 to C_{12} and the majority of the bitumen is C_{30}+ boiling range material, with very little in the more desirable

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[26] VIP DEIR, p. 4.8-14.

[27] Bitumen blended to pipeline specifications can be loaded on and off conventional rail tank cars like other light crudes. The amount of diluent depends on the type of rail tank car and design details of the offloading facilities. Although this information was not provided in the IS/MND, the document did discuss the use of conventional rail cars and a conventional unloading terminal. Further, the number of rail cars, 100 per day, or 700 barrels per car, suggests a lighter material, with more diluent.

[28] The residuum is the residue obtained from the oil after nondestructive distillation has removed all of the volatile materials. Residua are black, viscous materials. They may be liquid at room temperature (from the atmospheric distillation tower) or almost solid (generally vacuum residua), depending upon the nature of the crude oil.

[29] A Dilbit Primer: How It's Different from Conventional Oil, Inside Climate News. Available at: http://insideclimatenews.org/news/20120626/dilbit-primer-diluted-bitumen-conventional-oil-tar-sands-Alberta-Kalamazoo-Keystone-XL-Enbridge?page=show.

middle range.[30] Thus, they yield very little middle distillate fuels, such as diesel, heating oil, kerosene, and jet fuel and much more coke, than other heavy crudes. A typical DilBit, for example, will have 15% to 20% by weight light material, basically the added diluent, 10% to 15% middle distillate, and the balance, >75% is heavy residual material (vacuum gas oil and residue) exiting the distillation column. These characteristics show major differences between DilBits and the crudes currently refined at Benicia.[31]

The large amount of light material in DilBits is very volatile and can be emitted to the atmosphere from storage tanks and equipment leaks of fugitive components (pumps, compressors, valves, fittings) in much larger amounts than other heavy crudes that it would replace. It is unlikely that any other heavy crudes processed at the Refinery currently arrive with diluent, since EIA crude import data do not identify any crudes that are blended with diluent. Thus, the use of diluent to transport tar sands crudes is likely an important difference between the current heavy crude slates processed at the Refinery and the tar sands crudes that could replace them. This diluent will have impacts during railcar unloading as well as at many processing units within the Refinery.

The diluent is a low molecular weight organic material with a high vapor pressure that contains high levels of VOCs, sulfur compounds, and HAPs. These would be emitted during unloading and present in emissions from the crude tank(s) and fugitive components from its entry into the Refinery with the crude until it is recovered and marketed, or at least between the desalter and downstream units where some of it is recovered. The presence of diluent would increase the vapor pressure of the crude, substantially increasing VOC and HAPs emissions from tanks and fugitive component leaks compared to those from displaced heavy crudes not blended with diluent. The IS/MND and the VIP FEIR did not disclose the potential presence of diluent and made no attempt to estimate these diluent-derived emissions.

The composition of some typical diluents is reported on the website, www.crudemonitor.ca.[32] The specific diluents that would be used by the Project are unknown. However, the CrudeMonitor information indicates that several different types of diluents contain very high concentrations (based on 5-year averages) of the hazardous air pollutants

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[30] Gary R. Brierley and others, Changing Refinery Configuration for Heavy and Synthetic Crude Processing, 2006, Available at: https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId=%7BA07DE342-E9B1-402A-83F7-36B18DC3DD05%7D&documentTitle=5639138.

[31] Stratiev and others, 2010, Table 1, compared to DilBit crude data on www.crudemonitor.ca.

[32] Condensate Blend (CRW) - http://www.crudemonitor.ca/condensate.php?acr=CRW; Fort Saskatchewan Condensate (CFT) - http://www.crudemonitor.ca/condensate.php?acr=CFT; Peace Condensate (CPR) - http://www.crudemonitor.ca/condensate.php?acr=CPR; Pembina Condensate (CPM) - http://www.crudemonitor.ca/condensate.php?acr=CPM; Rangeland Condensate (CRL) - http://www.crudemonitor.ca/condensate.php?acr=CRL; Southern Lights Diluent (SLD) - http://www.crudemonitor.ca/condensate.php?acr=SLD.

(HAPs) benzene (5,200 ppm to 9,800 ppm); toluene (10,300 ppm to 25,300 ppm); ethyl benzene (900 ppm to 2,900 ppm); and xylenes (4,600 ppm to 23,900 ppm).

The sum of these four compounds is known as "BTEX" or benzene-toluene-ethylbenzene-xylene. The BTEX in diluent ranges from 27,000 ppm to 60,900 ppm. The BTEX in DilBits, blended from these materials, ranges from 8,000 ppm, to 12,400 ppm.[33] Similarly, the BTEX in synthetic crude oils (SCOs) ranges from 6,100 ppm to 14,100 ppm.[34] These are very high concentrations that were not considered in the emission calculations in the IS/MND nor in the VIP FEIR. These high levels could result in significant worker and public health impacts.

The ATC estimated emissions of these compounds (ATC, Table 3-3) from Tank 1776 and fugitive components using the "default speciation profile" for crude oil from the EPA program, TANKS4.09d, for all constituents except benzene. For benzene, the IS/MND variously claims it substituted either 0.06 wt % or 0.6 wt % for the default value.[35] Thus, the IS/MND's assumptions as to benzene in fugitive emissions are inconsistent. The default crude oil speciation profile from the TANKS4.09d model reports benzene at 0.6 wt %.[36] Thus, the

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[33] DilBits: Access Western Blend (AWB) -http://www.crudemonitor.ca/crude.php?acr=AWB; Borealis Heavy Blend (BHB) -http://www.crudemonitor.ca/crude.php?acr=BHB; Christina Dilbit Blend (CDB) -http://www.crudemonitor.ca/crude.php?acr=CDB; Cold Lake (CL) - http://www.crudemonitor.ca/crude.php?acr=CL; Peace River Heavy (PH) - http://www.crudemonitor.ca/crude.php?acr=PH; Seal Heavy (SH) - http://www.crudemonitor.ca/crude.php?acr=SH; Statoil Cheecham Blend (SCB) - http://www.crudemonitor.ca/crude.php?acr=SCB; Wabasca Heavy (WH) - http://www.crudemonitor.ca/crude.php?acr=WH; Western Canadian Select (WCS) - http://www.crudemonitor.ca/crude.php?acr=WCS; Albian Heavy Synthetic (AHS) (DilSynBit) - http://www.crudemonitor.ca/crude.php?acr=AHS.

[34] SCOs: CNRL Light Sweet Synthetic (CNS) - http://www.crudemonitor.ca/crude.php?acr=CNS; Husky Synthetic Blend (HSB) - http://www.crudemonitor.ca/crude.php?acr=HSB; Long Lake Light Synthetic (PSC) - http://www.crudemonitor.ca/crude.php?acr=PSC; Premium Albian Synthetic (PAS) - http://www.crudemonitor.ca/crude.php?acr=PAS; Shell Synthetic Light (SSX) - http://www.crudemonitor.ca/crude.php?acr=SSX; Suncor Synthetic A (OSA) - http://www.crudemonitor.ca/crude.php?acr=OSA; Syncrude Synthetic (SYN) - http://www.crudemonitor.ca/crude.php?acr=SYN.

[35] See Appendix A.1 of the IS/MND (The Air Permit Application or Authority To Construct, "ATC"), p. 11, pdf 17, in the note following Table 3-3, states that benzene in crude oil was assumed to be 0.6%. However, in Table 3-5, p. 12, pdf 18, it is stated that benzene in the crude oil was assumed to be 0.06%. Similarly, the supporting appendices indicate that 0.06% benzene was actually used in the fugitive emissions calculations. ATC, Attach. B-3, Fugitive Component Emissions, pdf 33. Similar data for tank emission calculations cannot be checked as it is claimed to be confidential. ATC, Attach. B-2.

[36] The profile, "Tanks_Crude_Speciation.xls" can be extracted from the TANKS409d model available at http://www.epa.gov/ttnchie1/software/tanks/ by using the "Data --> Speciation

IS/MND apparently lowered the benzene concentration in rail-imported crude oil by a factor of ten.[37] This contradicts published crude composition for the range of North American-sourced crudes that could be imported by the Project, as reviewed above and summarized in Table 1. The benzene value used in the IS/MND substantially underestimates the amount of benzene that would be present in tank and fugitive component emissions when processing either DilBits or Bakken crudes.

Table 1 compares the concentration of BTEX used to estimate BTEX emissions in the IS/MND with the BTEX concentrations in various diluents, two widely traded DilBits, including the DilBit that Valero used in its cost analysis (Fig. 2), Western Canadian Select, and Bakken crude oils. This table shows that regardless of which material is imported by the Crude by Rail Project, benzene emissions would be much higher than estimated in the IS/MND. Further, benzene emissions are higher in the most recently collected samples than in the five-year averages in Table 1. These benzene emissions would result in significant health impacts.

Profiles --> Export" menu selection and choosing crude oil. This spreadsheet confirms that the default benzene level for crude oils is 0.6wt.%.

[37] The information in IS/MND Appendix A confirms that the lower value for benzene in crude, 0.06wt.%, was used to calculate benzene emissions.

Table 1
Comparison of BTEX Levels Assumed in IS/MND with Levels in Diluents and DilBits

	Default Crude ATC Attach.B-3 (wt.%)	Diluents (5-yr Avg)[38] (wt.%)	Christina DilBit[39] (5-yr Avg) (wt.%)	Western Canadian Select[40] (5-yr Avg) (wt.%)	Bakken[41] Crude (wt.%)
Benzene	0.06	0.83-1.27	0.27	0.15	0.1-1.0
Ethylbenzene	0.4	0.11-0.33	0.06	0.06	0.33
Toluene	1.00	1.32-2.89	0.44	0.27	0.92
Xylenes	1.4	0.59-2.71	0.34	0.27	1.4

The ATC discloses that annual emissions of benzene from Tank 1776 exceed the BAAQMD chronic trigger level (6.4 lb/yr trigger level compared to a net increase of 28.3 lb/yr).[42] Further, the IS/MND and underlying ATC fail to disclose that benzene emissions from fugitive components, when calculated using the correct benzene level (at least 0.6%, rather than 0.06%), also exceed the BAAQMD screening level (6.4 lb/hr screening level compared to 20 lb/hr emitted, adjusted to 0.6% benzene).

The Initial Study conducted a screening health risk assessment. It found no significant health impact.[43] However, the benzene emissions used in this analysis apparently (the records lacks sufficient data to be certain) were underestimated by factors of 2.5 to 4.5 assuming DilBits and up to a factor of 17 for Bakken crudes. Although there is one DilBit with an unusually low benzene concentration of 0.06 wt.%, Borealis Heavy Blend, there is no evidence that this is the only DilBit that would be imported by rail.

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[38] The reported range includes the following diluents: Condensate Blend, Saskatchewan Condensate, Peace Condensate, Pembina Condensate, Rangeland Condensate, and Southern Lights Diluent. The composition data for all of these diluents is found at http://www.crudemonitor.ca. Concentrations reported in volume % (v/v) in this source were converted to weight % by dividing by the ratio of compound density in kg/m^3 at 25 C (benzene =876.5 kg/m^3, toluene = 0.866.9 kg/m^3, ethylbenzene 866.5 kg/m^3, and the xylenes 863 kg/m^3) to crude oil density in kg/m3, as reported at www.crudemonitor.ca, 5-year average. See also Cenovus Energy Inc. Material Safety Data Sheet, Condensate (Sour) and Condensate (Sweet), Available at: http://www.cenovus.com/contractor/msds.html.

[39] Christina DilBit Blend (CDB) -.http://www.crudemonitor.ca/crude.php?acr=CDB. Concentrations reported in volume % (v/v) converted to weight % as explained in footnote 44..

[40] Western Canadian Select (WCS) -http://www.crudemonitor.ca/crude.php?acr=WCS. Concentrations reported in volume % (v/v) converted to weight % as explained in footnote 44..

[41] Cenovus Energy, Material Safety Data Sheet for Light Crude Oil, Bakken (benzene), Available at: http://www.cenovus.com/contractor/docs/CenovusMSDS_BakkenOil.pdf. Other components of BTEX from Keystone DEIS, Tables 3.13-1 (density) and 3.13-2 (BTEX). Concentrations reported in volume % (v/v) converted to weight % as explained in footnote 44.

[42] ATC, p. 17-18 & Table 4-3.

[43] IS, p. II-15.

Although crude oil contains many different chemicals that are carcinogens, benzene is the only carcinogen included in the HAP emission calculations in the IS/MND.[44] The only sources of benzene disclosed in the IS/MND is Tank 1776 and fugitives, which were underestimated due to the use of an anomalously low crude concentration. Thus, the cancer risks reported in the IS/MND in Table 3-3 can be adjusted for this error by multiplying that cancer risk by the benzene ratios reported above. With this correction, the cancer risk to the maximum exposed worker increases from the 4 in a million reported in the IS/MND to up to 20 in a million for DilBits and up to 76 in a million for Bakken crudes. For the maximum exposed residential receptor, the reported cancer risk increases from 2 in a million reported in the IS/MND to up to 10 in a million for DilBits and to 39 in a million for Bakken crudes. These cancer risk levels equal or exceed the assumed cancer significance threshold of 10 in a million. Thus, these are significant unmitigated impacts both to workers and nearby residents that were not disclosed in the IS/MND and are directly caused by the failure of the IS/MND to consider the composition of the crude that is being imported.

Information on diluents from the CrudeMontior also indicates elevated concentrations of volatile mercaptans (9.9 to 103.5 ppm), which are highly odiferous and toxic compounds that will create odor and nuisance problems at the Refinery in the vicinity of the unloading area, crude storage tanks and supporting fugitive components. Mercaptans can be detected at concentrations substantially lower than will be present in emissions from the crude tanks and fugitive emissions from the unloading rack and related components, including pumps, valves, flanges, and connectors.[45]

Thus, unloading, storing, handling and refining bitumens mixed with diluent and shale crudes such as Bakken would emit VOCs, HAPs, and malodorous sulfur compounds, not found in comparable levels in conventional crudes, depending upon the DilBit or shale crude source. There are no restrictions on the crudes, diluent source or their compositions nor any requirements to monitor emissions from tanks and leaking equipment where DilBit-blended and other light crudes would be handled. As the market has experienced shortages of diluents, any material with a suitable thinning ability could be used, which could contain still other hazardous components, with the potential for even greater air quality and health impacts than discussed here.

C. Health Impacts of Chemical Constituents in DilBits

Heavy bitumen tar sands and diluents are composed of hundreds of chemicals with known health impacts. Below is a summary of the health impacts of some of those hazardous compounds associated with refining dirtier crude oils. Many of these compounds present significant hazards to human health at varying levels of exposure.

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[44] IS/MND, Appx. A.

[45] American Industrial Hygiene Association, Odor Thresholds for Chemicals with Established Occupational Health Standards, 1989; American Petroleum Institute, Manual on Disposal of Refinery Wastes, Volume on Atmospheric Emissions, Chapter 16 - Odors, May 1976, Table 16-1.

1. Hydrogen Sulfide is a flammable and colorless gas that smells like rotten eggs. It is a broad spectrum poison that can be lethal at high concentrations. At low concentrations, hydrogen sulfide can cause irritation to the eyes, nose and throat. Additionally, exposure may result in incoordination, memory loss, hallucinations, personality changes, loss of sense of smell, cough, and shortness of breath; people with asthma may experience difficulty breathing. In occupational settings, workers have died from exposure to high levels of hydrogen sulfide.[46]

2. Mercaptans[47] are a large class of toxic compounds that generally have a strong and unpleasant odor even at very low concentrations. They are added in small amounts to natural gas to help detect gas leaks. Because they are extremely flammable, mercaptans present fire and explosion hazards in industrial processe. Exposure to mercaptans may cause irritation of the skin, eyes, and upper respiratory tract. All mercaptans negatively affect the central nervous system. Workers accidentally exposed to high levels of mercaptans experienced muscular weakness, nausea, dizziness, stupor, and uncounsciousness (narcosis).[48]

3. Thiophene[49] is a highly flammable and hazardous component of petroleum.[50] Exposure to thiophene results in adverse effects to the skin, eyes, nose and throat.[51] Workers breathing thiophene vapors generated from normal handling of the material may experience respiratory irritation, dizziness, fatigue, unconsciousness, loss of reflexes, lack of coordination, and vertigo. Long term exposure to thiophene may damage the liver, or produce asthma-like symptoms which may continue for months or years after exposure to the chemical stops.[52]

4. Benzothiophene[53] is a solid compound with an odor similar to naphthalene (mothballs). It is found in petroleum, and used primarily in industries such as pharmaceuticals and in

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[46] Agency for Toxic Substances and Disease Registry, *Toxicological Profile for Hydrogen Sulfide,* U.S. Department of Health and Human Services, July 2006.

[47] Mercaptans are also commonly known as thiols, thioalcohols, or sulphydrates.

[48] Stellman, Jeanne Mager, *Encyclopaedia of Occupational Health and Safety,* vol. 4,Geneva: International Labor Office, 1998.

[49] Thiophene is also called divinylene sulphide, thiacyclopentadiene, and thiofuran

[50] National Library of Medicine Hazardous Substances Databank , 'Thiophne', http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~xlH0IB:1 (accessed June 2013)

[51] New Jersey Department of Health and Senior Services, 'Thiophene Hazardous Substance Fact Sheet', December 2000, http://nj.gov/health/eoh/rtkweb/documents/fs/1851.pdf (accessed June 2013)

[52] Santa Cruz Biotechnology, 'ThiopheneMaterial Safety Data Sheet' March 2009, http://datasheets.scbt.com/sc-251237.pdf (accessed June 2013)

[53]Benzothiophene is also known as thianaphthene, benzo(b)thiophene, 1-benzothiophene, 1-thiaindene, 2,3-benzothiophene, benzothiofuran, benzothiophen, thianaphtene, thianaphthen, thianaphthene, and thionaphthene

research.[54] A person exposed to benzothiophene may experience irritation of the eyes, skin, or respiratory tract.[55]

5. Methylsulfonic acid[56] is used in the process of refining petroleum. The general population is exposed through breathing outdoor air.[57] Methylsulfonic acid is harmful to humans and can irritate or burn the eyes, skin, and mucous membranes.[58] Inhaling methylsulfonic acid vapor is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.[59]

6. Dimethyl sulfone[60,61] is an odorless, combustible liquid and vapor. If inhaled as a dust, it may cause respiratory irritation. It may also cause irritation to the eyes.[62]

7. Thiacyclohexane[63] is a sulfur containing component of crude oil. It is highly flammable, and exists in both liquid and vapor form. Exposure to thiacyclohexane may cause skin or eye irritation. At present, the short and long-term toxicity of this compound is not fully

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[54] Merck Index, 'Thianaphthene Structure Details', n.d., http://themerckindex.cambridgesoft.com/themerckindex/Forms/Search/ContentArea/ChemBioVizSearch.aspx?FormGroupId=200000&AppName=THEMERCKINDEX&AllowFullSearch=true&KeepRecordCountSynchronized=false&SearchCriteriaId=5&SearchCriteriaValue=95-15-8&CurrentIndex=0 (accessed June 2013)

[55] National Institue of Health Haz-Map Database, 'Benzothiophene Haz-Map Category Details', *Haz-Map*, n.d., http://hazmap.nlm.nih.gov/category-details?id=12230&table=copytblagents (accessed June 2013)

[56] Methylsulfonic acid is also called methanesulfonic acid

[57] National Library of Medicine Hazardous Substances Data Bank, 'Methanesulfonic Acid -', *Toxnet: Toxicology Data Network* http://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+5004 (accessed June 2013)

[58] Occupational Safety and Health Administration 'Methanesulfonic Acid Chemical Sampling Information', n.d., http://www.osha.gov/dts/chemicalsampling/data/CH_250710.html (accessed June 2013)

[59] National Library of Medicine Hazardous Substances Data Bank, 'Methanesulfonic Acid', http://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+5004 (accessed June 2013)

[60] Dimethyl sulfone is also known as methyl sulfone, methylsulfonylmethane, sulfonylbismethane, methane, sulfonylbis-, and dimethyl sulphone

[61] Dimethyl sulphone is commonly known as methylsulfonylmethane, or MSM, and used widely as a food supplement and medicine.

[62] Gaylord Chemical Corporation, 'Dimethyl Sulfone Material Safety Data Sheet', August 20, 2004, http://www.clean.cise.columbia.edu/msds/dimethylsulfoxide.pdf (accessed June 2013)

[63] Synonyms include thiapyran, tetrahydro- (4CI), thiopyran, tetrahydro- (6CI), pentamethylenesulfide, penthiophane, tetrahydro-2H thiopyran, tetrahydrothiapyran, tetrahydrothiopyran, thiacyclohexane, thiane. Search for this compound using thiane, or its CAS number 1613-51-0.

understood.[64]

8. Pentane[65] is a volatile organic compound (VOC) commonly found in natural gas and crude oil. Aside from the fact that is highly flammable—mixtures of pentane and air can be explosive—pentane has been identified as a central nervous system (CNS) depressant.[66] Exposure to pentane vapors can cause irritation to the eyes, skin, and respiratory system, as well as, nausea, vomiting, headaches, and dizziness.[67,68] Chronic or long-term exposure can result in anoxia, or a severe lack of oxygen to body organs and tissues.[69] Exposure to high levels of pentane can be deadly.[70]

9. Naphtha[71] is a highly flammable, toxic organic solvent distilled from petroleum with a wide range of industrial and commercial uses. Exposure to naphtha can cause headaches, dizziness, nausea, and vomiting.[72] Naphtha vapor is a central nervous system depressant as well as an irritant of the mucous membranes and the respiratory tract—exposure to high concentrations can cause fatigue, lightheadedness, and loss of consciousness.[73] Female workers exposed to naphtha experienced reproductive impacts in the form of disturbances in menstrual cycles, abnormal uterine bleeding, and a disturbance of the ovarian function.[74] Long-term exposure may cause damage to the liver, kidneys, blood, nervous system, and skin.[75] Naphtha contains benzene which is a known carcinogen.[76]

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[64] Alfa Aesar, 'Tetrahydrothiopyran Material Safety Data Sheet', June 2011, http://www.msds.com/servlet/B2BDocumentDisplay?document_version_nri=5175301&manuf_nri=704&manuf_name=&supplier_nri=704&page_number=1&search_source=centraldb&CLIENT_session_key=A736334_Kitty89&CLIENT_language=2 (accessed June 2013)

[65] Also known as n-Pentane, normal-Pentane

[66] National Library of Medicine Hazardous Substances Data Bank, 'PENTANE', http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~mKkbnT:1 (accessed June 2013)

[67] NIOSH, 'CDC - NIOSH Pocket Guide to Chemical Hazards - n-Pentane', November 2010, http://www.cdc.gov/niosh/npg/npgd0486.html (accessed June 2013)

[68] NIOSH, 'n-Pentane International Chemical Safety Cards', October 1999 http://www.cdc.gov/niosh/ipcsneng/neng0534.html (accessed June 2013)

[69] National Library of Medicine Hazardous Substances Data Bank, 'Pentane', http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~mKkbnT:1 (accessed June 2013)

[70] NIOSH, 'n-Pentane International Chemical Safety Cards', October 1999 http://www.cdc.gov/niosh/ipcsneng/neng0534.html (accessed June 2013)

[71] Like pentane, naphtha may be used as a diluent in heavy crude oils.

[72] New Jersey Department of Health and Senior Services, 'Naphtha Hazardous Substance Fact Sheet', April 2007, http://nj.gov/health/eoh/rtkweb/documents/fs/0518.pdf (accessed June 2013)

[73] National Library of Medicine Hazardous Substances Data Bank, 'Naphtha', http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~PqjFcw:1 (accessed June 2013)

[74] National Library of Medicine Hazardous Substances Data Bank, 'Naphtha', http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~PqjFcw:1 (accessed June 2013)

[75] Collection Care, 'Naphtha Material Safety Data Sheet', June 27, 2011, http://www.collectioncare.org/MSDS/naphthamsds.pdf (accessed June 2013)

BTEX: The following compounds (benzene, toluene, ethylbenzene, and xylene) are some of the VOCs found in petroleum.

10. Benzene is a common component of crude oil and gasoline, and a widespread environmental pollutant resulting mainly from refinery activity.[77] People are primarily exposed to benzene through breathing contaminated air. Benzene is a known carcinogen; long term exposure can cause leukemia.[78] Inhalation of high doses of benzene may impact the central nervous system leading to drowsiness, dizziness, irregular heartbeat, nausea, headaches, and depression.[79] Female workers experiencing high exposure levels over the course of many months experienced reproductive impacts, such as a decrease in the size of their ovaries. In animal studies, breathing benzene was associated with developmental effects such as low birth weight, delayed bone formation, and bone marrow damage.[80]

11. Toluene is a volatile organic compound (VOC) used widely in industry as a raw material and as a solvent. Toluene concentrations are highest in areas of heavy traffic, near gas stations and petroleum refineries. According to California's list of chemicals known to cause cancer or reproductive toxicity, toluene is listed as a developmental toxicant.[81] Similar to many organic solvents, toluene acts as a respiratory tract irritant, particularly at high air concentrations.[82] For this reason, it can be more harmful to people with asthma. A ubiquitous air pollutant, exposure to toluene constitutes a serious health concern as it has negative impacts on the central nervous system. Exposure to toluene can cause headaches, impaired reasoning, memory loss, nausea, impaired speech, hearing, and vision, amongst other health effects.[83] Long term exposure may damage the

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[76] New Jersey Department of Health and Senior Services, 'Naphtha Hazardous Substance Fact Sheet', April 2007, http://nj.gov/health/eoh/rtkweb/documents/fs/0518.pdf (accessed June 2013)

[77] Agency for Toxic Substances and Disease Registry, *Toxicological Profile for Benzene,* U.S. Department of Health and Human Services, August 2007.

[78] California EPA Office of Environmental Health Hazard Assessment, 'Chemicals Known to the State to Cause Cancer or Reproductive Toxicity', 2013, http://oehha.ca.gov/prop65/prop65_list/files/P65single052413.pdf (accessed June 2013)

[79] Agency for Toxic Substances and Disease Registry, *Toxicological Profile for Benzene,* U.S. Department of Health and Human Services, August 2007.

[80] Agency for Toxic Substances and Disease Registry, *Toxicological Profile for Benzene,* U.S. Department of Health and Human Services, August 2007.

[81] California EPA Office of Environmental Health Hazard Assessment, 'Chemicals Known to the State to Cause Cancer or Reproductive Toxicity', 2013, http://oehha.ca.gov/prop65/prop65_list/files/P65single052413.pdf (accessed June 2013)

[82] Agency for Toxic Substances and Disease Registry, *Toluene Toxicity: Case Studies in Environmental Medicine*, U.S. Department of Health and Human Services, Division of Toxicology and Environmental Medicine, February 2001, http://www.atsdr.cdc.gov/csem/toluene/docs/toluene.pdf (accessed June, 2013)

[83] Agency for Toxic Substances and Disease Registry, *Toluene Toxicity: Case Studies in Environmental Medicine*, U.S. Department of Health and Human Services, Division of

liver and kidneys.[84]

12. Ethylbenzene is a commonly occurring component of petroleum. Once refined, it is used in many consumer products such as gasoline, pesticides, varnishes and paints. Ethylbenzene has been recently classified as a possible human carcinogen by the International Agency for Research on Cancer (IARC)[85], and has been associated with a number of adverse health outcomes. Breathing high levels can cause dizziness as well as throat and eye irritation; chronic, low-level exposure over several months to years can result in kidney damage as well as hearing loss.[86]

13. Xylene[87] is a VOC in petroleum. Short term exposure to xylene may result in a number of adverse human health effects including irritation of the skin, eyes, nose and throat, difficulty breathing, damage to the lungs, impaired memory, and possible damage to the liver and kidneys. Long term exposure may affect the nervous system presenting symptoms such as headaches, lack of muscle coordination, dizziness, confusion, and loss of balance.[88] More serious long term health effects include memory impairment, red and white blood cell abnormalities, abnormal heartbeat (in laboratory workers), liver damage, mutagenesis (mutations of genes), reproductive system effects, and death due to respiratory failure.[89]

14. Polycyclic aromatic hydrocarbons (PAHs) are a group of over 100 different chemicals that are formed during incomplete combustion.[90,91,92] Infants and children are *especially*

Toxicology and Environmental Medicine, February 2001, http://www.atsdr.cdc.gov/csem/toluene/docs/toluene.pdf (accessed June, 2013)

[84] National Institute for Occupational Safety and Health, 'Toluene', *NIOSH Pocket Guide to Chemical Hazards*, 2010, http://www.cdc.gov/niosh/npg/npgd0619.html (accessed June 2013)

[85] Henderson, Leigh, David Brusick, Flora Ratpan, and Gauke Veenstra, 'A Review of the Genotoxicity of Ethylbenzene', *Mutation Research/Reviews in Mutation Research,* 635 (2007), 81-89 <doi:10.1016/j.mrrev.2007.03.001>

[86] Agency of Toxic Substances and Disease Registry, *Toxicological Profile for Ethylbenzene, ToxFAQs*, 2010, http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=382&tid=66 (accessed June 2013)

[87] Also known as dimethyl benzene

[88] Agency for Toxic Substances and Disease Registry, *Toxicological Profile for Xylene,* U.S. Department of Health and Human Services, August 2007.

[89] Zoveidavianpoor, M., A. Samsuri, and S. R. Shadizadeh, 'The Clean Up of Asphaltene Deposits in Oil Wells', *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 35 (2013), 22–31 <doi:10.1080/15567036.2011.619630>

[90] Salmon A.G. and Meehan T. Potential Impact of Environmental Exposures to Polycyclic Organic Material (POM) on Children's Health, California Office of Environmental Health Hazard Assessment (OEHHA). http://www.oehha.ca.gov/public_info/public/kids/pdf/PAHs%20on%20Children's%20Health.pdf

susceptible to the hazards of PAHs, a class of known human mutagens, carcinogens, and developmental toxicants found in diesel exhaust.[93] Greater lifetime cancer risks result from exposure to carcinogens at a young age. These substances are known to cross the placenta to harm the unborn fetus, contributing to fetal mortality, increased cancer risk and birth defects.[94] Prenatal exposure to PAHs may also be a risk factor for the early development of asthma-related symptoms and can adversely affect children's cognitive development, with implications for diminished school performance.[95] Exposure of children to PAHs at levels measured in polluted areas can also adversely affect IQ.[96]

15. Lead is a well-known toxic heavy metal with diverse and severe health impacts.[97] In particular, lead is associated with neurological, hematological, and immune effects on children, and hematological, cardiovascular and renal effects on adults. Children are particularly sensitive to the effects of lead, including sensory, motor, cognitive and behavioral impacts. Cognitive effects of special concern include decrements in IQ scores and academic achievement, as well as attention deficit problems. Children in poverty and black, non-Hispanic children face higher exposures to lead and are consequently more susceptible to lead's health impacts. Reproductive effects, such as

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[91] Agency for Toxic Substances and Disease Registry, Public Health Statement for Polycyclic Aromatic Hydrocarbons (PAHs). August 1995.
http://www.atsdr.cdc.gov/PHS/PHS.asp?id=120&tid=25

[92] Perera FP. DNA Damage from Polycyclic Aromatic Hydrocarbons Measured by Benzo[a]pyrene-DNA Adducts in Mothers and Newborns from Northern Manhattan, The World Trade Center Area, Poland, and ChinaCancer Epidemiol Biomarkers Prev 2005;14(3):709–14.

[93] Salmon A.G. and Meehan T. "Potential Impact of Environmental Exposures to Polycyclic Organic Material (POM) on Children's Health," California Office of Environmental Health Hazard Assessment (OEHHA).
http://www.oehha.ca.gov/public_info/public/kids/pdf/PAHs%20on%20Children's%20Health.pdf

Agency for Toxic Substances and Disease Registry, Public Health Statement for Polycyclic Aromatic Hydrocarbons (PAHs). August 1995.
http://www.atsdr.cdc.gov/PHS/PHS.asp?id=120&tid=25.

[94] Perera FP. "DNA Damage from Polycyclic Aromatic Hydrocarbons Measured by Benzo[a]pyrene-DNA Adducts in Mothers and Newborns from Northern Manhattan, The World Trade Center Area, Poland, and China," *Cancer Epidemiology Biomarkers & Prevention* 14, no. 3 (2005):709–14.

[95] Perera FP, Rauh V, Tsai WY, Kinney P, Camann D, et al. "Effects of transplacental exposure to environmental pollutants on birth outcomes in amultiethnic population," *Environmental Health Perspective* 111 (2003): 201–205.
Perera FP et. al. "Effect of Prenatal Exposure to Airborne Polycyclic Aromatic Hydrocarbons on Neurodevelopment in the First 3 Years of Life among Inner-City Children," *Environmental Health Perspective* 114 (2006):1287–1292.

[96] Perera, FP et. al. "Prenatal Airborne Polycyclic Aromatic Hydrocarbon Exposure and Child IQ at Age 5 Years," *Pediatrics* 124 (2009):e195–e202.

[97] The lead health impacts are also derived from the final rule on the National Ambient Air Quality Standards for Lead, 73 Fed. Reg. 66964, 66975-76 (Nov. 12, 2008).

decreased sperm count in men and spontaneous abortions in women, have been associated with lead exposure. EPA has classified lead as a probable human carcinogen.

16. Nickel is associated with chronic dermatitis, respiratory impacts and potentially also reproductive impacts.[98] The EPA has classified nickel refinery subsulfide as a Group A, human carcinogen and nickel carbonyl as a Group B2, probable human carcinogen.

D. Accidental Releases

The Benicia Refinery was built before current American Petroleum Institute (API) standards were developed to control corrosion and before piping manufacturers began producing carbon steel in compliance with current metallurgical codes. While some of Benicia's metallurgy was updated as part of the VIP, metallurgy used throughout much of the Refinery is likely not adequate to handle the unique chemical composition of tar sands crudes without significant upgrades. There is no assurance that required metallurgical upgrades would occur as they are very expensive and not required by any regulatory framework. Experience with changes in crude slate at the nearby Chevron Refinery in Richmond suggests that failure to perform required metallurgical upgrades can lead to catastrophic accidents.[99] The IS/MND is silent on corrosion issues and metallurgical conditions of the Refinery.

Both DilBit and SynBit crudes have high Total Acid Numbers (TAN), which indicates high organic acid content, typically naphthenic acids. These acids are known to cause corrosion at high temperatures, such as occur in many refining units, e.g., in the feed to cokers. Crude oils with a TAN number greater than 0.5 mg KOH/g[100] are generally considered to be potentially corrosive and indicative of a level of concern. A TAN number greater than 1.0 mg KOH/g is considered to be very high. Canadian tar sands crudes are high TAN crudes. The DilBits, for example, range from 0.98 to 2.42 mg KOH/g.[101]

Sulfidation corrosion from elevated concentrations of sulfur compounds in some of the heavier distillation cuts is also a major concern, especially in the vacuum distillation column, coker, and hydrotreater units. The specific suite of sulfur compounds may lead to increased corrosion. The IS/MND did not disclose either the specific suite of sulfur compounds or the TAN for the proposed crude imports.

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[98] Agency for toxic substances and Disease Registry, Public Health Statements, http://www.atsdr.cdc.gov/

[99] U.S. Chemical Safety and Hazard Investigation Board, Interim Investigation Report, Chevron Richmond Refinery Fire, Chevron Richmond Refinery, Richmond, California, August 6, 2012, Draft for Public Release, April 15, 2013, Available at; http://www.csb.gov/chevron-refinery-fire/.

[100] The Total Acid Number measures the composition of acids in a crude. The TAN value is measured as the number of milligrams (mg) of potassium hydroxide (KOH) needed to neutralize the acids in one gram of oil.

[101] www.crudemonitor.ca.

A crude slate change could result in corrosion from the particular suite of sulfur compounds or naphthenic acid content, which can lead to significant accidental releases, even if the crude slate is within the current design slate basis, due to compositional differences. This recently occurred at the nearby Chevron Richmond Refinery, which gradually changed crude slates, while staying within its established crude unit design basis for total weight percent sulfur of the blended feed to the crude unit. The IS/MND and VIP FEIR assume, however, that crude slate changes within the refinery design range of sulfur and API will not be a problem. In fact, although the sulfur composition at Chevron Richmond remained within the design range, they did change significantly over time.[102] This change increased corrosion rates in the 4-sidecut line, which led to a catastrophic pipe failure in the #4 Crude Unit on August 6, 2012. This release sent 15,000 people from the surrounding area for medical treatment due to the release and created huge black clouds of pollution billowing across the Bay. It also put workers at the unit in grave danger, with several escaping the gas cloud and inferno narrowly.

These types of accidents can be reasonably expected to result from incorporating tar sands crudes into the Benicia slate, even if the range of sulfur and gravity of the crudes remains the same, unless significant upgrades in metallurgy occur, as these crudes have a significant concentration of sulfur in the heavy components of the crude coupled with high TAN and high solids, which aggravate corrosion. The gas oil and vacuum resid piping, for example, may not be able to withstand naphthenic acid or sulfidation corrosion from tar sands crudes, leading to catastrophic releases.[103] Catastrophic releases of air pollution from these types of accidents were not considered in the IS/MND.

Refinery emissions released in upsets and malfunctions can, in some cases, be greater than total operational emissions recorded in formal inventories. For example, a recent investigation of 18 Texas oil refineries between 2003 and 2008 found that "upset events" were frequent, with some single upset events producing more toxic air pollution than what was reported to the federal Toxics Release Inventory database for the entire year.[104] These potential emissions must be evaluated and mitigated.

E. Unmitigated Impacts of Locomotive Emissions

The location of air emissions matters a great deal with respect to exposure levels and resulting health impacts to workers and residents. Yet the IS/MND fails to evaluate the likely pollutant exposure levels from locomotive activity of the proposed project compared to the marine shipping activity that would be replaced. In fact, the IS/MND states that the resulting emissions from rail activity will be lower than shipping. It is not clear whether that comparison accounted for all of the environmental regulations that shippers must now comply with

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[102] US Chemical Safety and Hazard Investigation Board, 2013, p.34 ("While Chevron stayed under its established crude unit design basis for total wt. % sulfur of the blended feed to the crude unit, the sulfur composition significantly increased over time. This increase in sulfur composition likely increased corrosion rates in the 4-sidecut line.").

[103] See, for example, Turini and others, 2011.

[104] J. Ozymy and M.L. Jarrell, Upset over Air Pollution: Analyzing Upset Event Emissions at Petroleum Refineries, Review of Policy Research, v. 28, no. 4, 2011.

including much cleaner, lower sulfur marine fuels. Regardless, the slightly lower locomotive emissions reported are misleading because those emissions are occurring much closer to residential populations and thus may result in significantly higher exposure to toxic diesel exhaust.

The diesel engines in locomotives emit fine particulate matter (particles that are 2.5 microns or less in diameter or "PM2.5"), NOx, and VOCs along with many other toxic chemicals.[105] The soot in diesel exhaust—diesel PM—is especially toxic, not only due to the very small size of the soot particles, but also because these particles contain roughly 40 different toxic air contaminants, 15 of which are recognized carcinogens.[106] In fact, diesel PM itself has been identified as a carcinogen by the World Health Organization as well as the State of California,[107] which lists it as a "Toxic Air Contaminant." Dozens of studies have shown a high risk of lung cancer in occupations with high diesel exposures, including rail workers, truck drivers, and miners. Recent studies of miners indicate that the most heavily exposed workers have a risk of lung cancer approaching that of heavy smokers; studies also show that elevated risks of lung cancer apply not only to workers but to the general population in areas with high levels of diesel PM (*e.g.*, near freeways and busy freight corridors).[108]

Moreover, diesel pollution is estimated to contribute to roughly 60,000 or more premature deaths attributable to outdoor air pollution in the U.S.[109] People who live or go to school near

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[105] NRDC, Clean Cargo: A Guide to Reducing Diesel Air Pollution from the Freight Industry in Your Community, January 2013.

[106] Diesel exhaust contains the following toxic constituents: acetaldehyde, acrolein, aniline, antimony compounds, arsenic, benzene, beryllium compounds, biphenyl, bis[2-ethylhexyl]phthalate, 1,3-butadiene, cadmium, chlorine, chlorobenzene, chromium compounds, cobalt compounds, cresol isomers, cyanide compounds, dioxins and dibenzofurans, dibutylphthalate, ethyl benzene, formaldehyde, hexane, inorganic lead, manganese compounds, mercury compounds, methanol, methyl ethyl ketone, naphthalene, nickel, 4-nitrobiphenyl, phenol, phosphorus, POM including PAHs and their derivatives, propionaldehyde, selenium compounds, styrene, toluene, xylenes.
www.oehha.ca.gov/public_info/facts/dieselfacts.html;
www.oehha.ca.gov/air/toxic_contaminants/html/Diesel%20Exhaust.htm.

[107] www.oehha.ca.gov/prop65/prop65_list/files/P65single021712.pdf;
http://press.iarc.fr/pr213_E.pdf.

[108] Silverman, D.T., et al. "The Diesel Exhaust in Miners Study: A Nested Case-Control Study of Lung Cancer and Diesel Exhaust," Journal of the National Cancer Institute, Vol. 104, No. 11, June 6, 2012,
www.oxfordjournals.org/our_journals/jnci/press_releases/silvermandjs034.pdf.

[109] According to U.S. EPA, the following regulations avoid 52,000 annual premature deaths by 2030: 2001 highway Diesel (8,300); 2004 Nonroad Diesel (12,000), 2008 Locomotive/Marine (1,100), 2010 Emission Control Area (IMO ECA)/marine fuel (31,000). Assuming a 90% diesel PM reduction from each rule (though some of the rules yield 95% reductions), this means that diesel PM emissions led to roughly 58,200 premature deaths before the rules were in place. This is likely a significant under-estimate since several diesel PM sources are not accounted for here, such as light duty diesel trucks and stationary diesel engines.

rail yards face disproportionately higher exposure to diesel exhaust and associated health impacts, including increased risks of asthma and other respiratory effects, cancer, adverse birth outcomes, adverse impacts to the brain (including potentially higher risk of autism),[110] heart disease, and premature death.[111]

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[110] Autism spectrum disorders (ASDs) - a group of developmental disabilities that can cause significant social, communication and behavioral challenges - have increased 78 percent since 2002 to impact 1 in 88 children, according to the Centers for Disease Control and Prevention (CDC), *see* http://www.cdc.gov/Features/CountingAutism/. While experts are still working to better understand the risk factor, they agree that risk factors are not only genetic but environmental. Several recent studies in California have shown how air pollution contributes to autism, finding elevated risks in areas of elevated air pollution and in close proximity to freeways.

[111] Kim, J., et al. "Traffic-Related Air Pollution and Respiratory Health: East Bay Children's Respiratory Health Study," *American Journal of Respiratory and Critical Care Medicine* 2004;170:520-526.

McConnell, R., et al. "Childhood Incident Asthma and Traffic-Related Air Pollution at Home and School," *Environmental Health Perspectives* 2010; 118(7):1021-1026.

Van Vliet, P., M. Knape, et al. "Motor Vehicle Exhaust and Chronic Respiratory Symptoms in Children Living Near Freeways," *Environmental Research* 1997; 74(2):122-32.

Appatova, A.S., et al. "Proximal Exposure of Public Schools and Students to Major Roadways: A Nationwide U.S. Survey," *Journal of Environmental Planning and Management* 2008; 51(5):631-646.

Nicolai, T., D. Carr, S.K. Weiland, H. Duhme, O. Von Ehrenstein, C. Wagner, and E. von Mutius. "Urban Traffic and Pollutant Exposure Related to Respiratory Outcomes and Atopy in a Large Sample of Children," *European Respiratory Journal* 2003;21:956–963.

Brunekreef, B.; N.A. Janssen, J. de Hartog, H. Harssema, M. Knape, and P. van Vliet. "Air Pollution From Truck Traffic and Lung Function in Children Living Near Motorways," *Epidemiology* 1997; 8(3):298-303.

Duhme, H., S.K. Weiland, et al. "The Association Between Self-Reported Symptoms of Asthma and Allergic Rhinitis and Self-reported Traffic Density on Street of Residence in Adolescents," *Epidemiology* 1996; 7(6):578-582.

Edwards, J., S. Walters, et al. "Hospital Admissions for Asthma in Preschool Children: Relationship to Major Roads in Birmingham, United Kingdom," *Archives of Environmental Health* 1994; 49(4):223-227.

Gauderman W.J., et al. "Childhood Asthma and Exposure to Traffic and Nitrogen Dioxide," *Epidemiology* 2005; 16:737-743.

McConnell, R., Berhane K, Yao L, Jerrett M, Lurmann F, Gilliland F, et al. 2006. Traffic, susceptibility, and childhood. *Environ Health Perspect* 2006; 114(5):766-772.

Gauderman WJ et al. Effect of exposure to traffic on lung development from 10 to 18 years of age: a cohort study. *Lancet* 2007; 369(19561): 571-7.

Wilhelm et al.. Environmental Public Health Tracking of Childhood Asthma Using California Health Interview Survey, Traffic, and Outdoor Air Pollution Data. *Environmental Health Perspectives* 2008;116(8):1254-1260.

Meng et al.. Are Frequent Asthma Symptoms Among Low-Income Individuals Related to Heavy Traffic Near Homes, Vulnerabilities, or Both? AEP 2008; 18(5):343-350.

Detailed health assessments of some major California rail yards found extremely high cancer risk from the operations, with elevated cancer risk extending as far as eight miles away.[112] Locomotives may produce about half of all harmful diesel particulate matter emissions in rail yards.[113] Locomotive engines are not only highly polluting, they are incredibly long-lasting, which means many older, high-polluting locomotives are still in operation throughout the U.S.[114] Emissions standards for locomotives lag behind the standards for trucks and even off-road equipment. New Tier 4 standards, comparable to those for modern trucks, will not start

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Venn et al. Living Near A Main Road and the Risk of Wheezing Illness in Children. *American Journal of Respiratory and Critical Care Medicine* 2001; 164:2177-2180.
Lin, Munsie, Hwang, Fitzgerald, and Cayo.. Childhood Asthma Hospitalization and Residential Exposure to State Route Traffic. *Environmental Research, Section A* 2002; 88:73-81.
English P., Neutra R., Scalf R. Sullivan M. Waller L. Zhu L. Examining Associations Between Childhood Asthma and Traffic Flow Using a Geographic Information System. *Environmental Health Perspectives* 1999; 107(9):761-767.
van Vliet et al.. Motor exhaust and chronic respiratory symptoms in children living near freeways. *Environmental Research* 1997; 74:12-132.
Pearson et al.. Distance-weighted traffic density in proximity to a home is a risk factor for leukemia and other childhood cancers. *Journal of Air and Waste Management Association* 2000; 50:175-180.
Raaschou-Nielsen, O., Hertel, O., Thomsen, B.L., & Olsen, J.H. Air Pollution from traffic at the residence of children with cancer. *Am J Epidemiol* 2001; 153:433-443.
Knox and Gilman. Hazard proximities of childhood cancers in Great Britain from 1953-1980. *Journal of Epidemiology and Community Health* 1997; 51:151-159.
Hoek, Brunekreef, Goldbohn, Fischer, van den Brandt. Association between mortality and indicators of traffic-related air pollution in the Netherlands: a cohort study. *Lancet* 2002; 360(9341):1203-9.
Finkelstein et.al. Traffic Air Pollution and Mortality Rate Advancement Periods. *Am J Epidemiol* 2004; 160:173-177.
Gan, W. Q. Changes in Residential Proximity to Road Traffic and the Risk of Death from Coronary Heart Disease. *Epidemiology* 2010; 21(5):642-649.
Heather E. Volk, PhD, MPH; Fred Lurmann; Bryan Penfold; Irva Hertz-Picciotto, PhD; Rob McConnell, MD. Traffic-Related Air Pollution, Particulate Matter, and Autism. *JAMA Psychiatry.* 2013;70(1):71-77. doi:10.1001/jamapsychiatry.2013.266.
[112] California Air Resources Board, Railyard Health Risk Assessments and Mitigation Measures, www.arb.ca.gov/railyard/hra/hra.htm. Cancer risks exceed 1,000 per million next to some of the largest railyards.
[113] "Supplement to the June 2010 Staff Report on Proposed Actions to Further Reduce Diesel Particulate Matter at High-Priority California Railyards." California Air Resources Board, July 5, 2011. Available at: http://www.arb.ca.gov/railyard/commitments/suppcomceqa070511.pdf, page 2.
[114]EPA, Fact Sheet: EPA Finalizes More Stringent Emissions Standards for Locomotive Engines and Marine Compression-Ignition Engines (PDF) (5 pp, 134K, EPA420-F-08-004, March 2008); available at:
http://www.epa.gov/otaq/regs/nonroad/420f08004.pdf

to be phased in until 2015; these Tier 4 locomotives will emit 80 percent less NOx and 90 percent less PM than a train engine built in 2008.[115] Where Tier 4 locomotives are not yet available, diesel particulate filters (DPFs) and selective catalytic reduction (SCR, a common catalyst based technology used to reduce NOx emissions) can be installed on existing locomotives to achieve emissions reductions similar to those of certified Tier 4s.[116]

Also, very high concentrations of NO_2 are present in the exhaust emissions from diesel train engines that would be used at the newly proposed rail terminal.[117] These NO_2 emissions are routinely high enough to exceed the new 1-hour NO_2 standard. While annual NO_2 emissions may be offset by reducing ship imports, the ambient impacts would occur at different locations and times, exceeding the new 1-hour NO_2 standard. This was not considered in the IS/MND and is a significant impact that requires that an EIR be prepared. These emissions can and must be mitigated, for example by using an electronic positioning system,[118] rather than the locomotive engine, to move the cars through the unloading facility.

In addition to electronic positioning systems, mitigations for line haul locomotives should also be included. We recommend tier 4 compliant locomotives or locomotives retrofitted with exhaust controls that can meet tier 4 standards; and a commitment not to idle locomotive engines in the unloading facility, including the use of locomotive idle controls.

II. Public Safety and Noise Impacts

With residential areas just 3,000 feet away from this project (IS/MND at I-2), noise from this project is certain to be a major nuisance. It appears from the project description (IS/MND at I-11 and elsewhere) that the rail activity of four 50-car trains per day would occur predominantly at night. Operations would occur constantly, "24 hours per day/7 days per week/365 days per year." (IS/MND at I-11) Each train crossing Park Road would block that intersection for more than eight minutes for a total of more than half an hour per day of that intersection being blocked (IS/MND at I-11).

While the travel delays caused by lengthy rail crossings may pose a safety concern and a nuisance to the community, our primary concern over health impacts related to the additional rail traffic is in regard to noise. The analysis erroneously dismisses noise from the additional train traffic as "not result[ing] in substantial permanent increases in ambient noise levels," and

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[115] U.S. Environmental Protection Agency, "EPA Finalizes More Stringent Emissions Standards for Locomotives and Marine Compression-Ignition Engines," Regulatory Announcement EPA420-F-08-004, March 2008. Available at: http://www.epa.gov/otaq/regs/nonroad/420f08004.htm.

[116] West Coast Collaborative, Locomotive and Rail Sector meeting materials, 2012, http://westcoastcollaborative.org/wkgrp-loco.htm.

[117] See attached expert report from Dr. Phyllis Fox.

[118] See, for example, Oregon Department of Environmental Quality, Standard Air Contaminant Discharge Permit, Coyote Island Terminal, LLC, July 24, 20120, p. 3, Condition 1.1.a (an electric powered positioning system for maneuvering railcars through the Railcar Unloading Building).

the project "noise would be similar to noise levels generated by existing refinery operations." (IS/MND at II-53 and II-54) The analysis fails to consider the horns and noise of the four additional trains going through at-grade crossings, particularly at night when most of the activity is expected. Grade separations at major rail crossings should be considered as mitigation.

The IS/MND also fails to adequately address residents' existing noise concerns or to discuss the adverse effects that noise has on people. The IS/MND provides no attempt to gauge existing levels of communication interference, sleep interference or physiological responses and annoyance, nor does it attempt to predict future levels associated with the Project.

The IS/MND also dismisses impacts related to construction noise, on the basis that the nearest residence is 2,700 feet away and thus the project is in compliance with local performance standards (IS/MND at II-53). However, compliance with a certain standard does not necessarily mean noise impacts are insignificant.[119] This is especially true in an area that is already adversely impacted by high noise levels. The IS/MND (at II-52) concedes that worst case noise impacts could be 58 dBA at the nearest residence. In fact, noise from locomotive horns may be much higher and it is not clear that this was considered in the IS/MND. The Federal Rail Administration estimates that railroad horns are in the 95-115 dBA range from 100 feet away and that "the noise resulting from the sounding of train horns has a similar impact to that of low flying aircraft and emergency vehicle sirens."[120]

In any case, noise levels from this project are likely to be above the level that the U.S. Environmental Protection Agency ("EPA") states is significant. EPA holds that a noise impact is significant if it exceeds 55 DNL, identified as the requisite level with an adequate margin of safety for areas with outdoor uses, including residential and recreational uses.[121] However, the IS/MND offers no mitigation for these impacts. Mitigating noise impacts is important not only to address the nuisance aspect of it but also because research on noise from transportation shows significant health impacts.

A. Communication Interference

A primary concern in environmental noise problems is communication interference including speech interference and interference with activities such as watching television. Normal conversational speech is in the range of 60 to 65 dBA and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level.

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[119] *See Oro Fino Gold Mining Corporation v. County of El Dorado*, 225 Cal. App. 872, 881-82 (1990).

[120] Federal Rail Administration, Horn Noise FAQ, available at: http://www.fra.dot.gov/Page/P0599

[121] *See* EPA, "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" 21 (March, 1974), http://www.nonoise.org/library/levels74/levels74.htm.

B. **Sleep Interference**

Sleep interference is a major noise concern in noise assessment and is most critical during nighttime hours. Noise can make it difficult to fall asleep, create momentary disturbances of natural sleep patterns by causing shifts from deep to lighter stages and cause awakening. Noise may also cause awakening which a person may or may not be able to recall. Extensive research has been conducted on the effect of noise on sleep disturbance. Recommended values for desired sound levels in residential bedrooms range from 25 to 45 dBA, with 35 to 40 dBA being the norm.

The National Association of Noise Control Officials has published data on the probability of sleep disturbance with various single event noise levels. Based on experimental sleep data as related to noise exposure, a 75 dBA interior noise level event will cause noise induced awakening in 30 percent of the cases.

C. **Physiological Responses**

These are measurable effects of noise on people such as changes in pulse rate and blood pressure. Generally, physiological responses are a reaction to a loud short term noise such as a rifle shot or a loud jet overflight, or in this case the horn of a train. Noise above 60 decibels ("db") has been shown to have distinct psychological impacts, such as worsening children's mental health, concentration, and classroom behavior in children at school.[122] Other studies show that chronic noise exposure contributes to a worsening of heart disease and higher rates of stroke, after accounting for the risks association with air pollution.[123]

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[122] Matsuoka, M., Hricko, Al, Gottlieb, R., and De Lara, J., Global Trade Impacts: Addressing the Health, Social and Environmental Consequences of Moving International Freight through Our Communities, Occidental College and University of Southern California (Los Angeles, 2011) (hereinafter "Global Trade Impacts"), citing World Health Organization, Guidelines for Community Noise, Chapter 3, Adverse Health Effects of Noise (1999), available at: http://www.who.int/docstore/peh/noise/Comnoise3.htm; van Kempen, E.E., van Kamp, I., Stellato, R.K., et al., "Children's Annoyance Reactions to Aircraft and Road Traffic Noise," J. Accoust. Soc. Am. (2009) 125(2): 895-904; U.S. Department of Transportation, Federal Railroad. Administration, The General Health Effects of Transportation Noise (2002), Document # DTS-34-RR297-LR2 FRS/RDV-03/01; Lercher, P., "Ambient Neighborhood Noise and Children's Mental Health," Occup. Environ. Med. (2002) 59(6): 380-6; Evans, G.W., "Child Development and the Physical Environment," Annual Review of Psychology (2006) 57: 423-51.

[123] Global Trade Impacts, 18, citing Babisch, W., "Transportation Noise and Cardiovascular Risk: Updated Review and Synthesis of Epidemiological Studies Indicate that the Evidence Has Increased," Noise & Health (Jan. 2006), Vol. 8, Iss. 30, 1-29; Sorensen, M., Hvidberg, M., Andersen, Z. J., et al., "Road Traffic Noise and Stroke: A Prospective Cohort Study," Eur. Heart J. (Jan. 25, 2011).

Annoyance is a very individual characteristic which can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability. The level of annoyance depends on the characteristics of the noise, defined as the loudness, frequency, time and duration of the noise, and how much speech and/or sleep interference results from the noise. The level of annoyance is also a function of the attitude of the receiver. Personal sensitivity to noise varies widely. It has been estimated that 2 to 10 percent of the population is highly susceptible to annoyance from noise not of their own making, while approximately 20 percent is unaffected by noise.

III. General Hazards and Ecological Risks

The IS/MND completely fails to consider or mitigate the potential for rail car accidents or spills. While the IS/MND concedes that crude oil is a hazardous material (IS/MND at II-37), it erroneously concludes that the "quantities of crude delivered by rail and marine vessel offset each other, it is, at a minimum, expected that the relative risks offset each other and that rail transport would present no new significant hazard above the current Refinery baseline risk for marine transport of crude oil to the Refinery." In fact, there is a history of major spills of hazardous materials along California rail routes.[124]

Due to the nature of the very dense and toxic diluted bitumen that the rail cars are likely to carry, as discussed above, these fuels in particular pose an especially serious environmental and public health threat when accidentally released into the environment. EPA recently noted that spills of diluted bitumen require different response action or equipment than for conventional oil spills.[125] Dilbit spills are simply more difficult and more expensive to clean up.[126] In fact, three years after a major spill of dilbit into the Kalamazoo River in Michigan, the heavy oil remains at the bottom of the river requiring dredging and $1 billion clean-up cost.[127] The IS/MND fails entirely to consider the possibility of a dilbit spill into the fragile San Francisco Bay Delta, and what the wildlife, ecosystem, economic and human health implications would be.

It is important to note that human health impacts of bituminous oil spills can be quite serious. We are only beginning to understand the full potential of impacts but spills like the one in Marshall, Michigan give a cautionary sense of how severe impacts can be. There public health officials found numerous acute health impacts lasting for days and spanning numerous areas: Cardiovascular, dermal, gastrointestinal, neurological, ocular, renal, respiratory and other

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[124] For example, there was a very major spill into Upper Sacramento River in 1991. See: http://www.dfg.ca.gov/ospr/NRDA/Cantara.aspx

[125] EPA, Comment letter to US Department of State regarding the Supplemental Draft Environmental Impact Statement from TransCanada's proposed Keystone XL project, 2013.

[126] Environmental Working Group, Poisons in the Pipeline, Tests Find Toxic Stew in Oil Spill, June 2013, page 6.

[127] EPA, 2013

impacts. [128, 129]

IV. Conclusion

The Crude by Rail Project has significant unmitigated effects on the environment. These effects must be analyzed in an Environmental Impact Report and fully mitigated before this Project may lawfully be approved.

Sincerely,

Diane Bailey, Senior Scientist
dbailey@nrdc.org
415-875-6127

Elizabeth Forsyth
Attorney
eforsyth@nrdc.org
415-875-6162

[128] Michigan Department of Community Health, *Acute Health Impacts of the Enbridge Oil Spill*, November 2010. http://www.michigan.gov/documents/mdch/enbridge_oil_spill_epi_report_with_cover_11_22_10_339101_7.pdf [accessed 19 June 2013]

[129] U.S Department of Health and Human Services and ATSDR, *Kalamazoo River/Enbridge Spill: Evaluation of Crude Oil Release to Talmadge Creek and Kalamazoo River on Residential Drinking Water Wells in Nearby Communities*, 27 February 2013, p. 90. http://www.michigan.gov/documents/mdch/enbridge_oil_spill_epi_report_with_cover_11_22_10_339101_7.pdf [accessed 20 June 2013]

July 1, 2013

Via Fax to
City of Benicia Community Development Department
Attn: Amy Million
250 East L Street
Benicia, CA 94510
Fax: (707) 747-1637

Re: Notice of Intent to Adopt a Mitigated Negative Declaration for the Valero Crude by Rail Project

Dear Ms. Million:

We, the undersigned, are writing to you on behalf of our organizations and our many thousands of members to express concern over the potential for grave environmental and public health impacts of the proposed Valero Crude by Rail Project, for which a proposed Mitigated Negative Declaration (MND) was issued on May 31st, 2013. The MND for this project is seriously deficient in its environmental analysis in many regards, including adverse impacts to air quality, public health, public safety, noise, general hazards and ecological risks, not only to residents of Benicia but also to the entire San Francisco Bay Area. At a minimum, a full Environmental Impact Review must be performed before this project can move forward.

The MND fails to address potentially significant air pollution and other impacts caused by refining additional amounts of lower quality crude oil—including from the Canadian tar sands—that could be facilitated by the project. Valero has been clear about its intentions to increase Western Canadian crude oil imports into its California refineries in remarks to investors, and independent market research confirms that the proposed Benicia facility is likely to facilitate imports of significant volumes of tar sands crude blends. The probability of the project facilitating additional, lower quality crude supplies and the resulting impacts on air quality and public health are not discussed or evaluated in the MND.

Refining increased volumes of the Western Canadian diluted bitumen products, which the proposed facility would make feasible, presents unique and significant air quality, public health, safety and ecological and water quality impacts. The following impacts would far exceed the impacts of conventional crude oil feedstocks:

1. The "diluent" used to make heavy "bitumen" or tar sands flow into and out of railcars contains highly volatile organic chemicals, including extremely toxic ones like benzene, at much higher concentrations than conventional crude oil; and is likely to be released during transport and refining.
2. The heavy bitumen component of the tar sands oil contains many toxic constituents including heavy metals such as lead at much higher concentrations than conventional crude oil and which are likely to be released during the refining process.
3. The heavy bitumen is also much more energy intensive to refine than conventional crude. Due to the composition of heavier, longer chain hydrocarbons, these denser crude oils require greater use of heaters, boilers, hydro-treating and cracking and greater hydrogen use, all of which creates greater emissions of smog- and soot-forming pollutants and toxic chemicals.
4. Dilbits are associated with greater levels of strong odors due to their composition including a variety of sulfur containing compounds, such as mercaptans, at higher levels.

5. Refining of heavy bitumen or tar sands leads to increased coke production, which in itself is a hazardous compound leading to storage and disposal issues including the potential for coke dust from storage piles to impact nearby residents, as has been documented near the Marathon refinery in Detroit, Michigan.
6. Dilbits are more corrosive than conventional crude oil, increasing the risk of refinery accidents similar to the August 6, 2012 fire at Chevron Richmond, for which lower quality crude oil was found to be a contributing factor.
7. Rail car spills of dilbit would be catastrophic to the fragile San Francisco Bay Delta. This is because the diluent – typically natural gas condensates acting as a solvent - helps the oil spread on surface waters. The diluent typically evaporates leaving the very heavy bitumen to sink, creating an exceptionally difficult and expensive clean-up. This was found to be the case in Kalamazoo, Michigan after a 2010 pipeline ruptured, releasing bitumen and causing well documented and widespread public health impacts and lasting contamination to this day (three years later).

The MND also fails to fully consider the noise impacts of this project, which will bring four 50-car trains to the refinery each day, with operations predominantly at night but potentially at all hours ("24 hours per day/7 days per week/365 days per year"). In addition to noise impacts, the additional half hour each day of blocked access due to trains crossing the Park Road intersection would be a nuisance and potentially a safety issue to the nearby community. A grade separation should be evaluated as potential mitigation. The analysis fails to consider the horns and noise of the four additional trains going through at-grade crossings, particularly at night when most of the activity is expected. Noise has been associated with many health impacts such as heart disease and stroke, as well as worsening children's mental health, concentration, and classroom behavior at school. An Environmental Impact Review must gauge existing levels of refinery noise and related communication interference, sleep interference or physiological responses; and predict future levels associated with the Project. Finally, we note that with respect to the level of rail service proposed here (4 50-car trains per day), the City of Benicia needs to demonstrate that it has the authority to impose and fully enforce such a limit consistently with federal law.

Due to all of the serious potential impacts from the Valero Crude by Rail project listed here, the lack of sufficient information to properly evaluate the project and the potential for serious and irreversible harm to the greater San Francisco Bay Area caused by the import of exceptionally toxic substances through this Project, we urge the City of Benicia to perform a thorough Environmental Impact Review evaluating these impacts and all appropriate mitigation options, before proceeding. The significant environmental impacts of this proposed project must be fully mitigated before it can be approved. We hereby reference the detailed and expert comments submitted by the Natural Resources Defense Council on July 1, 2013; and strongly urge your consideration of our concerns.

Sincerely,

Greg Karras, Senior Scientist
Communities for a Better Environment

Denny Larson, Executive Director
Global Community Monitor

Michael Marx, Director, Beyond Oil Campaign
Sierra Club

Edward A. Mainland, Co-Chair, Energy-Climate Committee
Sierra Club California

Michelle Myers, Director
Sierra Club San Francisco Bay Chapter

Victoria Brandon, Chair
Sierra Club Redwood Chapter

David W. Campbell, Secretary-Treasurer
United Steelworkers Local 675

David Schonbrunn, President
Transportation Solutions Defense and Education Fund (TRANSDEF)

Azibuike Akaba, Policy Analyst
Regional Asthma Management & Prevention (RAMP)

Jill Ratner, President
Rose Foundation for Communities and the Environment

Jess Dervin-Ackerman, Chair
350 Bay Area

LOCAL UNION 180

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS

SERVING NAPA AND SOLANO COUNTIES SINCE 1901

STAN NELSON
PRESIDENT

DAN BROADWATER
BUSINESS MANAGER

Brad Kilger
Benicia City Manager
250 East L Street
Benicia, Ca. 94510

July 1, 2013

Dear Mr. Kilger,

My name is Dan Broadwater, Business Manager of IBEW Local 180. I represent over 600 Electricians in Napa and Solano Counties, many of which have worked off and on at the Benicia Valero Refinery. The projects associated with the VIP (Valero Improvement Projects) have benefited us all, workers as well as residents of Solano and Napa Counties. Fair wages, money spent by local construction workers, a safe work site and a community partner such as Valero makes it a win-win proposition. The Flue Gas Scrubber was an excellent example of the partnership between Valero Refinery Benicia and the construction workers of the Napa Solano Building and Construction Trades. It offered over a million hours at a safe worksite along with benefiting the environment. The Oil by Rail project, in my opinion will support our joint partnership with Valero and offer environmental benefits.

I urge your support and respectfully request my letter be forwarded this to the Planning Commission and City Council for approval of the Oil by Rail project.

Sincerely,

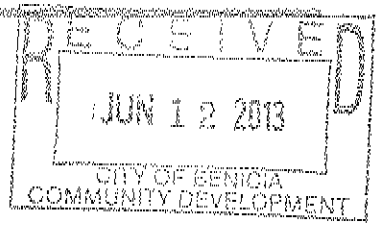
Dan R Broadwater

Dan Broadwater
Business Manager IBEW Local 180

WRITTEN COMMENT # B4

720-B TECHNOLOGY WAY • NAPA, CALIFORNIA 94558 • TEL (707) 251-9180, FAX (707) 251-8040

Amy Million - Fwd: Re: Expansion of Valero Rail Delivery of Oil



From: Brad Kilger
To: Amy Million
Date: 6/12/2013 12:21 PM
Subject: Fwd: Re: Expansion of Valero Rail Delivery of Oil

FYI

>>> "Sabina Yates" <redfoxred@earthlink.net> 6/12/2013 12:20 PM >>>
Dear Mr. Kilger. I sent the following letter to the Benicia Herald today. I would like a copy to be submitted in the Project's Mitigated Declarations Declaration, as the concerns of Benicia residents.

To the Editor:

I am writing in opposition to the expansion of rail delivery for oil to Valero Refinery from any source.

I'm writing as a frequent Amtrak passenger. So many times my husband and I have sat on a railroad siding on an Amtrak train because freight traffic has priority and preference over passenger trains. Sometimes the waiting and subsequent delay have been over two hours long. Our train arrivals in either
Portland, Oregon or Martinez, California have rarely been on time.

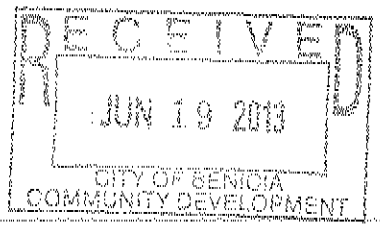
The impact on Amtrak passenger travel schedules should be considered in allowing an increase in Valero rail activity.
Refinery jobs and increased City revenue should not be the only considerations in non-questioning of this project.

Sincerely,
Sabina Yates (707) 746-6428
302 Bridgeview Ct.
Benicia, CA 94510
redfoxred@earthlink.net

WRITTEN COMMENT # C1

Amy Million - Fwd: Valero Rail Project

From: Brad Kilger
To: Amy Million
Date: 6/19/2013 11:22 AM
Subject: Fwd: Valero Rail Project



>>> Harry Newhall <hbn@speedwayprinting.com> 6/19/2013 9:36 AM >>>
Mr. Kilger:

It was suggested by Rodger Straw's article in the Benicia Herald that I contact you with my opinion on the Valero project. I support it whole heartedly. Any project that continues to help and make local business more successful should be supported. Obviously Mr. Straw and the Mayor do not like this proposal, but please do not be bullied by them. This is a good project for Benicia.

Harry Newhall
275 E L St.
Benicia CA, 94510

WRITTEN COMMENT # C2

David R. Lockwood
495 Gray Court
Benicia, CA
94510

June 21, 2013

TO: Benicia City Council RE: Valero Rail Project

A big thumbs-up for this project. I believe:

It will bring AMERICAN oil to the Valero Refinery; replacing foreign oil. Oil independence is crucial to our country's prosperity.

Less pollution generated by the delivery vehicles. Trains will generate far less pollution than ships tied up at our piers for extended periods.

American dollars will be used to pay American workers to deliver the crude oil to the refinery, not foreign shipping interests and their workers.

I believe Valero to be a very responsible entity to accomplish this project with the necessary safety factors considered to assure a safe and viable outcome for the company and that it will have a positive public impact.

I do hope the City of Benicia and the State of California will play the role of assisting Valero by quick permitting, etc. to allow this project to be completed as expeditiously as possible.

Respectfully

David R. Lockwood

PS: I further hope that the Union Pacific Railroad company will see this increased traffic as an opportunity to expand and improve its main line service performance (both passenger and freight) between Benicia and Sacramento. Maybe a little encouragement from you would help.

From: Susan Hutchinson <hutchss@comcast.net>
To: Brad Kilger <Brad.Kilger@ci.benicia.ca.us>
CC: <Amy.Million@ci.benicia.ca.us>
Date: 6/27/2013 10:46 AM
Subject: support of Valero Crude by Rail project

Dear Mr. Kilger,

As a retired administrator in Benicia Unified and a 30+ year resident of Benicia, I want to advise you of my support of the Valero Crude by Rail project. Valero is a huge supporter of our lovely town, our schools, and so many of the activities that make Benicia such a special place to live and work.

I hope that the Benicia Planning Commission will consider my voice and the voices of its constituency.

Thank you in advance.

Susan Hutchinson
354 W Seaview Dr
Benicia, CA 94510

WRITTEN COMMENT # C4

Amy Million - Valero Crude by Rail Project

From: Tom Cepernich <tomc@beniciafab.com>
To: "Brad.Kilger@ci.benicia.ca.us" <Brad.Kilger@ci.benicia.ca.us>, "Amy.Mill...
Date: 6/28/2013 2:20 PM
Subject: Valero Crude by Rail Project
CC: Carmelo Santiago <carmelos@beniciafab.com>

Dear Brad Kilger and Amy Million

I am writing in support of the Valero Crude by Rail project that has been proposed to the City of Benicia for approval. Based on the project, as far as the information I have been able to gather, it seems it would be a win-win situation for the City of Benicia and Valero. Not only will it reduce emissions and reduce our reliance on foreign crude, it will create 30 full time jobs at the refinery for operation of the Crude by Rail system. Also, it will bring 120 skilled jobs to the project for the projected 6 month construction time. The ability to process lower cost crude will also make Valero more competitive in the marketplace.

As I'm sure you are aware, Benicia Fabrication and Machine has been located in the Industrial Park on East Channel Rd for 30 years and has enjoyed a great relationship with them and also with Exxon before them. Our company sees no problems with traffic or commute issues, even though our business operates from 6:00 AM to 1:00 AM on a normal basis to 24 hours a day when we are working around the clock to provide service to our customers during maintenance shutdowns or emergencies.
Benicia Fabrication and Machine urges the City of Benicia to approve this project, which will benefit the City and also its major business partner.

Thank you for your time,

Tom Cepernich
President
Benicia Fabrication and Machine Inc.
707-745-8111
tomc@beniciafab.com

WRITTEN COMMENT # C5

Brad Kilger, City Manager
250 E. "L" St.
Benicia City Hall
Benicia, CA 94510

Dear Mr. Kilger,

Valero is one of the biggest taxpayers in Benicia, as well as one of the most philanthropic businesses. I support Valero's request for a permit to build its rail car facility. We must do all we can to support our longstanding business who have seen this city through hard times.

I've said it many times to many people, but I'll say it again: "God Bless Valero!"

Very sincerely yours,

Ralph Aguirre

WRITTEN COMMENT # C6

City Manager, Brad Kilger
Planning Commission Members
City Staff
Mayor and Council Members

June 30, 2013

Subject: Valero Crude by Rail Project Initial Study/Mitigated Negative Declaration

I am writing both as a citizen of Benicia, a Benicia Emergency Response Team member and as a sitting Commissioner on the Community Sustainability Commission.

I learned from the June 19th, 2013 Valero presentation to the Economic Development Board that this project would be a $50m investment that would eliminate 32 deliveries of oil per year by ship. Daily rail deliveries would replace an every five day scheduled ship delivery. A ship, I learned carries 500,000 barrels vs. 700 barrels per rail car. The mitigated effect on Greenhouse Gas Emissions would be a reduction of 3,905 metric tonnes per annum.

Subsequently I heard, but have not verified, that preliminary work has already begun on this project in the Industrial Park.

Risk Assessment:

What most concerns me from community sustainability and emergency response views is the lack of information on the calculated risk from moving so much crude oil by rail through critical natural habitat and our community. There are studies, probably more current than the University of Illinois at Urbana-Champaign "Environmental Risk Analysis of Chemicals Transported in Railroad Tank Cars,*" that indicate the probability of rail accidents based on rail miles traveled, type of tank car class and environmental characteristics. What are the calculated risks? What type of rail tanker car is being used? What is that car's probability for accident or derailment?

Table 2 Conditional Release Probabilities, given Derailment for Tank Cars used for Products of Interest

Car Class	Release Probability of a Derailed Tank Car	Car Class	Release Probability of a Derailed Tank Car
105A100W	11.44	111A100W6 - NI	10.65
105J100W -1/2 HS	9.37	111J100W3 -1/2 HS	26.67
105A300W	9.80	111A100ALW2 - NI	51.26
105J300W- 1/2 HS	8.26	111A60W7	10.05
105A500W	3.82	111A60ALW1 - NI	53.08
105J500W - 1/2 HS	3.16	111A60ALW2 - NI	51.26
111A100W1 – NI	34.67	111S60ALW1 – NI	53.08
111A100W2 – NI	32.32	111S60ALW2 – NI	51.26
111A100W3	28.99	114A340W - NI	14.24
111A100W5 - NI	32.32	211A100W1 - NI	34.09

Tar Sands

WRITTEN COMMENT # C7

While it was stated that the crude oil being sent to Benicia would be from North America, predominantly the U.S. Midwest, I am most concern that the blended crude that is imported could have output from the highly controversial tar sand projects in Canada. This process is highly energy and water costly producing extremely high rates of GHG emissions in our fragile Earth atmospheric envelope. What verifiable guarantee will Valero provide to assure us that output from tar sands will not be processed in Benicia?

Emergency Response
Another concern is community safety. As rail cars will be transported and unloaded between the hours of 8PM and 5AM, how well equipped is Valero and Benicia to provide immediate alert/notification and protection of residents on the Valero side of Benicia?

Environmental Degradation
What is the environmental effect of 100 or more daily rail tank cars in stirring particulate matter into the air?

Environmental Impact
What Environmental Impact Reports have been prepared with the agencies responsible for Air, Land and Water quality?

Thank you,

Constance M. Beutel, EdD
1501 Shannon Ct
Benicia, CA 94510

References:
*Environmental Risk Analysis of Chemicals Transported

in Railroad Tank Cars
http://ict.uiuc.edu/railroad/cee/pdf/Anand%20et%20al%202005%20IHHA137.pdf

June 29,2013

To Whom it may concern:

Please approve Valero's request for a permit to build an unloading rack at the refinery. This project will allow the refinery to bring in crude by rail and reduce emissions. This is a win-win project for business and the environment.

Thank You,

S. J. Francisco

Sylvia J. Francisco

WRITTEN COMMENT # C8

Amy Million - Fwd: Trainloads of potential pollution, and more climate killing energy

From: Brad Kilger
To: Amy Million
Date: 6/28/2013 8:48 PM
Subject: Fwd: Trainloads of potential pollution, and more climate killing energy

>>> <nancyfcarey@earthlink.net> 06/28/13 2:53 PM >>>
Dear Mr. Kilger,

This is an email from a concerned Benician weighing in on the very negative idea of Valero bringing to Benicia trainloads of poor quality crude oil, especially if it could come from the nasty tar-sands of Canada. For all the same reasons Obama should put the kabosh on the proposed XL pipeline across our heartland, we in Benicia should reject train cars full of the same hazardous stuff.

Aside from the environmental risks of transportation, we in Benicia have been promoting a "green, alternative, and sustainable" philosophy in this community for years. When evaluating this proposal, let's keep that in mind instead of permitting or promoting more polluting sources of fuel.

The NRDC has compelling information about this idea as you will hear on July 1st, if you have not already read their info on this topic.

Thank you for your attention to this.

Sincerely,

Nancy Carey

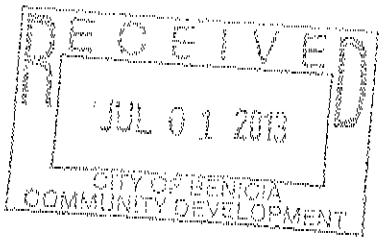
nancyfcarey@earthlink.net

WRITTEN COMMENT # C9

Amy Million - Fwd: Oil Shipments by Rail

From: Brad Kilger
To: Amy Million
Date: 6/29/2013 8:48 PM
Subject: Fwd: Oil Shipments by Rail

>>> Lawrence Fullington Jr <lfullingto@sbcglobal.net> 6/29/2013 6:15 PM >>>
I think the oil shipments to Benicia by rail are an excellent idea! This is by far the most efficient way to move product, and one of the safest. It would also help Benicia's major oil company and outstanding corporate citizen, to help ultimately supply gasoline to market at a a more reasonable price.
With most of our supply of crude coming from outside our shores, we are "cost vulnerable" at the mercy of other countries--some that hate us. It is important that we become as self sufficient as we can. This is a way to help do this! Larry Fullington



WRITTEN COMMENT # C10

June 28, 2013

Amy Million, Planning Dept.
City of Benicia
250 East L St.
Benicia ,CA 94510

Re: Valero Crude By Rail Project
Initial Study/Mitigated Negative Declaration
Use Permit Application 12PLN-00063

Dear Ms. Million:
Valero's Crude By Rail Project is a new method of crude delivery to the Benicia Refinery. After reviewing the documentation in the Initial Study/Mitigated Negative Declaration, I was pleased to see that the City and its consultant, ESA, did an exemplary job of the CEQA analysis.

The actual facility is inside the refinery's existing footprint, so this project seems to be "more of the same" in terms of what one expects inside an area zoned for commercial/industrial use.

What I garnered from the study was the crudes brought in by rail are similar to what the refinery has run since it opened in 1969. In addition, I see that the refinery cannot process more crude than its permit allows. So, I am satisfied that all environmental concerns have been addressed.

It is more difficult to extrapolate the "good news" value from the study – those things that benefit all Benicians. As I see it, the good news is:

- Fewer emissions to the atmosphere with delivery by rail
- Construction jobs for laborers
- New jobs (30) to operate the facility
- Continued economic benefit to the City of Benicia, Benicia Unified School District, Solano County, and the State of California.

I encourage others to read the full study, as I believe they will come to the same conclusions that led me to fully endorse the Crude By Rail project.

Very truly yours,

WRITTEN COMMENT # C 11

June 27, 2013

Mr. Rod Sherry, Chair
City of Benicia Planning Commission
250 E. L. Street
Benicia, CA 94510

Dear Mr. Sherry:

I was pleased to read in the Benicia Herald that Valero is proposing a project called "Crude By Rail" that will add new jobs in Benicia. According to the article, Valero is responsible for over 20% of the city's general fund budget. Adding new jobs and building a new project at the refinery can only benefit Benicia.

I urge you and your fellow Planning Commission members to vote in favor of Valero's request for a land use permit.

Regards,

WRITTEN COMMENT # C12

Amy Million - Fwd: no on oil sands crude

From: Brad Kilger
To: Amy Million
Date: 7/1/2013 9:14 AM
Subject: Fwd: no on oil sands crude

>>> "Bea Reynolds" <breycas@comcast.net> 7/1/2013 7:01 AM >>>
PLEASE! The proposal for Valero shipping crude into Benicia by rail would set up the probability of a disaster by immense proportions.

Benicia Suisun Marsh has all ready been highly impacted by the oil leaks from the various pipelines - (Kinder Morgan being one).and it has just barely begun to heal.

By building this rail spur.opening our beautiful and sensitive environment to the (potential) damage an oil spill is not good sense.and has no redeeming factors to Benicia and its residents.

Please! Stop the madness of big oil and corporations' proposal that will undoubtedly endanger our community; we don't need the liability. Valero has other refineries elsewhere.not here, please!

Soincerely,
Bea Reynolds
Safety Engineer/Consultant
PG&E Contractor Safety Management
707-372-3591 cell
breycas@comcast.net

WRITTEN COMMENT # C13

June 29, 2013

Mr. Brad Kilger, City Manager
City of Benicia
250 East L St.
Benicia ,CA 94510

Dear Mr. Kilger,

In this time of economic uncertainty, it is important for the City of Benicia to support businesses that bring new jobs and a strong tax base to the City of Benicia and other local government entities, like BUSD and the County. Therefore, I am writing in support Valero's crude by rail project.

Since 2000, Valero has been a good neighbor, supporting schools, libraries, parks, special events and more. In particular, I am keenly aware of Valero's support of the Benicia Education Foundation (hundreds of thousands of dollars).

If the City is serious about economic development, it must support our existing businesses. Economic development is not just about recruiting new companies to come to Benicia; it is about retaining our existing businesses, like the refinery.

Sincerely yours,

Tim Rose

Tim Rose - President
C&M-JF, Inc.

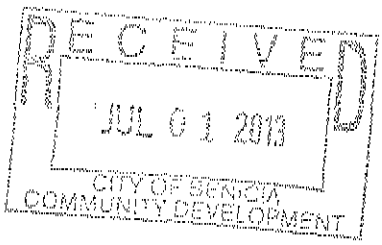
WRITTEN COMMENT # C14

Amy Million - Fwd: Valero refinery and Canadian tar sands crude

From: Brad Kilger
To: Amy Million
Date: 6/29/2013 9:51 AM
Subject: Fwd: Valero refinery and Canadian tar sands crude

>>> Plewis <pjlewis363@gmail.com> 6/27/2013 8:24 PM >>>
Dear Mr.Kilger:
Please do not approve the project to bring tar sands crude here by rail. A spill of this type of crude would be a disaster as it is virtually impossible to clean up. Do not trust any study paid for by Valero that says we have nothing to worry about.
The project would also have a very negative impact on climate change. Looking at what emissions will be produced only locally is the wrong perspective as climate change is a global issue. No one questions that producing gasoline from tar sands instead of regular crude creates more CO2 emissions. We in Benicia should not not allow any local businesses to participate in that process if we can prevent it.
I recommend you read Bill McKibben's "Eaarth" to bring home how serious the climate change problem truly is. The website 350.org also has links to some very good articles. If we do not act now the problem will soon become unsolvable.
Rick Slizeski
363 Seaview Drive

Sent from my iPad

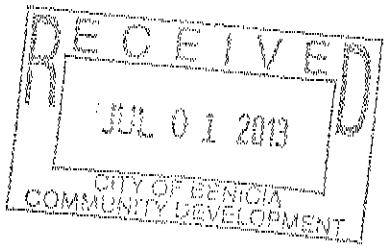


WRITTEN COMMENT # C 15

Amy Million - Fwd: new crude-by rail project

From: Brad Kilger
To: Amy Million
Date: 6/29/2013 9:11 AM
Subject: Fwd: new crude-by rail project

>>> Andy Smith & Pat Toth-Smith <pattothsmith@aol.com> 6/28/2013 10:55 PM >>>
Dear Brad Kilger, We are long time Benician residents who own a home on west K. We are against the crude by rail project and worry about the safety of our marshes and bay with the potential for derailment. We are also concerned that it would increase contamination of our water supply when unloading the crude. (The potential for spills that leak into our streams then to the reservoir is of great concern to us) We drink Benician water. Also the waiting on Park ave as the trains block the roadways will also be a big nuisance. Sincerely, Pat Toth-Smith and Andy Smith



WRITTEN COMMENT # C 16

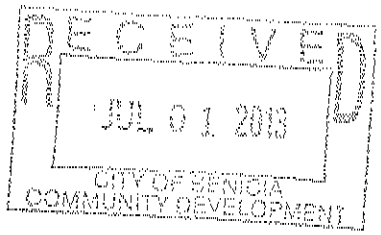
Amy Million - Valero Crude Rail Project

From: Don Stock <dons@overaa.com>
To: "Amy.Million@ci.benicia.ca.us" <Amy.Million@ci.benicia.ca.us>
Date: 6/29/2013 10:18 PM
Subject: Valero Crude Rail Project

To the City of Benicia,

As a Benicia resident for 24 years I fully support the Valero Crude Rail project. It will be safer for our environment, bring more jobs to our community, and increase the taxes to the city from Valero. We understand it will also reduce our dependence on foreign crudes. We believe this project is good for our community and us as residents. Valero has always been a good neighbor and we believe they should be supported in this project.

Respectfully, Don and Gail Stock
145 Chelsea Hills Dr
Benicia, Ca 94510
707 747-6354



WRITTEN COMMENT # C17

James Thomas
P.O. Box 2225
Benicia CA
94510
707
746-6758

July 1 2013

Rail Project.

I have every confidence that Valero Refinery will run a safe operation.

We've had problems in the Suisun marsh but I don't believe it has anything to do with the Refinery.

In then Waste Water Treatment Plant they run above the standards set by California

WRITTEN COMMENT # C18

It is getting more and more difficult to operate in California

If this project fails I am afraid Valero will leave Benicia

There is a safe way to do this.

James Thomas

MARILYN J. BARDET
333 East K Street, Benicia CA 94510
707-745-9094 mjbardet@comcast.net

June 30, 2013

City Manager Brad Kilger,
Planning Commissioners: Chair Sherry, Oakes, Smith, Grossman, Spraque, Dean and Young
Mayor Patterson, Vice Mayor Campbell & Councilmembers Hughs, Schwartzman & Strawbridge
City of Benicia, 250 East L Street, Benicia CA 94510

SUBJECT: Valero Crude-By-Rail Project Initial Study/Mitigated Negative Declaration

Dear Mr. Kilger, Planning Commission Chairman Sherry, Planning Commissioners, Community Development staff, and Mayor Patterson and Councilmembers:

My comments overall reject the City's determination that a Mitigated Negative Declaration {MND] is a sufficient level of environmental review of Valero's Crude-by-Rail Project as described and discussed in ESA's Initial Study and Environmental Checklist. With regard to determining whether a more thorough environmental review is necessary, CEQA Guidelines §15064 describe the conditions under which an Initial Study is called for, and when an EIR is determined to be required:

> *"Must A Lead Agency Prepare an Initial Study?*
> - *If the need for an EIR is unclear, the lead agency must prepare an initial study.*
> - *If the lead agency can determine an EIR will be required, an initial study is not required."*

It follows from the fact that an Initial Study was prepared that the City-as-lead-agent was *at the very least unclear, if not confused,* about whether a full EIR was necessary to review the proposed rail project.

We need clarity. There are too many missing discussions in the Initial Study and too many unanswered questions. My hope, and the hope of many, is that you will agree that sufficient, thus, more specific description, evidence and evaluation of potentially significant negative impacts are needed to enable the public to understand *"the whole of the project,"* as required under CEQA. Mitigation measures that would reduce or eliminate the severity of those environmental effects must be designed and submitted *at the time of the environmental review*. The mitigation measures must address the proposed Project's operations *over the course of the Project's lifetime*.

My comments give examples of the regrettable limitations of the Initial Study's Project Description and reject the conclusions of the Checklist. The Initial Study's limited findings suggest that there would be no further concerns than those already exposed by its review, and that the burden of a comprehensive investigation of any other foreseeable and potentially significant adverse impacts should not be necessary. I disagree.

The City's sign-off on an MND on May 31, 2013, by the former Community Development Director, is perhaps owing to the many constraints on staff's time in reviewing the Study. This is understandable, but not acceptable: the MND basically echoes the Initial Study's findings without evidence of independent questioning and further scrutiny. A reader should not have to read between the lines of the Initial Study to

discover the extent of the environmental ramifications of the Project, nor what further discussion is necessary.

Valero's Project would replace equivalent deliveries of crude by ship, and would be the second refinery rail project in the Bay Area. According to online news reports, Phillips 66 (formerly Conoco-Phillips) in Rodeo currently imports crude by rail. This fact was not discussed anywhere in the Initial Study or Environmental Checklist; yet learning this fact from other sources only underscores that we are not yet sufficiently informed by Valero, ESA or the City about the extent of the Project and its contributions to cumulative impacts: for example, the number of foreseeable crude-loaded trains that would be moving through Benicia and the Bay Area on Union Pacific's tracks. Other refineries in Contra Costa may be considering similar rail projects in the future (Tesoro's Golden Eagle, in Martinez). We therefore have no real idea, based on accurate estimates, of the potentially significant and even catastrophic impacts that could occur, given the foreseeably intensified use of Union Pacific's tracks for transporting crude and other hazardous materials. It is required under CEQA to identify and address potential cumulative negative impacts of other similar large-scale projects that would be concurrent or that are planned for the future in the region.

The importation of new "North-American-sourced crudes" – the vague, unqualified term used throughout the Initial Study – is not discussed with regard to the Phillips 66 crude-by-rail operation or other Bay Area refineries' future plans for crude-by-rail projects; nor, for that matter, the cumulative adverse impacts that are foreseeable wherein other CC County refineries, which are now already processing a variety of sour crude types, might also be planning to import by rail, in the near future, and/ or by whatever *indirect* means, more heavy "North-American-sourced crudes," especially from Alberta Canada's tar sands. (Chevron Refinery, Richmond).

Valero has declared publicly (at CAP meeting and recent Economic Development Board meeting) that they will not be importing "tar sand crude" and their explanation has been that bitumen has to be transported in heated railcars and would have special off-loading conditions. If this is truly the case, why is there no discussion in the Study that would reflect Valero's commitment and explanation? And if they have made a "spoken" commitment to Benicia residents, why is this not committed in writing? Perhaps because they would not be importing "pure bitumen," which they assume, to their advantage, that members of the public mean when they refer to "tar sands" crude. Neither Valero nor the Initial Study have discussed a "diluted bitumen" blend or "dilbit" such as "Western Canada Select." (see my Comments).

Importing crude by rail using existing RR routes is a relatively recent phenomena now pushed by the oil industry to access various sources of heavy crude types that are being mined from shale formations in North Dakota and elsewhere in the Midwest, in California's Central Valley, and also from the vast network of open pit mining operations in Alberta's tar sands. If we're to grasp and assess "the whole" of the Valero rail project, we must not only ask Valero to be forthcoming about local and regional environmental ramifications of switching to rail as the method of importing crude, but also about the heavy crude types that would be imported under the proposed Project to be processed in Benicia. Getting access to "North American-sourced crudes" explains Valero's switch from ship to rail, and their desire to have had the Crude-by-Rail Project on time and on track for operation by late 2013 or early 2014, (from the Project construction timeline outlined in the Study. See comments).

Over the last 15 years, I've reviewed project applications, initial studies and draft EIR's, and have always tried my best to inquire into the details and facts of a proposed project and to imagine their

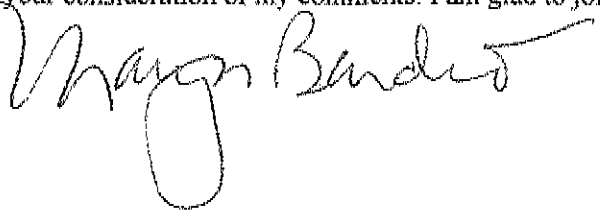
foreseeable effects for Benicia: the Koch Industries' "Coke Dome" project for the Port; the Tourtelot military cleanup for Southampton's residential build-out; the Valero Improvement Project [VIP]; Valero's EIR Addendum for VIP; several Seeno project draft EIRs; and also the draft EIR for the Arsenal Specific Plan. These projects envisioned land-use changes and/or long-range consequences for the community over project life-spans of 25 years and beyond. Of those mentioned, only the Tourtelot Restoration Project and Valero's VIP have gone forward successfully, much to everyone's credit.

As a member of the Good Neighbor Steering Committee [GNSC] for 13 years, and as a continuing member and former chair of Valero's Community Advisory Panel, I've worked hard with others to learn about the refinery, its VIP upgrades and local impacts. Representing the GNSC, I also currently serve as a non-voting member on the Community Sustainability Commission. I recognize the global effects of burning fossil fuels – the increasing, higher levels of atmospheric CO2 pumped into our atmosphere by human activities that contribute to global warming and climate changes. There is a growing local, regional and national consensus that we must conserve non-renewable resources, conserve energy and water, and transform our economy into a more sustainable one by working toward creation of reliable, alternative energy systems that do not put global climate further at risk for even more rapid, unprecedented changes.

Challenges made to Valero with regard potential impacts of their VIP and its later additional upgrades were aimed to ensure that their technical improvements would reduce water and energy use, reduce significant "criteria" emissions, and comply with the intent and spirit of AB32, the California Global Warming Solutions Act. The Project also must conform to the Benicia General Plan whose overarching goal is "sustainable development" [General Plan, page 22]. This governing goal explicitly declares the widening and rippling effects of whatever we do here in Benicia – how we conduct business and live our lives. The Benicia Climate Action Plan sets local strategies for modifying and changing our habits to create a more sustainable community.

As part of the VIP's permitting requirements, Valero was required to install a scrubber that ultimately replaced its main stack and has proven to greatly reduce ozone precursor gases – a benefit to our local community and the regional air basin. But now we must look forward and exercise our critical faculties to assess Valero's new Crude-by-Rail Project with its deep and wide ramifications that are local, regional and global.

Thank you for your consideration of my comments. I am glad to join you in the Project's review.

Marilyn Bardet 

COMMENTS:

1. General observations regarding the limited scope of review of the Initial Study and Environmental Checklist's Evaluation of Environmental Impacts:

The MND, signed off on May 31, 2013, by the former Community Development Director, summarizes the findings of the City-as-lead-agent:

> *"The City of Benicia finds that although the proposed project could have a significant effect on the environment there will not be a significant effect in this case because mitigation measures have been added to the project that avoid or reduce all impacts to a less than significant level."*

The introduction to the Checklist, "Evaluation of Projects" [p II-1] outlines a number of CEQA criteria for evaluating impacts of a project. Criteria #2 states: ***"All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts."***

In reviewing ESA's Initial Study ["Study"], the City apparently found no foreseeable problems or impacts that were *not* addressed in the Study and the Environmental Checklist ["Checklist"]. The City's review apparently concurred *to the letter* with ESA's narrow Project Description and their assessments of impacts. The Checklist mainly focuses on impacts that would occur *during the Project's construction phases*. The Study does not describe the life-span of the Project, nor, thus, the foreseeable *and cumulative* potential significant negative impacts *over time* to Air Quality, Biological Resources; Geology/Soils; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use Planning; Noise; and Transportation and Traffic. (See further comments for examples). It would be the job of an EIR to fully explore each of the CEQA areas of concern. There is minimal discussion, (seemingly meant to reassure the reader), about the *actual operations* of the Project.

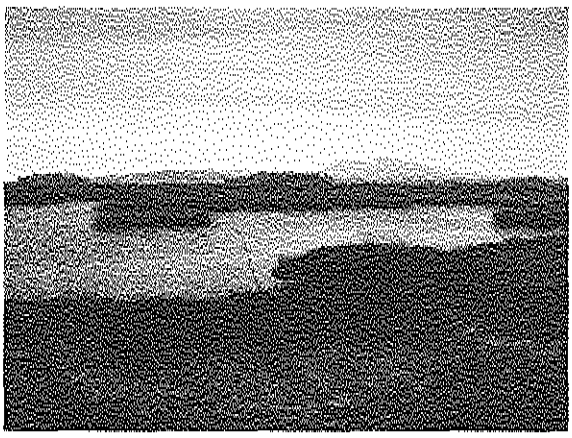
According to the limited Project Description, Project operations would occur almost exclusively at the rail rack off-loading facility, located on Valero property east of the storage tanks. Scant, cursory description is provided about Union Pacific's role and involvement – running Valero-bound, Valero-owned, crude oil loaded railcars. Which corporation will be managing the crude-loaded trains with regard to scheduling, and considering *all trains* running on Union Pacific tracks? There is little or no evidence given to substantiate claims that there would be no significant off-site impacts that could not be mitigated. Mitigation Measure TRAN-1 is an example of an extremely limited view of possible impacts from trains traveling in and out of Valero property and beyond. There is no discussion of potentially *catastrophic* impacts – the potential "off site" impacts – that could foreseeably occur given where the Project's trains would be traveling, conveying "North American-sourced crudes" through miles of sensitive ecological areas.

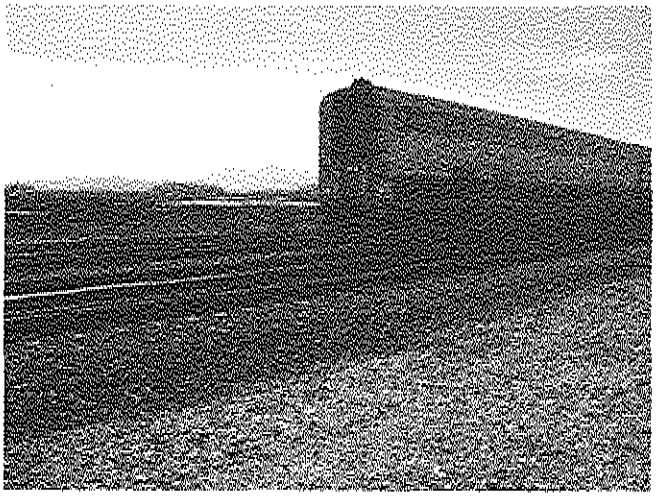
The Project Description, therefore, seems to piece-meal the Project, as if the Project operations were limited to Valero property, and as if, somehow, they were not extended to the "off-site property" owned by Union Pacific – the RR tracks extending for miles to be used in the transport of crude to Valero's off-loading racks. Further, there is no adequate account of the potential effects over the lifetime of the Project of processing the various "North American-sourced crudes" projected to be imported by rail and processed in Benicia over years or decades.

The Project's construction phase was slated to begin in early 2013 and be completed in late 2013, thus operational by late 2013 or early 2014 [Appendix A1." Air Permit Application. BAAQMD Overview 1.2, p. 1.]. From Valero's time-table for construction and operations' startup, the reader might assume that Valero had counted on the City to recommend its MND, and that therefore, the company, in planning its Project timetable, was not expecting that further environmental review would be required, or, that any other delay would hold up construction.

The Planning Commission hearing is scheduled for July 11; thus, the Project's construction startup date has long passed. Is the delay in reviewing the Project owing to the City's scheduling of the environmental review? Or, is there any *technical* reason for the delay on Valero's part? Although the BAAQMD Air Permit Application [Overview 1.2, p. 1.] reiterates Valero's assertion that no modifications to the refinery processing equipment would need to be made for the Project to proceed, is there any planned VIP technical upgrade that hasn't been completed that would be *required* to be completed and operational in order for the Project to be permitted? Has the Coker Unit expansion project that was scheduled to be completed in March 2013, indeed been completed? [VIP EIR Addendum, Table 2.5.1.1 "Project Schedule: Expand CKR, Light Ends, Silos..."]. I could find no mention in the Study of whether there would be increased production of residual coke from the processing of any of the "North American-sourced crudes" that might be imported – the bitumen-based crude (a diluted bitumen or "dilbit") produced from Alberta Canada's tar sands. (See related comments under #9, "Mandatory Findings of Significance.")

Regarding the Initial Study and Environmental Checklist on global warming effects: The Bay Conservation and Development Commission [BCDC] must be involved in evaluating potential impacts to the Suisun Marsh of the Crude-by-Rail Project. BCDC has issued public reports that present evidence-based modeling of the projected sea level rise that would inevitably affect San Francisco Bay and the Carquinez Strait. BCDC's publicly available map of shoreline areas that would be affected by sea level rise show the effects on Benicia's marsh and floodplain environs over the next 25 - 50 years through the end of the century. The Study and Checklist should reference and discuss the implications of the BCDC map as related to the Union Pacific rail routes through the Suisun Marsh, which is projected to be more prone to greater seasonal flooding over the next decades – the probable lifespan of the Project? – increasing the intensity and number of winter rain storms, whose effects may be made more severe by high tides in the Strait and earlier snow melt. The Union Pacific tracks are visible along a long stretch of Goodyear Rd., within Benicia's city limit. The gravel railbed appears to be elevated approx. 18" - 24" above the marsh. The railbed itself was not flooded during the February, 2011 storm event that occurred along the length of Benicia's marsh surrounding the tracks. In the storm's immediate aftermath, I took pictures capturing the train tracks leading from the Industrial Park through the marsh, and specifically where flooding and pooling of the marsh around the tracks had most severely occurred. One of the only small service roads that crosses the tracks (not far from Organic Solutions, a company along Goodyear Rd.) was completely submerged except where it briefly crossed the tracks; therefore it was impassable to vehicular traffic, including emergency vehicles. A sign was posted at the dirt road's junction with Goodyear Rd that said "Flooded.") Trains carrying crude could conceivably be threatened if there was any erosion or disturbance of the gravel rail bed and tracks. Trains





could be held up, (where? side-lined?), potentially stalled or derailed, with spills of crude oil. Description and analysis of potential significant impacts that might flow from such a *credible* worst case scenario are missing from the Study.

How would crude-loaded railcars be accessed in the case of a flood in Suisun Marsh if there were a train accident and spill of crude? What would be the emergency response plan? What would be the cleanup method? For diluted bitumen? The Initial Study doesn't provide answers.

3. AIR QUALITY IMPACTS:

[Initial Study; Environmental Checklist: 3. Air Quality p. II-10]

Mitigation Measure Air-1, *"added to the project."* Air-1 references existing Bay Area Air Quality Management District's [BAAQMD] protocols and policies that are meant to protect against dust and diesel emissions during construction phases of development projects. It also refers to "2010 CAP" which is a recent Air District plan. It bears quoting from the Study's *minimal description* of the 2010 CAP. The thresholds for judging significance of air impacts are said by the Study not to be exceeded by the Project. It is not stated whether the air impacts evaluated are ones owing *only* to construction phases.

[From the Environmental Checklist – p. II-10]

"The 2010 CAP serves as a multi-pollutant air quality plan to protect public health and the climate." . . ."The 2010 CAP's control strategy includes revised and updated, and new measures in the three traditional control measure categories, including stationary source measures, mobile source measures, and transportation control measures. In addition, the 2010 CAP identifies two new categories of control measures, including land use and local impact measures, and energy and climate measures." . . . . "BAAQMD recommends that the agency approving a project where an air quality plan consistency determination is required analyze the project with respect to the following

questions: 1) does the project support the primary goals of the air quality plan?; 2) does the project include applicable control measures from the air quality plan?; and 3) does the project disrupt or hinder implementation of any 2010 CAP control measures? If all the questions are included in the affirmative, BAAQMD considers the project consistent with air quality plans prepared for the Bay Area (BAAQMD,2012)."

Apparently, ESA expected the public to know what BAAQMD's "control strategies" and "new measures" are, but this is an *unfair* expectation. The Appendix does not include a pdf of the actual CAP 2010 document, or any other explanatory material to help our understanding of the Air District's regulatory guidelines for judging "thresholds" for emissions impacts, etc. The reader should not have to hunt for documentation on the BAAQMD's (nearly inscrutable) website. The reader reviewing the above quoted text can therefore have no idea whether the ESA in drafting the Initial Study, or the City in recommending the MND, accurately analyzed the Project *with respect to the questions the Air District recommended be raised*, as stated in the above quote. Accordingly, the adequacy of Mitigation Measure AIR-1 is highly suspect in this case. For example: there is no description or analysis of local air quality impacts to sensitive receptors who are employees in the industrial park, thus of persons who might be affected by cumulative emissions from *increased daily emissions* from all sources within the refinery, including the Rail Project.

Regarding emissions expected during operation of the Project:
[Environmental Checklist p.II-13]
Under item 3c, the proposed Project's emissions are evaluated relative to BAAQMD's thresholds for "attainment" for the Bay Area air basin that are protective of human health. Project emissions (including diesel, VOC's and Particulate Matter - PM10 and PM2.5) are contributors to smog production. "Net emissions reductions" that are accounted for in the Study, *if they are reliable*, are calculated using statistical averaging to arrive at a figure that would represent a finding of "attainment" or "non-attainment" of federal and state standards for general smog conditions *within the region as a whole*. Accordingly, it is not explained by the Study that *local* emissions impacts *cannot* be assumed to be reduced by evaluations made using BAAQMD calculations that assess emissions impacts to the *whole air basin*.

". . . . New stationary sources at the Refinery would include unloading rack and pipeline, which would result in fugitive emissions of ROG. The project would also include a change in service to existing Tank 1776 to allow it to store crude oil; however, because there would be no change in the amount of crude oil stored at the Refinery, there would be no net increase in tank-related storage mass emissions relative to baseline conditions. Overall, the proposed Project would result in reduced air emissions compared to the existing operations because delivering crude oil by rail car results in less emissions with the BAAQMD compared to delivering crude oil by marine vessel. See Table 3-2 for a summary of net emissions reductions that would be associated with the Project."

". . . .Regardless, long-term operations of the proposed Project would result in a beneficial impact to air quality in the BAAQMD."

The final sentence in the evaluation reads like a statement of religious belief in the *"beneficial impact to air quality to the BAAQMD* [the Bay Area Air Basin]" that would be brought about by the advantages of the Project, mainly, replacing ship transport by train transport. There is no account of *local* air quality impacts from long-term Project operations, including cumulative impacts of exposure risks to

the Benicia community from existing and future-anticipated refinery toxic emissions (including from accidental releases with "spiking" of emissions, leaks, fires, etc.) in addition to Project-related emissions.

Under item 3d, the Study recommends that the lead agent (City of Benicia) evaluate the *"incremental toxic air contaminant (TAC) exposure risk to all sensitive receptors within a 1,000-foot radius of a project's fenceline."* The summary sentences in the discussion are as follows:

[Checklist: Air Quality, 3d, p. II-14].

> *"Long-term operations associated with the Project would generate TAC emissions from locomotive idling, locomotive transit, locomotive switching and from fugitive equipment and routine Tank 1776 leaks. The Applicant provided a screening level health risk assessment, as summarized in Table 3-3 which modeled the following sources using the ISCST3 air dispersion model: . . . [Table 3-3: Maximum Cancer and Noncancer Risk]." . . .*
>
> *"The closest sensitive receptors to the proposed Project would be residences off Lansing Circle, approximately 2,700 feet northwest of the proposed Project site. There are no sensitive receptors within 1,000 feet of the proposed Project components."*

Lansing Circle is a residential cul-du-sac located in the northeastern corner of the Water's End development that overlooks the refinery processing block, which is just south and east of the cited street, alleged to be the nearest location of "sensitive receptors" to the proposed Project railcar off-loading racks. There is no analysis in the Study or Checklist of emissions from the Project that would affect, for example, sensitive receptors – employees – working in businesses near the Union Pacific tracks and/or near the refinery's off-loading racks.

The air emissions dispersal modeling referred to in the quote cited above is inadequate to address how toxic, volatile emissions can travel given different wind conditions, winds' seasonal patterns and the topography of the area. The "wind rose" pictured in Figure 4.2-2 and Figure 4.2-3, on pages 44 and 45, in the Valero VIP EIR's "Response to Comments" document should be included in the Appendix. Cumulative exposures to refinery emissions over time may present "non-cancer risks" to sensitive receptors – for example, *Benicia residents who are also employees of the industrial park.* It is well known that chronic bronchitis and asthma are aggravated and/or triggered by diesel exhaust emissions and other refinery/industrial processing operations (particulate matter - PM10 and PM2.5; VOCs, black carbon, and other Toxic Air Contaminants). Cumulative and chronic health impacts should be discussed and analyzed for receptors within residential areas nearest the refinery fencelines and also for those employees in the industrial park. Other contributing sources of air pollution must be considered in evaluating health effects that are related to potential significant *cumulative emissions* – air pollution conditions that can be chronic over time or "spiked" (acute) during releases, fires, etc – that would impact sensitive receptors in the community. (Contributors to cumulative air impacts from sources of PM 10 and PM 2.5 include freeway emissions, diesel emissions from ships and Valero's coke trains, soot from fireplaces, pollen, and TAC emissions from other existing industrial polluters in the area.) To evaluate cumulative air emissions, other similar large-scale development projects that are proposed and planned for the area must be included in the calculations of air emission impacts in addition to Project-associated air emissions over time.

Further, cumulative air emissions from additional trains coming from CC County refineries (Phillips 66 and very possibly other refineries in the future) should be calculated as contributing to total cumulative Air Quality impacts, since Benicia, for most of the year, is downwind of Phillips 66, and Union Pacific's rails run through CC County and into Benicia and continue north and eastward.

Regarding odors, Item 3e [Checklist, Air Quality, p. II-15]. This item discusses whether there would be "objectionable odors" that might affect "a substantial number of people." The limited discussion of both potential impacts from construction phase and operations is as follows:

> *"Diesel equipment used to construct the project may emit objectionable odors associated with combustion of diesel fuel. However, these emissions would be temporary and intermittent in nature, thus odor impacts associated with diesel combustion during construction activities would be less than significant. There would be no change expected in the existing operational odors resulting from implementation of the proposed Project. This impact would be less than significant."*

Diesel fumes are considered by most people as highly noxious and offensive to smell, let alone that diesel exhaust fumes are toxic and can cause respiratory distress in sensitive receptors, *especially if the air is still and emissions are not dispersed*, as during weeks in winter when a cold damp fog sits on the ground and there is no wind. The Study's discussion shows little concern about four train trips daily entering and leaving the industrial park, 365 days a year, that would create "unpleasant odors." Locomotive exhaust would add cumulatively to the daily odors emanating from the refinery's processing block, tank lids, and other sources (asphalt plant) that can be noticed and smelled "off site" in the industrial park southeast and east of the refinery. The Checklist's assumptions do not take into account the numbers of people working in the vicinity of the Project.

Further missing from the Study's discussion of odors and emissions impacts: westerly winds carry toxic gases and their odors eastward from the refinery processing block and would similarly waft emissions from the Project. According to calculations derived from the wind rose published in the VIP EIR "Response to Comments," [cited above; Figures 4.2-2 and 4.2-3] approximately twenty percent (20%) of the of the year, mostly during late fall and winter months, the winds change direction and often die down, causing negative "off site" odors and air quality impacts to Benicia's residential neighborhoods west and south of the refinery but also in the surrounding industrial park northeast, east and south of the refinery fencelines.

Cumulative adverse impacts from odors emanating from the Project should be calculated as potential *additional* effects from *toxic emissions from all sources, under favorable and unfavorable wind conditions*, and, *should be discussed as related to health risks to sensitive receptors in both the industrial park and residential neighborhoods*.

The following comments are intended to lend contextual breadth and depth from a local perspective to the Study's evaluation of Air Quality impacts and are pertinent to my rejection of the Initial Study's Environmental Checklist of Air Quality impacts and the alleged sufficiency of Mitigation Measure Air-1, the Study's lack of analysis of cumulative emissions impacts and concern for health of local sensitive receptors. The comments also discuss the problem of analysis of local ambient air quality. These observations regard BAAQMD's role and public mandate under the federal Clean Air Act.

BAAQMD's mandate under the federal Clean Air Act is, as the Air District repeatedly advises, to ensure the general safety of the Bay Area's air basin *as a whole* for human health. Accordingly, as a department of CAL-EPA, the Air District monitors the Bay Area air basin to ensure that the region meets "attainment" standards – safe thresholds set by federal and state regulation for smog-producing gases – e.g. ozone precursor gases including nitrogen oxides, sulfur dioxides, volatile organic compounds [VOC's http://

iaspub.epa.gov/sor_internet/registry/termreg/searchandretrieve/termsandacronyms/search.do], greenhouse gases and particulate matter (PM10 and PM2.5). The Air District monitors polluting industries' emissions and quantifies them, using statistical averaging, to calculate the cumulative negative impacts to the air basin *as a whole*, thus to report to state (and federal) EPA regarding non-compliance with "attainment" goals for the region. However, it is little understood that The Air District has generally not seen it as their particular responsibility to be concerned or involved with monitoring ambient air quality with respect to human health in *local* neighborhoods and communities *living in close proximity* to a major polluting industry, such as a refinery or chemical plant. Local communities' desires to have monitoring stations installed within neighborhoods affected by refinery or other polluting industrial operations (with the purpose to better understand exposure risks, to accurately monitor for emission "spikes" in real time during accidental releases, etc.), have been mostly dismissed over the years as *not part of the general mission of BAAQMD*, and this is an ongoing frustration and active dispute with the Air District by the concerned communities of Richmond and Rodeo/Crockett, and also by concerned Benicians. A spectacular failure of the Air District to track "off site" emissions in real time during the Chevron Refinery fire in August 2012 is a prime example of the District's lack of preparedness or interest (or mandate as public servants?) to address *local emissions impacts* that may affect ambient air quality and thus human health in the vicinity of a major polluting industry, especially during time of accidental releases, fires or explosions.

Right now, in Benicia, various air-monitors that were purchased *for the benefit of the community* under specific terms of a Settlement Agreement negotiated in 2008 between Valero and the Good Neighbor Steering Committee have been unplugged and the trailer housing them closed up and stored on Valero's property, thus remaining inactive until further notice. Since the equipment's initial installation above Tennys Drive, a public access website has yet to be fully completed. (Participants in its development are Argos Scientific, the Good Neighbor Steering Committee and Valero.) The question hanging over the intended independent program is one of ownership. The City has refused to take ownership of the equipment on the community's behalf for what was intended to be a permanent, independent, educational Benicia Community Air Monitoring Program ["BCAMP"] to sample and analyze ambient air quality in real time and make data available to the public via a public access website. This equipment was meant to be flexibly used, including for mobile monitoring during accidents, monitoring air at school sites, and for such purposeful uses by Benicia High School's Green Academy science students.

It is a fact that the Air District has also shown little interest in the Benicia community's attempt to establish the local air-monitoring program as discussed here. It is unfortunate that the City of Benicia has not wanted to take responsibility for the monitors – equipment purchased for $200,000 by the 2008 Settlement Agreement, which also provided support ($50,000) for two years of maintenance and data analysis by an independent contractor (Argos Scientific). *Funding for an on-going program is not the point here.* It is disturbing that the City would reject ownership of the very tools to be useful for local ambient air monitoring on any given day, yet sign off on an MND for the Project, expecting the public to believe that the City has given the Initial Study its foremost attention with care to Air Quality impacts, with due consideration to protecting the public's health from potential negative "off-site" cumulative emissions effects of the Project, thus the refinery's *total cumulative emissions impacts* on the local community.

4. Biological Resources, [Checklist, p. II-19]. Mitigation Measure BIO-1: concerns Project construction activities during *"nesting season, Feb. 15 through Aug 31."* If construction occurs during the nesting season, the Study states: *"a biologist experienced in conducting nesting bird surveys shall survey*

the Project area and all accessible areas within 500 feet." The account goes on to briefly describe how nests would be protected during construction. Has the Department of Fish and Wildlife been contacted to review the Project?

The problem is, the Project is so narrowly defined that it appears to be limited to the immediate area surrounding the off-loading racks on Valero property.

For example, in item 4c, the following CEQA question is posed: *"Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means?*

The answer given presumes that "the Project" would only materially exist on Valero property, when logically, *by extension, and common sense*, it also exists along Union Pacific's tracks, upon which trains would be carrying crude through significant stretches of protected marsh areas with seasonal pools and wetlands and through river flood plains. The Delta Plan envisions Suisun Marsh as an area for restoration, where certain endangered fish species and plants could be at risk from spills. And although the Project would only add a small amount of new track on Valero property, it is not clear in the Study or Checklist whether potentially significant impacts owing to Valero's crude-loaded railcars traveling through sensitive ecologic areas on existing Union Pacific tracks would actually "count" as being potentially generated *as a result of the Project*, albeit such impacts are foreseeable, and *should* be discussed as a "credible worst case scenario" associated to Project operations. This begs a question about the limited Project Description and what it leaves out: there is no discussion of Union Pacific's rail routes by which crude-loaded railcars would travel, and whether those RR routes are to be considered *part of the Project as a whole.*

5. Mitigation measure GEO-1 [Checklist. Geology & Soils, p. II-29]:

Mitigation GEO-1 is *promised* to be provided, presumably at a later date, which violates CEQA's requirement that mitigation measures be planned and submitted at the time of a project's review.

GEO-1 raises the question of seismic risks to the area of the Project including possible liquifaction. GEO-1 does not discuss what would possibly happen if a severe earthquake occurs when a train is traveling within Benicia along the marsh where subsidence of rails could occur or rail misalignment, or in the case when railcars are off-loading crude at the racks. Given the active seismic area of the Project, this is a "credible worst case scenario" that is not envisioned in the Checklist's discussion of potentially significant seismic impacts that could indirectly affect the safety of Project operations and increase hazard risks, and also, potentially affect sensitive marsh and wetlands near Union Pacific's tracks.

6. Greenhouse Gas Emissions [Checklist: Greenhouse Gas Emissions. p. II -34,35]

The Study's discussion and Checklist is short on the subject of GHG emissions: according to the Checklist, construction GHG would not have a significant impact, *"directly or indirectly."* The Checklist states that BAAQMD does not identify a *"construction threshold of significance"* for GHG; however, the Air District does *"identify a quantitative threshold for annual operations of 1,100 metric tons of carbon dioxide equivalent (CO2e)."* The Checklist states that this is a conservative estimate, since *"for stationary source projects, the quantitative threshold is 10,000 metric tons of CO2e per year."* BAAQMD's threshold of 1,100 metric tons of CO2e per year for non-stationary sources is applied in analysis of the construction-related Project emissions.

Thus, for operational contributions to GHG, the Project is given a "pass:"

"Project operations would result in a net reduction of GHG emissions over existing conditions (see Table 8-2) as the overall capacity of the Refinery would be unchanged, but there would be less crude

oil deliveries by marine vessels that have higher emissions compared to deliveries of crude oil by rail transit. The proposed Project would reduce GHG emissions by up to approximately 3,543 metric tons of CO2e per year compared to existing conditions. Therefore, implementation of the Project would represent a beneficial impact."

The problem in evaluating GHG contributions is that, again, the Project appears to be so narrowly defined as if it were to exist materially only within Valero's property, and not extended through its train movements over miles. Are GHG emissions to be accounted for as Valero railcars, both loaded with crude or "emptied", are moving within Benicia limits? What about leakage of gases from railcars? What about trains moving through other cities and unincorporated areas – e.g., out and beyond Benicia's city limits? Where does the Project begin and end? Under CEQA, the Crude-by-Rail Project must be understood and evaluated in its entirety, "as a whole." (Please see my further comments on the need to identify, describe and evaluate "the whole of the Project.") There can be no doubt that total GHG emissions from crude oil processing and including the proposed rail Project operations would be even greater if assessments took in GHG emissions from hydraulic fracking and tars sands mining operations as well as long-distance rail transport of crudes – operations that, *by logical extension*, are the essential *raison d'etre* of the Project.

Ultimately, we must know about the extent to which Valero seeks to meet AB32 GHG reduction targets, and how they will achieve those state and federal goals for 2020.

7. Regarding Hazards and Hazardous Materials: [Checklist 8; p. II-37];

Valero's rail project is slated to be completed in 2014. The Study is without benefit of any reporting of crude-by-rail local/regional/national experiences; thus there is no documentation of the kinds of impacts we might expect over the life-time of the project. Yet, there are growing numbers of articles, (see Google news, click on email alerts, and type in "railroad, crude oil") about crude-by-rail transport happening across the country. Available information about other experiences with crude-by-rail transport into refineries, or the transport by rail of other hazardous materials, in the Bay Area and beyond, should be cited and discussed in order that the public be aided to recognize and meaningfully anticipate problems and potentially significant negative impacts. The highly relevant topic of foreseeable, unpredictable necessary adjustments or changes in train schedules by Union Pacific, considering the number of trains of all kinds including passenger trains that would be passing through CC County and Benicia, is not discussed.

Risks of Union Pacific RR transport of crude oil: What kinds of accidents could happen while trains are traveling? Would there by switching of tracks and change of locomotive engines at any place enroute from the loaded trains point of origin that may be occasion for accidents? What is the safety record of Union Pacific generally as a hauler of hazardous materials in California and elsewhere? Has Union Pacific been a carrier of crude for Phillips 66 or Tesoro (in Washington)? If so, what has been their experience and safety record transporting crude oil? What, if any, are federal policies and regulations that *specifically* govern transport of crude oil by rail? What would be Union Pacific's plans be in the case of stalled trains, derailment and/or failed railcar or uncoupling, etc.? What are "credible worst case scenarios" that are foreseeable hauling crude by rail? What about the *un*expected, therefore *un*anticipated "black swans" – accidents that could be catastrophic in impact? What are the City's emergency measures in the case of catastrophic releases (or fires, explosions) that could require evacuation of parts of the industrial park near Union Pacific tracks? What would the effect of adding Valero's crude-loaded trains to the over-all number of passenger and commercial train trips traveled daily on Union Pacific routes

passing through Benicia and cities "up county" and beyond? What kinds of equipment failures could occur at the off-loading racks on Valero property? What about any potential for side-lining of crude-loaded rail cars? Or problems that could occur with scheduling of crude train arrivals and departures that could interfere with schedule for coke trains that travel to and from the refinery to the coke silos and ships at the Port of Benicia?

What are Valero's risk management plans associated to the Project?

[Study: Project Description, p. I-9]

"The new rail car unloading facilities would include liquid spill containment. The rack would be sloped inward toward the centerline of the rack. A roadside curb would be provided east of the tracks near the fenceline to further contain any minor spills and leaks." . . ."

"Part of the existing containment berm for the tank field would be removed and a new concrete berm would be constructed approximately 12 feet west of the existing earthen berm. The resulting containment capacity would continue to meet or exceed minimum regulatory containment requirements."

Is the containment berm, which is described as "*exceeding **minimum*** [my emphasis] *regulatory containment requirements"* capable to control a major spill involving more crude released than *"minor spills and leaks?"* What would routine daily risk management involve? What emergency response would be involved in the case of an overflow of the berm, (which, if seen in a larger context, would seem the size of a kid's swimming pool)?

Discussion of "off-site" potential hazards are not considered except as portrayed in Mitigation Measure TRAN-2 of the Checklist, (see comments below on Transportation and Traffic), wherein an accident is envisioned that could occur at the intersection of the RR tracks and Park Road. TRAN-2 is thus narrowly limited in scope. The lack of any descriptive analysis of potential off-site hazards represents to this reader an extreme, obfuscatory oversight of the Project Description, especially given that there is no evidence given of the performance record of Union Pacific, and the national record to date of accidents involving crude-loaded trains.

8. Transportation and Traffic [Checklist; p. II-62 - 69]

With regard to performance and operational risks: under CEQA, a discussion of credible worst-case scenarios posed by a project must be considered. There will likely be a number of businesses in the industrial park that will want to comment on this issue considering that trains will be passing four times daily to and from Valero through the industrial park and crossing Park Road. Estimates are given with regard the likelihood of accidents at Park Rd. The Checklist's answer to the question "Would the project result in inadequate emergency access?" acknowledges that

"According to the 2012 emergency response data provided by the fire department, an average of about two emergency incidents a month occurred along the industrial areas of Park Road and Bayshore Road. The probability of an emergency incident occurring at the same time as a proposed Project train crossing is low. It is unlikely that the Project would cause the average emergency vehicle response time to increase to over 7 minutes for the Park Road and Bayshore Road industrial areas."

The Mitigation Measure TRAN-2 is designed to ensure that the City of Benicia Fire Department coordinates with Valero, and (presumably) other emergency services or county agencies

". . . to prepare an action plan in the event that an emergency occurs during a Project train crossing. The action plan would provide methods of adequately informing the Fire Department of the expected train crossing schedule and alternate routes to access the Park road and Bayshore Rd. industrial areas during the event that a train crosses Park Road."

CEQA requires that a mitigation measure must actually have a plan prepared and delivered to the lead agency at the time of the environmental review. The public must be able to review the mitigation plan. Thus, a mitigation plan cannot be promised and submitted at a later date, as suggested by the strange wording of TRAN-2, which makes it sound like an emergency response plan would be designed (only) *"in the event that an emergency occurs."* This notion of casual response planning is how the the Kalamazoo River spill in 2010 of "diluted bitumen" was horrendously mismanaged. (See Comment #10)

[Study: Project Description, p. I-11]

"A train with 200 feet of locomotive and 50 railcars in length would take about 7.3 minutes to cross Park Road at a speed of 5 mph. The at-grade crossing traffic controls provide a 30-second buffer time before and after each train crossing on Park Road. Each 50-railcar train movement is estimated to block traffic on Park Road for approximately 8.3 minutes. Operations would occur 24 hours per day/ 7 days per week/365 days per year."

Would there be need for signaling at Park Road to warn cars and trucks routinely traveling in the Industrial Park of a slow-moving approaching train? Which businesses would be most affected by the Project's use of the Union Pacific tracks through the area? (Traffic, Noise). What is the City's responsibility for traffic risk management in the Industrial Park? What recourse would businesses in the area have that use Park Rd. in the case where trains may be delayed, stalled or stopped on tracks? What "alternate route" plan for vehicles and trucks has been designed?

9. Mandatory Findings of Significance: [Checklist 18; p.11 - 74]

Item 18a

addresses whether the Project would degrade the quality of the environment, substantially reduce habitat of wildlife species, fish, biota etc. No significant impact is imagined. The Checklist of mandatory Findings of Significance apparently does not attempt to envision "off site" toxic spills or releases that could potentially degrade a sensitive ecologic area in the case of a severe, unexpected accident involving a crude-loaded train. Again, the Project is defined in such a way as seeming *not* to include the twice daily crude-loaded trains, each with 50 railcars destined for the Benicia refinery and traveling on Union Pacific tracks "off-site" through ecologically sensitive areas, nor account for potential significant impacts involving hazardous, toxic crude oil spilled into the Suisun Marsh or other such biologically diverse areas (wetlands, vernal pools, etc) in the Delta floodplain through which Union Pacific tracks extend.

A credible worst case scenario would be a train derailment, with leak or spill into the Suisun Marsh during the winter months when seasonal flooding occurs and vernal pools are created, and/or, during nesting season for birds, the Suisun Marsh being part of the Pacific Flyway. Since no accident or spill is discussed as a potential impact scenario, the Checklist doesn't provide any mitigation measure or

emergency plan for cleanup and recovery of a spill-site that would have to be sensitive to biota and wildlife.

It has been claimed by Valero publicly that the railcars that would be used are built with double walls, such that punctures to the cars would be next-to-impossible in the case of a derailment. That is a statement of *ideal conditions*. What about the foreseeable possibility of a crude-loaded train colliding with another Union Pacific train traveling at high speed – a "black swan" event? In any case, there is no visual representation in the Initial Study that shows the design features of a railcar built to carry crude oil safely. Are there special valves for off-loading that are safeguarded against accidental releases? Any special connectors for pipes used in loading and off-loading crude? What safety features are there to ensure that spills cannot occur in the case of train collision at usual traveling speeds off-site in the marsh area?

Emergency planning for a potential accident involving crude-loaded railcars cannot be routine. For example: Mitigation Measure TRAN-2 alludes to an *existing* emergency response plan in the limited case of an accident the Study does discuss– an accident envisioned at Park Road, where a crude-loaded train is crossing the road traveling at 5 mph toward the proposed off-loading rail rack on Valero property. The *existing* response plan referred to, (the "plan" is not described in full nor provided in the Appendix) is said to involve Benicia's and Valero's fire departments, and county officials involved with hazmat and public health risks -- accordingly, the usual protocol in the case of any accident at the refinery with potential off-site consequences.

However, in the case of an off-site possible spill in Suisun Marsh of a sour crude blend that contains a diluted bitumen called "dilbit" – (bitumen being the actual product/substance extracted from mining Alberta, Canada's tar sands) – there is currently no known method, practiced by EPA, to safely recover bitumen that doesn't cause further damage and destruction to the environment. A case in point: the tragic, still unresolved Enbridge Energy pipeline spill in Michigan, July 2010, involving an Alberta tar sands "dilbit," which poured into a stream that flowed into the Kalamazoo River. Kalamazoo River oil spill - Wikipedia. The Initial Study does not describe bitumen, nor identify it as a particular "problem" constituent of a "North American-sourced crude" type. Bitumen must be described. It is a heavy, thick, viscous, gooey, tacky, highly acidic, corrosive tar-like substance that cannot move through pipelines or be transported in railcars without having other lighter petroleum based products added to it. When spilled on the ground or in a stream or riverbed, the bitumen has been found to separate from the other lighter, more liquid petroleum-based additives and sink down into whatever material it is spilled into. The volatile compounds themselves become a toxic gas. So, while those "dilutants" disperse in air, (releasing toxic air contaminants and GHG) the heavy sulfur and lead-laden toxic bitumen sinks into the biologically alive and stoney matrix of a riverbed, streambed, pool, marsh, wetland or floodplain, remaining stuck to gravel and rocks and embedded in soil structures. The only cleanup strategy for removing dilute bitumen that had been considered in the Kalamazoo spill was dredging the river bottom -- an obviously highly destructive procedure that would further degrade, strip and ruin the 25 - 35 mile-long affected spill area in the river and floodplain. To date, the river and its river bank, its biota, rocks, soils and fish spawning areas remain impacted, subject of a $765 million dollar cleanup effort (as of summer 2012) that still has not been resolved. Reporting on the spill's cause, "NPR reported that "NTSB investigators determined that the six-foot gash in the pipe was caused by a flaw in the outside lining which allowed the pipe to crack and corrode."

Item 18b

addresses the question of whether the Project would have impacts *"that are individually limited, but cumulatively considerable."* The meaning of *"cumulatively considerable"* is given as

> *". . . incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."*

With respect to calculating cumulative air impacts and potential effects to the local environment and our Bay Area region with its many special ecologic areas: There is no mention in the Initial Study of the fact that Phillips 66 is now importing crude by rail, and that other Bay Area refineries may be jumping on board to build rail facilities for importing "North American-sourced crudes." It would be most interesting to know whether Phillips 66's rail project was permitted with an MND signed off by Contra Costa County or if an EIR was required. [Rodeo and Crocket are unincorporated communities]. Was the City of Benicia alerted to the Phillips 66 project at the time of its environmental review for its rail project? And concomitantly, has the City of Benicia, as lead agent, notified surrounding cities and unincorporated areas to let them know about the review of the Valero's Crude-by-Rail Project and to invite their comments?

CEQA requires that cumulative effects of a Project be evaluated that would potentially cause significant adverse impacts to air quality, water, biota and sensitive habitat. The number of trains carrying crude oil into Bay Area refineries is likely to increase because of the new movement in the industry to access "North American-sourced crudes," for which Union Pacific rails and the refineries' rail off-loading facilities would serve. If this is the case, and there is projected to be more crude-loaded train traffic on Union Pacific routes through the Bay Area, the Initial Study lacks any discussion of current and future similar crude-by-rail projects in Contra Costa County that would increase the level of risk of accidents and damage to sensitive ecologic areas through which increased numbers of crude-loaded trains would inevitably pass.

The question of responsibility for "off site" environmental impacts is not dealt with in the Initial Study but deserves to be considered. The crude-loaded trains would be traveling many miles to get to Benicia. Would Union Pacific, as a corporation, account for the "vehicle miles traveled" of Valero's trains? Which corporate entity would be ultimately responsible to report VMT with respect to AB32, the California Global Warming Solutions Act? Calculations of VMT for Valero's train travel in miles would provide quantified evidence of a crucial transportation cost to the environment of transporting crude by rail; but this subject is not part of the Study's evaluation of GHG contributions of the Project. Nowhere is any mention of AB32 in the Initial Study or Environmental Checklist. Accordingly, there is no respect demonstrated in the environmental review of the intent and spirit of AB32. Where are the origin(s) of the loaded trains? What are the train routes that will be traveled by Union Pacific trains carrying crude to Benicia? How many highly sensitive ecologic areas would Valero's and other refineries' crude-loaded trains pass through? What would the operational risks at the trains' *loading* ends that could impact Air Quality and Biological Resources at that location? Whatever facts exist are hidden from the public by the Initial Study.

10. There is much deserved concern in Benicia, and beyond in the Bay Area, about the issue of what crude types would be imported by railcars to Benicia. There is growing public concern that tar sands "diluted bitumen" is planned to be among those "North American-sourced crudes" transported to Benicia and other Bay Area refineries by rail.

The primary reason for Valero's rail project in the first place is to be able to access certain crude types *"that have recently become available"* in North America. [Overview - I-1]. The 100 railcars per day that would contain sour crude blends with specific chemical properties and densities. These crude types, destined to be refined as part of Valero's daily processing "mix", are *specific* products being transported for processing, so must indeed be considered intrinsic to the Project. Certainly, the essential reason for proposing and implementing the Project is to be able to import the various *"North American-sourced crudes"* that heretofore have been *inaccessible* to Valero by other means of transport (pipeline and marine vessel). Without this reason, the Project could not be characterized as needing to exist.

Among the heavy "North American-sourced crudes," some, if not all, have presumably been "off limits" for Valero's Benicia refinery because of lack of feasible access; for even if the Keystone XL Pipeline were to be approved, Valero Benicia would not be accessing the particular tar sands "dilbits" (diluted bitumen) at the end of the Keystone pipeline's route. Rail transport from the midwest and Canada would serve to provide that access. In other words, without rail transport, there would be little opportunity, economically speaking, for Valero to import certain North American crude blends into Benicia, including tar sands blends from Alberta Canada. This issue was not discussed in the Initial Study. The general descriptive term "North American-sourced crude" implicitly suggests "proprietary information" that is not, *by corporate insistence*, to be disclosed. Regulatory agencies participate in protecting company "trade secrets." The Project Description basically tells the reader, "trust Valero's word:" that it will make little or no difference where the "North American-sourced crudes" actually come from or what their chemical composition consists of.

[Study; Project Description, p. I-2]

> *"The Refinery does not anticipate a need to change the existing Refinery operations or process equipment, nor would emissions from Refinery operations change (with the exception of the storage tank service and rail unloading emissions) as a result of accepting and refining the proposed North American-sourced crudes."*
>
> AND,
>
> [Study, Project Description, I-6]
>
> *"The North American-sourced crude oil gravity is expected to range from 20 to 43.5° API, so it would be similar or somewhat lighter than some of the current constituent crude oils used in blending. The North American-sourced crude oil sulfur content would range from 0.06 to 3.1 by weight percent, but on average* [my emphasis] *would be similar to that of the current constituent crude oil used in blending. The North American-sourced crude oils are expected to replace crude oils of similar gravity and sulfur content that are currently brought in by ship. The Refinery's crude oil feedstock is currently blended to achieve Refinery feedstock specifications, and the North American-sourced crude oils would be blended in the same manner. Since the North-American sourced crude oils would replace crude oils with similar properties, it is anticipated that the Refinery would continue to operate within its existing specifications for crude oil gravity and sulfur content range."*

The public has a right to know more about higher levels of sulfur and other constituents such as lead that the Study studiously avoids being clear about, especially alluding to "on average" comparisons with currently processed sour crude types. The obfuscation is dramatic. Obviously, the Study hits a sensitive nerve: there is no account of the corporation's reasons for non-disclosure, nor acknowledgement of "trade secrets." The most extensive reference in the Study to the types of crude to be imported is given as

"North American-sourced crudes that have recently become available" [Study: Overview, p I-1]. This is hardly informational. On the contrary, *what it doesn't say* represents the Initial Study's enormous data gap. The *only mention* in the MND of the crude to be imported by rail into Benicia is entombed in the following sentence in the MND's introduction:

> *"The crude oil to be transported by rail cars is expected to be of similar quality compared to existing crude oil imported by marine vessel."*

The Study does not say what specific types of "North American-sourced crudes" are intended to be imported to Benicia and where they would be coming from. This omission is purposeful and morally wrong, especially given the context of global warming and climate change caused by human activities and the increased GHG emissions represented by "the whole of the Project." The Project Description gives no account of those actual sources, e.g., *actual locations where trains would be loaded with types of crude oil* (shale oil, "tight oil", tar sands bitumen/dilbit). The Description gives only generalities about crude mixtures in feedstocks and similarities of "North American-sourced crudes" to currently imported and processed sour crude types; thus, basic information required to evaluate potential negative effects of the "Project as a whole" is *wholly* lacking!

The Study's Overview [p.I-1.2] asks the public to accept generalities and comparisons about the range of qualities of acidity and density of "blended crude oil slate" regularly processed. The description wants to assure the reader that nothing possibly could be different, nor needs changing as a result of adding a percentage of the newly accessible "North American-sourced crudes" to the feedstock mix of crudes processed daily. Where is the actual evidence and data to support the Initial Study's conclusions and assumptions about "benefits" to Air Quality, or that contribution to Greenhouse Gases will be minimal during the Project's operations over time? Again, the Project Description doesn't account for the intended lifespan of the Crude-by-Rail Project, nor its extensions, reaching out by rail far and wide.

[Initial Study, Overview, p I-1,2] :

> *"The quality of crude oil varies by oil well locations and reservoir formations; therefore, the quality of crude oil received from the same source may vary over time. Refineries are designed and equipped to process crude oil of a specific quality that is broadly defined by a range of gravity and sulfur content."* . . . .
>
> *"A blended crude slate is comprised of multiple individual crudes that when combined provide a crude mix that refinery hardware is designed to process. The proposed North American-source crudes will be a constituent in the Refinery's blended crude oil slate."* . . . . *"The Refinery's various crude oil feedstocks are currently blended to achieve Refinery feedstock specifications, and the North American-sourced crude oils would be blended in the same manner. Since the North American-sourced crude oils would be replacing crude oils* [that have been imported by marine vessel] *with similar properties, it is anticipated that the Refinery would continue to operate within its existing specifications for crude oil gravity and sulfur content range.*
>
> *The Refinery does not anticipate a need to change the existing Refinery operations or process equipment, nor would emissions from Refinery operations change (with the exception of the storage tank service and rail unloading emissions) as a result of accepting and refine the proposed North American-sourced crudes."*

Why be concerned? The MND seems to say, "don't be."

We have known since the Valero Improvement Project was introduced to the community in 2002-03 that Valero would be retooling/upgrading the refinery to be able to accommodate a greater variety of heavy sour crudes. These were explained to be more corrosive (because of higher sulfur content) and also more productive of certain emissions; but the Valero Improvement Project would make technical improvements to account for the requirement to reduce increased sulfur emissions and other toxic air contaminants associated to processing more types of sour crudes and sour crude feedstock blends. It is my understanding, from conversations over the years with Valero regarding VIP, that early on after purchase of the refinery from Exxon, Valero foresaw that the corporation – the largest independent refiner in the U.S. – would be more dependent on purchasing sour crudes on the open market, after their initial 10-year contract with Exxon expired that had allowed Valero to continue to process a great percentage of Alaskan sweet, light crude (that had been extracted from Exxon's own fields near Prudhoe Bay). And since the Benicia refinery had originally been designed to process Alaskan sweet crude, the VIP Project was essential to Valero's intention to import more types of sour crudes.

The higher levels of sulfur in sour crudes also contributes to a growing risk of corrosion, which was the presenting cause of what became a catastrophic leak and fire at Chevron's Richmond Refinery in August, 2012. The refining industries' increased processing of more sour and heavier crude types represents a potential cumulative risk to safety of local communities, local air quality and public health.

> *"The North American-sourced crude oils are expected to replace crude oils of similar gravity and sulfur content currently brought in by ship."* [Study: Overview, p. I-2]
> *"Thus, the proposed Project could reduce marine vessel deliveries by up to 25,550,000 bbl per year. Based on a 3-year baseline period from December 10, 2009 through December 9, 2012, annual marine vessel deliveries could be reduced by up to 81 percent. Crude delivered by rail would not displace crude delivered to the Refinery by pipeline."* (Study: Overview, p. I-6]

The first sentence quoted does not claim *absolutely* that "North American-sourced crude oils" would replace crude oils of similar gravity and sulfur content as those crudes imported by ship; it simply says that Valero has the *expectation* that the crude oil types imported by rail will be *comparatively similar* to those sour crudes now being imported by marine vessels. The meaning of the second sentence, about advantages of replacing ships with trains, which would cause a reduction in total annual diesel emissions, may be taken at face value as a "good." However, such value statements should be contextualized in the larger frame of total emissions calculated for the Project; thus, such a "good" must be factored as part of the the refinery's *total emissions over time* that are owing to the processing of more sour crudes with greater sulfur content, metals such as lead, and other toxic air contaminants present, for example, in highly corrosive, acidic diluted bitumen, to make the point clear.

Cumulative potentially significant negative impacts to air quality and an account of *cumulative* GHG emissions that are related to the specific "North American-sourced crudes" planned to be imported must be described and discussed in sufficient detail with data to support claims in the context of the projected life-span of the Valero Project and other existing and planned Bay Area rail projects as well as other existing and planned large-scale industrial developments: therefore, to evaluate the cumulative impacts from all existing emissions sources within the vicinity of the Project, so that emissions contributed by specific "North American-sourced crudes" can be understood in full context of cumulative risk.

Accordingly, if Valero's crude feedstock may, by virtue of permitting the Crude-by-Rail Project, regularly have as part of its mix a percentage of those tar sand dibits, this must raise the potential for significant and catastrophic foreseeable environmental effects of diluted bitumen (dilbit) if and when spilled. Without details of the chemical makeup of tar sands blends as well as other crude types imported by rail, the public cannot judge the toxicity and extent of potential environmentally significant impacts, and the difficulty, *if not impossibility* of cleaning up after a spill, say, in the Suisun Marsh or Sacramento River floodplain or Carquinez Strait or other such sensitive interior landscape through which Union Pacific tracks pass.

So I ask: if Alberta's tar sands bitumen blends are intended to be transported by rail to Benicia, then, with as little information as provided by ESA's Initial Study, how can the public accept a finding of *no potential significant impact to the environment anticipated that cannot be mitigated*?

Enbridge Resisting Final Clean-Up of Its Michigan Oil Spill | InsideClimate News. See also The Exxon Oil Spill in Mayflower, Ark.: Slide Show of Annotated Photographs and Maps | InsideClimate News

One only has to "think Kalamazoo."

11. Under the rubric of the full intent of AB32, the Project should be discussed and evaluated with regard to the vision for a sustainable economy that AB32 upholds – an economy and way of life that doesn't continue to destroy the environment and the atmospheric conditions that make life on earth livable. I am talking about how I believe this Project represents the status quo and a level of desperation in the industry to continue to pursue the mining for crudes of every type, in every possible place of "reserves" in North America, to reap the benefits near term, in the case we are reviewing here, of what the industry would like to consider an "inexhaustible supply of crude" that would be consumed indefinitely into the future.

Twenty-five percent (25%) of America's "oil" is now coming from Alberta's vast network of tar sands mining operations, Alberta Energy: Facts and Statistics , by means of a highly energy intensive and water-demanding open pit mining operation to extract bitumen – a tar-like substance which is not an oil, but which is naturally occurring in deep sand formations. It is heavy, highly acidic and so thick it must be washed out of the sand deposits by extraordinary amounts of hot water under pressure, using tons of natural gas to supply the energy to heat the water, and thus contributing to massive GHG emissions. The bitumen itself is too dense and heavy to be pumped through a pipeline without being made "lighter." To get the consistency required for pipelines or unheated railcars, the raw bitumen must be diluted with other lighter more liquid petroleum products.

To my knowledge, BAAQMD has not described the heavy crude "blended" types that have been created from the bitumen extracted from Alberta tar sands. Although the Initial Study doesn't give it a name, or any specifics, easy research online tells that the Canadian government is price-supporting Alberta tar sands' "crude blend," which is called "Western Canada Select," to compete against "West Texas Intermediate", the light sweet crude used historically as the pricing benchmark in the industry. Bitumen may contain metals –high lead levels – besides its high concentration of sulfur. Has the Air District made public whatever it knows about the processing of "Western Canada Select?" We need to know from the Air District or other experts if this particular blend would be imported to Benicia and whether it would cause emissions that might meet or exceed "thresholds of significance."

Wikipedia entry on WCS

Cenovus Marketing page for WCS

CrudeMonitor.ca technical profile for WCS

In the absence of more information from Valero, the public has the burden of trying to imagine the consequences of a 10 - 50 year life-span of the project. Again, there's no indication in the Initial Study of the Project lifespan.

12. [Initial Study: Overview p I-5]

"The Refinery is limited by its BAAQMD permit (condition 20820, part 50) to processing crude oil at a feed rate of 180,000 barrels per day on a maximum daily basis and 165,000 barrels per day on an annual average basis."

Thus, we must try to understand how the community might be impacted on any given day when the processing "feed rate" is at its maximum capacity permitted, of 180,000 barrels per day, as compared to how those impacts might be seen in the context of an annual average permitted feed rate of 165,000 barrels per day. To add to the complexity of estimating and evaluating emissions impacts, we have to consider the possible increased health risks from processing diluted bitumen blends if and when they are added to the feedstock to be processed *at its maximum capacity* on any given day.

13. There are no facts mentioned in the Study about other Bay Area importers of tar sands crude blends, yet getting the facts is essential to assessing the claims in the MND with regard to potential cumulative air quality impacts of the project and the possibility especially of dilbit-loaded trains involved in accidents.

> *"The crude-by-rail spike has also led to more U.S. railway oil spills -- 14 from 2007-09 to 158 between 2010-12, according to the Pipeline and Hazardous Materials Safety Administration. In a recent International Energy Agency report based on U.S. Department of Transportation data, the risk of a train spill was six times greater than a pipeline incident between 2004 and 2012. . . . On March 27, a train derailed in Minnesota, spilling 15,000 gallons of Canadian tar sands crude."* Canadian tar sands crude heads to refineries, Benicia's Valero may be on list - Vallejo Times Herald

14. FINALLY, IN CONCLUSION:

Under CEQA, a thorough environmental review, a full EIR, should enable the public and stakeholders to understand the "whole of Valero's Crude-by-Rail Project" and its ramifications and thereby to fairly judge, based on sufficient evidence and scientific information, the long-term, potentially significant and cumulative environmental impacts that would affect our local community, our local and regional lands and waters. CEQA would also require, in a full EIR, a thorough discussion of "Alternatives" to the Project, including the option of "No Project", in order to more fully capture the contexts in which the proposed Project should be judged.

There is considerable concern across the region and nation for the ultimate impact of increasing GHG emissions from the processing of more varieties of dirty crudes for which the Valero Crude-By-Rail project is designed to enable. Although the Initial Study is 190 pages, and contains statistics and charts about GHG emissions *during construction phases*, there are very important concerns and questions regarding the long-term consequences for global warming and climate change if we as a nation continue to support the kind of environmentally destructive mining processes which could allow "business as usual" to be pursued for years to come, for the economic benefit in the short-run, since ultimately – in not

so many years ahead – fifty? – we can mine ourselves out of crude oil, wherever reserves are located in North America that are technically made "easy to get at" now.

But what about the ethics, considering the future of our children and their children? Extracting, refining and indefinitely burning Alberta's tar sands "dilute bitumen" is not sustainable, if we want to maintain civilization and the semblance of a temperate climate for humans and other living members of our "more-than-human-world." This is the conclusion reached by the preeminent earth scientist and former director of NASA's Goddard Institute, Dr. James Hansen.

There is no reference anywhere in the Initial Study to *any* literature on the subject of global warming and the impacts of continuing extraction and burning of fossil fuels. This is a significant omission. I hereby reference Dr. Hansen's trenchant book "Storms of My Grandchildren," and Canadian author, Andrew Mikiforuk's widely acclaimed and quoted "Tar Sands: Dirty Oil and the Future of a Continent."

The dangers represented by the *total, extreme environmental costs* of importing diluted bitumen from Alberta tar sands should be factored into evaluation of Valero's proposed Project with respect for state and national goals for reducing GHG: the destruction and disappearance of thousands of square miles of pristine northern boreal forest, which serves as a carbon sink for the world; the excessive daily demand for fresh water and energy (natural gas) to extract bitumen from the sand; the miles of toxic lakes formed from the waste water after extraction; the degradation of regional and local air quality at the locations of the vast network of tar sands open pit mines (and hydraulic fracturing mining operations) and in communities with refineries processing the heavy crudes in their midst; degradation of rivers' sensitive ecologies where spills and accidents leave their permanent imprint; the accelerating rate of the melt of permafrost, ice sheets and glaciers around the globe; the continuing, dangerously accelerating rise, in a short time of recent decades, of CO2 in the atmosphere to 400 ppm, which is beyond what atmospheric scientists consider the "safe" threshold, at 350 ppm for human civilization. We thus continue to contribute to climate change in the quest to burn more and more fossil fuels, and THIS should be raised as a moral imperative, an ethical, environmental issue of the Valero Crude-by-Rail venture, since the Project would materially support "business as usual", (as evidently railroaded by the MND). This is a cruel fact that looms over the "whole of the Project" under review. Gross environmental costs are still considered "externalities" when evaluating projects, so they are not accounted for in the review of Valero's proposed rail project. The brief discussion in the Initial Study regarding reductions of GHG during construction phases minimizes the whole larger question.

So, where does the "chain of custody" stop? From oil fields, tar sand mines, and fracking sites in shale oil country, to refinery to consumers – we're all in this, allegedly trying to see our way to a sustainable economy and way of life that would depend for basic energy and transport on alternatives to fossil fuels. Pipe dream? We the people, burning fossil fuels, are part of the "chain of responsibility." We can no longer say that what any one person does, or any one company or industry does, doesn't matter. To protect communities at risk, we who have an industrial giant in our midst, need to raise our questions and be reasonably considered sane and responsible for doing so.

The long-range, dangerous environmental effects of encouraging further mining operations in Alberta's tar sands, or at fracking sites in shale formations around the country; the encouragement for continuing "business as usual" by use of rail transport that makes "North American-sourced crudes" readily accessible and available to refiners, thus, bringing these sour crudes for processing here in the Bay Area: for all of these reasons and more, the Initial Study and MND for the Valero Crude-by-Rail Project represents a failure of responsibility to address the extent and reasonable concern of the public, for protection of the environment generally, and the health and safety of our community and the planet our children will inherit.

In my view, for all of my questions and reasons stated, the MND that would permit the proposed Valero Crude-by-Rail Project must be rejected by the Planning Commission, and a full Environmental Impact Report be required.

* * *

APPENDIX:

CEQA GUIDELINES §15064.4. Determining the Significance of Impacts from Greenhouse Gas Emissions.
(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, todescribe, calculate or estimate the amount of greenhouse gas emissions resulting from a project.A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or

(2) Rely on a qualitative analysis or performance based standards.

(b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

Note: Authority cited: Sections 21083, 21083.05, Public Resources Code. Reference: Sections 21001, 21002, 21003, 21065, 21068, 21080, 21082, 21082.1, 21082.2, 21083.05, 21100, Pub. Resources Code; Eureka Citizens for Responsible Govt. v. City of Eureka (2007) 147 Cal.App.4th 357; *Mejia v. City of Los Angeles* (2005) 130 Cal.App.4th 322; *Protect the HistoricAmador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099; *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98; *Berkeley Keep Jets Over the Bay Com. v. Board of Port Comm.* (2001) 91 Cal.App.4th 1344; and *City of Irvine v. Irvine Citizens Against Overdevelopment* (1994) 25 Cal.App.4th 868.

Brad Kilger, City Manager
250 E. "L" St.
Benicia City Hall
Benicia, CA 94510

6-28-13

Dear Mr. Kilger,

Valero is one of the biggest taxpayers in Benicia, as well as one of the most philanthropic businesses. I support Valero's request for permit to build its rail car facility. We must do all we can to support our longstanding business who have seen this city through hard times.

I've said it many times to many people, but I'll say it again: "God Bless Valero!"

Very sincerely yours,

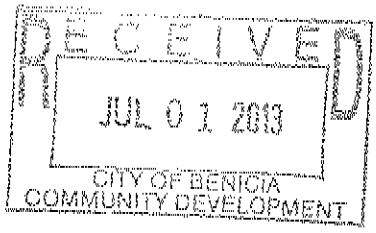
Roger Green

[Roger Green]
F & P Engraving
Benicia, CA 94510

WRITTEN COMMENT # C 20

Amy Million - Fwd: Valero crude oil transport and processing project

From: Brad Kilger
To: Amy Million
Date: 7/1/2013 9:36 AM
Subject: Fwd: Valero crude oil transport and processing project



>>> jkjerome <jkjerome@aol.com> 7/1/2013 2:00 AM >>>

To: Brad Kilger, City Manager, Benicia

From: Jerome Page, 1250 West L St Benicia

I write about the proposal to transmit to and process tar sands crude at the Valero refinery. I have spent a considerable period studying and writing about the perils and dangers of global warming. Clearly one of the most perilous avenues to this danger is representated by tar sands mining and processing. I am shocked and find it appalling that Benicia could possibly become a conduit and facilitator for this environmental disaster. Anyone with the faintest acquaintance with the research on CO2 buildup, on tar sands crude and on the history of human environmental error when profit is at issue should similarly be in shock at this prospect. It is absolutely crucial that there be a full and complete environmental study of this disastrous rail transport and processing project with adequate opportunity for both the public and relevant environmental research experts to comment. Anything less would represent an absolute failure of public responsibility.

WRITTEN COMMENT # C21

PONDER ENVIRONMENTAL SERVICES, INC.

Dear City of Benicia Planning Commission Members:

I am writing in support of the Valero Crude by Rail project that has been proposed to the City of Benicia for approval. Based on the project, as far as the information I have been able to gather, it seems it would be a win-win situation for the City of Benicia and Valero. Not only will it reduce emissions and reduce our reliance on foreign crude, it will create 30 full time jobs at the refinery for operation of the Crude by Rail system. Also, it will bring 120 skilled jobs to the project for the projected 6 month construction time. The ability to process lower cost crude will also make Valero more competitive in the marketplace.

Ponder Environmental Services, Inc. (PES), is a leader in vacuum truck services, waste transportation, storage tank cleaning, tank degassing, vapor control, roll off services, hazardous waste cleanup, steam cleaning / pressure washing and confined space rescue. We recently moved into the old Dolan's Lumber Yard location at 4563 East Second Street. As a neighbor to Valero and a member of the Benicia Industrial Park Association PES urges the City of Benicia to approve this project, which will benefit the City, the Benicia Industrial Park, and also its major business partners.

Thank you,

Jim Ponder, President
Ponder Environmental Services, Inc.

WRITTEN COMMENT # C22

Roger D. Straw

766 West J Street • Benicia, CA 94510
(707) 373-6826 • rogrmail@gmail.com

June 30, 2013

City Manager Brad Kilger
Planning Commissioners Sherry, Oakes, Smith, Grossman, Sprague, Dean and Young
Mayor Patterson, Vice Mayor Campbell, Councilmembers Hughes, Schwartzman, Strawbridge
c/o City of Benicia
250 East L Street
Benicia, CA 94510

RE: Valero Crude-By-Rail Project and Benicia's Notice of Intent to Adopt a Mitigated Negative Declaration

Dear Mr. Kilger, Commissioners, Mayor Patterson and Councilmembers:

I have taken time to study our former Community Development Director's Notice of Intent to Adopt a Negative Mitigated Declaration, Valero's Application and ESA's Initial Study. I write today to oppose Valero's project and to encourage the Planning Commission and Council to reject the Mitigated Negative Declaration. The MND and Initial Study are clearly inadequate preparation for a project such as this, leaving many serious issues unexplored. In addition, this process has given the public little opportunity for study and input in review of this project.

Although I have spent considerable time studying the documents and placing them in a wider context, my comments here are meant only as a brief – yet heartfelt and thoughtful – summary. Please see my two-page Comments following this letter.

In short: I urge the Planning Commission at its meeting on July 11 to deny the Use Permit and to reject the Mitigated Negative Declaration. There are so many unresolved, unexplored and highly significant environmental effects, that Valero's Crude-By-Rail Project should go forward only after a full EIR study.

Thank you.

Roger D. Straw

WRITTEN COMMENT # C 23

COMMENTS – FOR BENICIA PLANNING COMMISSION CONSIDERATION ON JULY 11, 2013
Valero Proposed Crude-By-Rail Project
Roger D. Straw, 766 West J, Benicia
June 30, 2013, p. 2

Overview – Planning in a Wider Context

Vision - Planning is a future-oriented thing. Our best planning is *visionary*, and aimed toward a future that improves our overall condition. The Planning Commission must always be asking, "What kind of Benicia do we want to see in a decade, or fifty or a hundred years from now?" and, "How does this application move us toward the future envisioned in Benicia's General Plan?"

Context - Context is critical. Benicia and Valero do not exist in isolation. At this time in history, the world is transitioning from fossil fuel driven economies to economies powered by alternative technologies. The decisions we make together (Benicia and Valero) cannot be short-term decisions, focusing on investments that will pay off in the short run, but long-term decisions, investments that will prepare for a different kind of world – and that will lead the way for other communities to prepare for that unfolding reality.

Need for a Public Process

CEQA / EIR - Valero's Application, Mitigated Negative Declaration and Initial Study must undergo a thorough CEQA review, calling for a full EIR. It was premature of the City's former Community Development Director to recommend approval of a Use Permit and adoption of a Mitigated Negative Declaration based unquestioningly on the accompanying ESA Initial Study prepared for the City and paid for by Valero.

A Public Hearing - The hearing before the Planning Commission on July 11, 2013 is the first – and perhaps the ONLY chance the public will have to question and raise public concerns about this project. An EIR would greatly increase the City's chances for avoiding huge and costly mistakes, mistakes that could be huge and costly for not only Benicia, but for Valero, the region and indeed the world.

Specific Questions and Concerns

- **Rail spills and accidents** – Many Benicia residents have deep concerns about public health and safety and environmental impacts associated with potential crude oil spills and accidents along rail routes, including the protected waters of the Suisun Marsh and areas beyond Valero's rather shallow protective berm. The Initial Study does not weigh the *wider context* of a possible oil spill, contaminating the protected waters of our Suisun Marsh or the places of business in Benicia's Industrial Park. Rail spills have increased dramatically in the U.S. as crude-by-rail shipping has grown in recent years. A pipeline spill of diluted bitumen near Kalamazoo, Michigan caused an unimagined, unprepared-for nightmare, with chemical separation of the blended crude that led to evaporation of harmful chemicals and, even worse, the sinking of heavy tar-like globs of crude that have been near-impossible – even at great expense (reportedly over $750 million so far) – to clean up in a watery environment. Unique and unparalleled emergency planning for a new kind of spill should be included as a mitigation after

a thorough EIR investigation. The emergency plan should extend beyond Benicia through the Suisun Marsh and including rail lines throughout Solano County. Costs for such an expensive clean-up should also be predicted, and funding sources identified.

- **Refinery accidents** - Valero, the scientific community and the public know a lot more about refining of "sour" crude than we did when Valero was approved in 2002-03 for upgrades that allow for its current processing of such heavy crudes. The massive explosion at Chevron in Richmond in 2012 has alerted Benicia citizens to the damaging corrosive effects of heavy crude on refinery pipes and equipment. These corrosion concerns will now expand to include rail cars and equipment. This unfolding knowledge should be explored in a full EIR, with careful plans and appropriate mitigations.
- **Potential for increase in crude processing** - Although Valero states that it *currently* does not plan to increase its supply of crude oil, the project creates a *potential* for substantial increase in the supply of heavy, dirty diluted bitumen from North American locations over time. How can the public know what the effects will be 10 or 50 years from now?
- **An open door to tar-sands crude** - This project would *position* Valero, should it choose to do so, to import diluted bitumen from the tar-sands pit mines in Alberta. The Initial Study designates "crude blends," but does not spell out the types of blends or the commercial suppliers or their sources. Questions put to refinery personnel are inconclusive, if not evasive. The City and its partner corporation have a moral obligation and global responsibility to assure Benicia citizens and the world that opening this door will NOT at some future date result in support for a Canadian-government-supported industry that is stripping the Alberta boreal forests, endangering wildlife and human health there, and contributing at an alarming rate to global warming.
- **Air quality** - There is great potential for an increase in air pollutants despite Valero's claim that emissions will remain at current levels. Benicia needs a full EIR to fully investigate this issue. A full EIR will examine the project in light of AB32, which governs industrial pollutants, sets goals for reductions in greenhouse gases, and lays out a vision for a sustainable economy. *(Note that nowhere in the Initial Study is California's AB32 even mentioned.)* An EIR would also much more strenuously measure the project against Benicia's General Plan, and a full EIR would carefully study how and whether this project contributes to and undercuts Benicia's goals for reduction of greenhouse gases. *(Benicia's Climate Action Plan is mentioned on p. 60 of the Initial Study.)*
- **Traffic** - There will be increased traffic delays due to increased rail traffic (two 100-car trains per day). The public needs to hear from Industrial Park owners and workers whose business could be inconvenienced and profits diminished. Also, EMS and emergency vehicle access to the Industrial Park could be affected, causing very real safety concerns. These factors need greater study and additional mitigation strategies.

Thank you for this opportunity to work with you on planning for Benicia's future and a prosperous, safe and sustainable Valero.

Roger Straw
766 West J Street, Benicia
(707) 373-6826
rogrmail@gmail.com

347 Goldenslopes Court
Benicia, CA 94510
707-745-4675

Community Development Director
City of Benicia
250 East L Street
Benicia, CA 94510

June 30, 2013

Re: Mitigated Negative Declaration proposed for the Valero Crude by Rail project.

Dear Sir/Madam:

The following are comments on the subject document, organized by topic.

Assumptions for Air Pollutant and Greenhouse Gas Emissions

Air pollutant and greenhouse gas emissions (GHG) emissions were estimated by ERM, a consultant to Valero, the Applicant. A review of these estimates suggests that ERM assumes the crude transported by rail originates at the Union Pacific Railroad yard in Roseville, and the crude transported by tanker originates two miles west of the Golden Gate Bridge. These assumptions may not be appropriate for an adequate analysis of potential impacts from air pollutant and GHG emissions.

- What is the justification for these assumed origins?
- Why didn't the comparison analysis assume the actual origin in North America of the crude transported by rail with the actual origin in North America of the crude transported by rail?
- If the origin of the crude varies, then shouldn't origins that support a worse-case analysis be considered?

Greenhouse gas emissions indirectly generated by the Proposed Project

The Environmental Checklist includes the question – *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?* The analysis only evaluates GHG emissions generated by the equipment used during the construction phase and by the vehicles used for transport of crude oil. Indirect GHG emissions are not evaluated in the Mitigated Negative Declaration. One potential indirect source of GHG emissions are those generated by extracting the crude oil that will be transported to the refinery. The proposed Project will provide infrastructure to enable the refinery to receive tar sands crude from Alberta Canada, which requires methods of extraction that generate GHG emissions far in excess of the extraction methods used for other crude oil available to the refinery.

- Should the Mitigated Negative Declaration compare the GHG emissions produced by extraction methods for the crude oil currently transported by marine vessels with the

WRITTEN COMMENT # C 24

emissions produced by extraction methods for tar sands crude from Alberta, Canada, and a likely worse-case scenario enabled by the proposed Project?

Assumptions for Queue Storage on Park Road

Table 16-1 of the Mitigated Negative Declaration describes existing at-grade rail operations. Average crossing duration on weekdays at the Park Road crossing is listed as 2 minutes 50 seconds. Each train delivery of the proposed Project would block traffic on Park Road for 8.3 minutes.

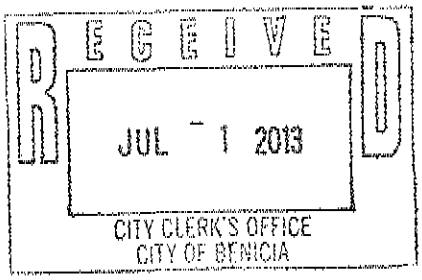
The Mitigated Negative Declaration finds the queues on the east side of the track at Park Road would generally be contained within the Park Road segment between the tracks and industrial Way. This document speculates that the segment of Park Road between the at-grade railroad crossing and Industrial Way provides a two-way left-turn lane which could be utilized as a queue storage lane by some drivers waiting on westbound Park Road for the train to clear.

- Does this analysis rely on drivers queuing in the two-way left-turn lane?
- Would the City or the *California Manual of Uniform Traffic Control Devices* support this use of the two-way left-turn lane?

The above comments are offered to support a complete and adequate environmental review of the proposed Project.

Sincerely,

Steven L. Goetz



July 1, 2013

Mary Frances Kelly Poh

643 Windsor Drive
Benicia, CA 94510
Phone: 707-745-5461
Mfpoh@pacbell.net

City Manager Brad Kilger
Planning Commissioners Sherry, Oakes, Smith, Grossman, Sprague, Dean and Young
Mayor Patterson, Vice Mayor Campbell, Councilmembers Hughes, Schwartzman and Strawbridge

C/O City of Benicia, 250 East L Street
Benicia, CA 94510

Dear Mr. Kilger, Commissioners, Mayor Patterson and Councilmembers,

I would like to raise questions and concerns regarding Valero's Application and ESA's Initial Study and to oppose the adoption of a Mitigated Negative Declaration because I simply don't think this is a sufficient review of this project.

For twenty years I represented the citizens of District Two on the Solano County Emergency Medical Care Committee. I am by profession a Registered Nurse but I sat in a public seat. I participated in developing the EMS Manual and the agreements which lead to the Countywide EMS system. I am also a member of the California Native Plant Society and Vice President of the Willis L Jepson Chapter of CNPS. This chapter is based here in Benicia and covers all of Solano County but I am not speaking for CNPS.

There are others in the community who are much more knowledgeable about EIR's and CEQA than I am. Due to my experience working with the County Agencies, such as the Office of Emergency Services and Emergency Medical Services, I know there are County requirements that are not referenced in this document. There is a discussion about the Benicia Fire Departments response times but there is nothing about notifying the County if there is a spill or an untoward event and the requirements for this notification. Additionally how does Valero interact with the Union Pacific Rail Road and the County if problems occur? What agreements does Valero have with these other entities? Don't these need to be spelled out before a project is approved? When does the specific emergency response plan need to be attached to the approval document? It is my understanding that the documents would need to be provided if an EIR is prepared. Have these County Agencies been contacted and are they in agreement with and support whatever procedures that have been developed? Once again a full EIR would carefully delineate what other County Agencies and Regional Agencies would need to be notified and respond to untoward events and the necessary agreements between Valero and the agencies would be attached.

In the section entitled Biological Resources there is reference to the impact construction would have on nesting birds. But what happens to the endangered plants such as Soft Bird's Beak (Cordylanthus mollis ssp. mollis)? Soft

WRITTEN COMMENT # C 25

Bird's Beak is a federally listed endangered species and listed as a 1B.2 in the CNPS Inventory of Rare and Endangered Plants. In 2004 90% of the existing sites of this plant were located in Solano County. It is an annual herb that is limited to California alone. It lives in Coastal Salt Marsh, and wetland-riparian communities. Seeds found in its fruiting bodies are food for birds. It usually blooms in April and May. This makes it harder to find later in the year when a plant survey is done. Has the Suisun Resource Conservation District been contacted regarding marsh plants and animals and their habitat needs, which will be disrupted by construction and the ongoing train traffic, not counting what would happen to them if there was a fuel spill? The document is lacking, like so many others, by only considering animals and not the things that the animals eat or need for their habitat. There is no discussion of the effects of an oil spill on the endangered plants and animals. Could they even survive a small spill? A Full EIR would list all species impacted and suggest mitigations.

This project will impact the Suisun Delta and the marsh. I don't feel that it is appropriate for Valero to shift all its responsibility for protecting the marsh to Union Pacific which will be pulling and delivering rail cars that are owned by Valero. It is for these reasons that I feel that a complete Environmental Impact Report needs to be required.

Sincerely,

Mary Frances Kelly Poh

Mary Frances Kelly Poh

City of Benicia,
Community Development Dept.

7-1-2013

Valero Crude By Rail Project.

Comments on the Mitigated Negative Declaration.

I believe this document has inaccurate and or incomplete data and needs revision and/or additional mitigation measures.

I am concerned about several aspects of the proposed project.
Attached are comments on an item-by-item presentation.
Several of the items are of a less than significant nature, such as under Biological Resources and Hydrology and Water Quality, but should be revised.

The major concern with the MND is with the traffic impact.
The Refinery was designed and permitted to receive the majority of it's crude from ships and barges. Valero has pipelines from Two (2) locations on the waterfront to its tank farm, and uses rail to ship finished products only.

The applicant did not indicate any alternative proposals that would allow access to this "New" source of crude, such as Barges from the PNW, or locating the train car unloading racks along the waterfront adjacent to their existing pipelines.

The industrial park grew around the refinery and has adapted to the local surface traffic as pipelines within the park move most of the refineries material.
The proposed project will allow Valero to bring in almost half of its daily crude by a new source, rail.
The addition of 2 50-car trains per day thru the Industrial Park will cause major traffic delays, mainly along Bayshore Rd, at the 680 Bayshore off ramp and at Park Rd.
The greatest issue is the fact that the applicant can accommodate 50 crude cars in their facility at one time and the second 50-car train will be moved at the convenience of UPRR.
The MND does not have a "Switching Plan", from UPRR, that outlines the first and subsequent crude trains. The applicant is not restricted to moving these trains during daytime hour, except during the noon hour. There already is significant and regular train traffic at this time so it's an empty promise.

The mitigations for traffic impact, TRAN-1 will not improve or negate the additional rail traffic.
Measure TRAN-2 is inaccurate, as it does not discuss emergency services to businesses that could be completely blocked by rail traffic along Bayshore Rd.

WRITTEN COMMENT # C26

Valero crude by rail project.

Comments in regards to the MND of May 2013

The Initial Study/ Mitigated Negative Declaration in inadequate and or inaccurate in the following areas.

1 In Part II. Environmental Checklist,
1. Aesthetics and 10. Land use and Land Use Planning.
The proposed project will cause increased visual barriers and divide a community by requiring greatly increased Rail Road traffic in the adjacent neighborhood, outside the Valero property.

3. Air Quality.
The discussion on Air Quality is incomplete and or inaccurate. It used emission numbers based on one locomotive per train when the operation plan states that two or more engines will be used. The engines are assumed to be running for two hour per train although the unloading process will take 8 to 10 hours.
There is no restriction on locomotive engine idle time, and it assumes that there will not be any switching of trains into rail sidings in the Park.
The report also discusses diesel emissions from construction activities, noting that they may be objectionable but fails to give the same review to train sources.

4. Biological Resources,
The initial study incorrectly states that certain species are not considered to be in Sulfur Spring Creek due to a Tidal Gate at its mouth. This is incorrect, there is no tidal gate at that location and the structure that was constructed By the US Army in the early '40s has been removed.

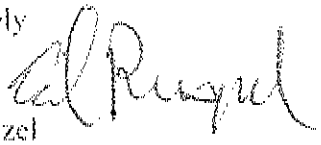
9. Hydrology and Water Quality.
Assumption of the Sulfur Springs flood plane, see #4 above.
There is no description of spill containment at the unloading rack and the facility is less than 60' from Sulfur Springs Creek.

16. Transportation and Traffic.
Lack of "Switching Plan" from UPRR for the second 50 car train.
No discussion of train movement across Park Rd, thru Valero to the Industrial Way rail sidings/yard. This is the only place in the park, (and surrounding area), that could accommodate a 50 car unit train.
Additional Park Rd closures would be required to move these trains into the Valero facilities.
The applicant has simplified/change the plans by eliminating the "Y Connecter" and the western end of line track connecters that facilitate engine movement.
The "Y" could have been utilized to move trains from the Industrial way yard into the refinery without crossing Park Rd.

Additional suggested minimum mitigations

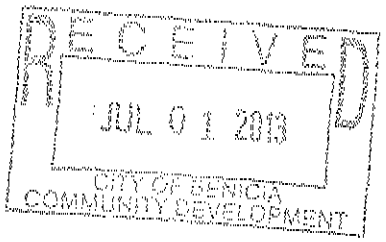
Limit the crude trains to 50 cars per day until an acceptable switching plan is prepared.
Signs warning of stopped traffic on the N680 Bayshore Rd off ramp.
Change the off ramp to 2 lanes with a right hand turn lane.
Add traffic delayed signage at Park and Industrial.

Sincerely



Ed Ruszel
2980 Bayshore Rd

RUSZEL WOODWORKS



July 1, 2013

TO: City of Benicia
Community Development Department

FROM: Jack Ruszel

RE: Mitigated Negative Declaration - Valero Crude By Rail Project

I have several issues concerning the stated project that have been either ignored or dismissively minimized.

#1 - I take objection to the statement in the initial study p. II-62 "Generally, people who drive through industrial areas served by at-grade railroad crossings have a higher tolerance of delay associated with daily at-grade rail activity that is not on a set schedule compared to delays that are not in the vicinity of an at-grade crossing."

I believe acceptance of this non-objective statement sets the tone of this Declaration. Rather than "higher tolerance, you should use the words, "no other choice." It appears that the city has issued a mitigated Negative Declaration based on a less than objective study. There appears to be an attitude of "quick – get this done, before anyone asks too many questions." I may be wrong, but that's what it looks like to me.

#2 - The at-grade crossing on park road is already a serious traffic issue. The City of Benicia and Caltrans should be taking this up as an urgent issue before the separate discussion of doubling the current rail crossings. In the past 2 years I have gotten stuck on the Bayshore Rd. exit numerous times. On a couple occasions traffic was already at a dead stop at the top of the exit. This is a deadly situation. I sat in my car praying that a truck coming off I-680 would not smash me under the trucks in front of me.

The Initial study states on p. II-66 "Project train crossings...could back (traffic) onto Bayshore rd. and affect the operations of the I-680 ramp-terminal intersections, but would not extend on to the I-680 mainline."

This statement is based on a 1 week study of rail operations.

2980 Bayshore Road · Benicia, California 94510 · Phone 707-745-6979 · Fax 707-745-2793 · e-mail: jruszel@ruszelwoodworks.com

WRITTEN COMMENT # C27

From my 30 years of daily observations of the railroad operations along Bayshore Rd, I know that there is an ebb and flow of rail volume and timing that causes me to seriously question the validity of a declaration that uses such a short time window to extrapolate numbers that are used to make decisions of a potentially life-threatening nature.

To accept such a quick snapshot of rail traffic in this study has me wondering if the city could be putting itself in danger of being criminally negligent.

#3 - There are at least 7 Businesses on the east side of Bayshore Rd. south of Park rd. There are over 200 people who work here on "the wrong side of the tracks." Our Businesses are already affected by numerous at-grade crossings. The impact of rail traffic blocking access to these businesses has a real and monetary effect on these businesses. Doubling the amount of traffic blocking access is not even brought up as an issue in this study.

Although Valero is a big business here in Benicia, they are not the only business. I expect the City of Benicia to protect the interests of all. To accept a study that excludes some of their most affected neighbors is incredibly short-sighted of the city.

#4 - Mitigation Measure TRAN-2 addresses the issue of emergency response teams access around the Park Rd. crossing. There is not even an acknowledgement of the 200 plus people who could be trapped behind a very long train crossing or sitting, blocking our driveways. Again, this issue has serious safety repercussions, yet the city is accepting this Mitigated Negative Declaration, without even addressing the issue.

If the citizens of this city are to be able to support our civic leaders in accepting a plan of this scale, we need to know that all the impacts and potential impacts have been studied well. I feel at this time that has not happened.

I look forward to reviewing a serious study which addresses these issues, and helps to keep Benicia the kind of city we want to do business in.

Respectfully,

Jack Ruszel

2980 Bayshore Road · Benicia, California 94510 · Phone 707-745-6979 · Fax 707-745-2793 ·
e-mail: jruszel@ruszelwoodworks.com

Kathy Kerridge
771 West I Street
Benicia, CA 94510

July 1, 2013

Dear Planning Commissioners, Mayor Patterson, City Council and Brad Kilger,

I am writing to urge you to reject the MND on the Valero Crude- by –Rail Project and to require a full Environmental Impact Report

CEQA requires that there be an evaluation of all foreseeable cumulative contributions to negative impacts including air quality, public health, local and regional sensitive ecology (land and water), traffic/transportation, and global warming. The initial study and negative declaration does none of that. As the study explains "all environmental evaluation must take into account the whole action involved including offsite as well as onsite, cumulative as well as project level, indirect as well as direct, and construction as well as operational impacts." The possible impacts of an oil spill in the Suisun Marsh, or any other waterway in California is not mentioned. The cumulative effect of not just increased rail for Valero but for all the other refineries in the area is not mentioned. Yet this is foreseeable. Maybe 25 cars will have little impact, 100 more, but what if we start having 500 rail cars a day coming through a sensitive wetland that flows to the Bay?

The biological mitigation only looked at on site mitigations that would be implemented at the project site. There was no discussion of offsite mitigations, despite the fact that these rail cars will be going through sensitive habitats off site as well. Have other agencies been notified about this such as the Suisun Resource Conservation District and the Department of Fish and Wildlife?

The derailment of a train carrying the herbicide, metam sodium, in Dunsmuir in 1991 shows what an environmental disaster can happen when a rail car derails. This derailment killed everything for 38 miles of the Upper Sacramento River. This same area was the site of a derailment on 6-13-2013. The Dunsmuir spill can provide valuable lessons. In Dunsmuir the train operators had no idea what they were dealing with and raised no warning that there was a toxic spill. The same thing happened in the Kalamazoo, Michigan pipeline burst where not only did the local people have no idea what was in the pipeline, but the company ignored their own warning signals, increased the pumping of oil and never gave a thought to contacting the local authorities. This pipeline was carrying diluted bitumen from the Canadian Tar Sands. This cleanup is in its third year and is still incomplete. It has cost $809 million dollars so far. Are our safety plans adequate? Has an emergency response plan been prepared for a crude oil spill being imported by rail in sensitive areas? Do we even know what will be in these rail cars? These are off site concerns that must be responded to. The initial study acknowledges that there are hazards of shipping by rail, but concludes that those are offset by the hazards of shipping by boat. That is not an adequate analysis. The analysis should be what are the hazards of shipping by rail and how can they be mitigated.

Will this expansion lead to bringing in crude oil from the tar sands of Canada? Valero has stated and the initial study says that the crude brought in will be similar to what they are already processing. Will that always be so? Are they bringing in oil that is from the tar sands that has been blended prior to being shipped? Oil from the tar sands are a toxic stew when transported. They don't react in a spill in the way

WRITTEN COMMENT # C 28

that traditional crude does. If Valero is not importing tar sands diluted bitumen blend now, will it do so in the future?

The initial project claims that there will be no need to modify the refinery to be able to process the new North American crude variety since VIP upgrades have been accomplished. Would Valero have to modify the refinery to accept dilute bitumen crude blends? Would the processing of diluted bitumen increase certain kinds of emissions and what would they be? The community would want additional notification if this happened.

The Alberta Tar Sands is an environmental disaster. Not only is it extremely energy intensive in the way the oil is produced; it is also destroying vast tracts of forest and using immense quantities of fresh water. The oil that is produced has to be heated and mixed with some very toxic chemicals in order to be shipped. When it spills these chemicals evaporate and a toxic cloud is released. The resultant heavy tar does not float to the top of water to be scooped up, but rather sinks to the bottom. It is more corrosive than lighter crude. This corrosive crude is so dangerous that British Columbia will not allow a pipeline to be built through their province to the ocean. The greenhouse gas emissions from the production of these oils are much greater than normal oil production. Will this project lead to this being brought in? What would the greenhouse gas emissions be like if that were considered? These are potential cumulative, off site impacts that must be considered.

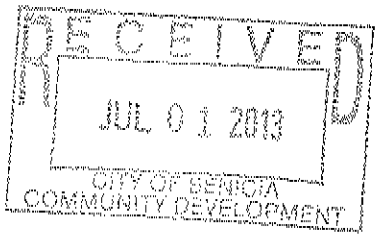
Under section 18 "Mandatory Finding of Significance" of the initial report all finding were less than significant either with or without mitigation. The only reason for this is the failure of the initial report to look beyond the narrow scope of the project, which was treated only as a construction project. There is no analysis of offsite problems with rail transport of hazardous materials, no in depth analysis of what would happen with an offsite derailment or spill in sensitive environments and no analysis of the broader impact of increased GGH emissions that would happen if there was the importation of diluted bitumen from the Canadian Tar Sands.

For all of these reasons a complete Environmental Impact Report should be required.

Sincerely,

Kathy Kerridge

Amy Million - Fwd: Valero Rail Update proposal



From: Brad Kilger
To: Amy Million
Date: 7/1/2013 5:55 PM
Subject: Fwd: Valero Rail Update proposal

>>> Jon Van Landschoot <jonvanland@yahoo.com> 7/1/2013 3:28 PM >>>
Hi Brad,

My big concern is the environmental danger of a spill involving the Tar Sands that might be brought into our town.

As a Sustainability Community , with a significant environmental focus, the Tar Sands option doesn't fit !

I recently heard that Valero does not have plans to bring in the Tar Sands , just more of the same crude it currently refines.

If you will , is that Valero's current position ?

your chum,
jon van

WRITTEN COMMENT # C 29