



**Amy Million - Wall St. Journal: Cities Grapple With Oil-Train Safety**

**From:** Marilyn Bardet <mjbardet@comcast.net>  
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**Date:** 1/15/2014 9:34 AM  
**Subject:** Wall St. Journal: Cities Grapple With Oil-Train Safety  
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**Attachments:** P1-BO778\_OILTRA\_G\_20140114202125.jpg; P1-BO776\_OILTRA\_NS\_20140114190608.jpg; P1-BO778\_OILTRA\_G\_20140114202125.jpg; P1-BO776\_OILTRA\_NS\_20140114190608.jpg

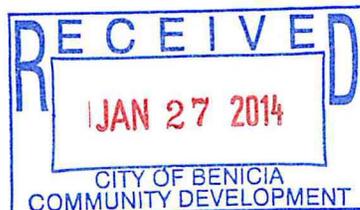
Good morning, Amy and Brad,

Please add the following article from the Wall St. Journal to the public legal record and for upcoming review of the DEIR on Valero's Crude-By-Rail Project, about the challenges cities face in preparing for catastrophic accidents involving large unit trains carrying explosive Bakken crude through their cities and along roadways and residential areas.

[Cities Grapple With Oil-Train Safety - WSJ.com](#)

Thank you,

Marilyn Bardet  
 707-745-9094



U.S. NEWS

## Cities Grapple With Oil-Train Safety

### *Recent Derailments Raise Concerns Over North Dakota Crude Traveling by Rail Through Cities*

By RUSSELL GOLD and LYNN COOK  
 Jan. 14, 2014 11:02 p.m. ET



A train carrying crude oil collided with another train and caught fire on Dec. 30 near Casselton, N.D. *The Forum/Associated Press*

Every day, a train more than a mile long travels alongside a highway in Albany, N.Y., a half-mile from the state capitol building and even closer to houses. Its cargo is crude oil from North Dakota, which federal regulators and railroads fear is more explosive than other oils.

In the past year, Albany has become an unlikely hub for the U.S. oil business, taking in shipments by rail and sending them out by ship down the Hudson River to refineries. Now officials there are trying to get up to speed on how to handle a potential oil-train accident, as are their peers from Chicago to Denver to New Orleans.

Railroad officials don't like to talk about it, but oil trains are rumbling through many large cities because of surging output from North Dakota's Bakken shale. Functioning as pipelines on rails, tanker cars full of oil pass through Detroit, Philadelphia, Toronto, St. Louis, Kansas City and Houston, among others.

Bakken crude, which has been involved in three major explosions after rail accidents in the past seven months, is traveling to every corner of the country: west into Washington state and then south to refineries near Los Angeles; south to Gulf Coast refiners; north into Canada; and east to refineries in New Jersey and Philadelphia.

Railroads and oil shippers wouldn't detail oil-train movements through their networks, citing security concerns. The Wall Street Journal identified routes through investor presentations and industry marketing material, as well as interviews with industry officials and experts.

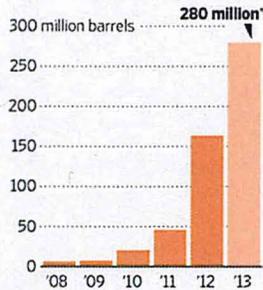
The four major freight railroads involved— Union Pacific Corp., BNSF Railway Co., Canadian Pacific Railway Ltd. and Canadian National Railway Co.—all said they were sharing information about hazardous shipments with local emergency responders. Crude oil is classified as a hazardous substance.

Some critics worry about local preparedness. The growth in crude moving on railroads "came out of the blue," said Peter Iwanowicz, a former head of New York state's environmental agency and now executive director of a watchdog group called Environmental Advocates of New York.

"We're not an oil-patch state," he said. Officials may be aware of the oil trains, he added, "but are they prepared? I don't believe so."

### Shale to Rail

The volume of oil moving on major U.S. railroads has expanded dramatically



Projected based on first nine months of the year  
Source: Association of American Railroads  
The Wall Street Journal

John Layton, a captain in the Albany County Office of Emergency Management, said his agency recently met with Canadian Pacific and Global Partners LP, the storage and distribution firm that is shipping North Dakota crude through New York state.

"The crude trains are very big and carry a lot of potential fuel," Mr. Layton said. "It has the potential to burn a long time."

Global Partners, a public company based in Waltham, Mass., declined to comment.

Two local officials said Chicago, the largest rail hub in the U.S., might not be prepared for an oil-train accident. On Monday, Chicago Aldermen Edward Burke and Matthew O'Shea proposed levying a fee on every oil-filled railcar that passes through the city, to build up a fund that could be tapped in case of a derailment or fire in the city. Local officials can't bar oil trains, which are regulated by the federal government.

Some cities say they are ready for the oil-train influx. One is Tacoma, Wash., where the fire department says it has a plan, personnel and equipment, but worries about suburban and rural fire departments.

The three explosions stemming from recent oil-train derailments include a July accident in Lac-Mégantic, Quebec, that incinerated the downtown and left 47 people dead. An oil train caught fire in Alabama in November, and a Dec. 30 accident in rural North Dakota sent towering flames into the sky. Neither of those two caused injuries.

Concerns about emergency responders helped prompt the federal Pipeline and Hazardous Materials Safety Administration, or PHMSA, to warn that Bakken oil appeared to be more volatile than other crudes, which can burn

but seldom have exploded. Dominique Dostie, a firefighter who fought the Lac-Mégantic blaze, said it took 30 hours of applying special foam to extinguish it.

"When emergency responders look at crude, they are thinking of a heavy crude that just sits there and is hard to ignite," said Cynthia Quarterman, head of the federal agency, part of the U.S. Department of Transportation.

The PHMSA is investigating whether Bakken crude might contain large amounts of gases and related liquids such as butane, propane and ethane.

At the American Petroleum Institute, "We look forward to reviewing PHMSA's findings as part of a continuing effort to improve the safety of rail transportation," said a spokesman, Brian Straessle.

New regulations that could require the industry to improve, phase out or retrofit tank cars used to haul some crude oil are over a year away, according to a schedule the Transportation Department published Tuesday.

The U.S. and Canada both have large refineries on their coasts to handle imported crude oil. Over the past five years, U.S. companies began pumping more oil from the landlocked midcontinent, and the industry has developed new ways of moving it to refineries.

The most common new mode is rail, which is handling about 750,000 barrels a day from North Dakota—more oil than comes out of the giant Alaska North Slope oil field.

New crude-by-rail projects have been proposed across the country. In New York, state officials said they have received applications from Global Partners to build another rail-to-river facility capable of handling one train a day in New Windsor, N.Y., about 65 miles up the Hudson from New York City.

In Vancouver, Wash., refiner Tesoro Corp. and logistics firm Savage Cos. have proposed building a railroad terminal that could handle 360,000 barrels a day, twice the size of the oil terminal in Albany.

Barry Cain, lead developer of Columbia Waterfront LLC, a \$1.3 billion real-estate revitalization project in Vancouver with space 100 feet from the tracks, said he supports robust U.S. oil production but fears the trains would endanger residents. "What if one derails?" he asked. "There is no margin of error with these things."

The general manager of the proposed new rail terminal, Jared Larrabee, said it and waterfront development can co-exist. "We believe the region can and should have both," he said.

Vancouver Fire Dept. Battalion Chief Steve Eldred said hazardous-materials response plans are in place for existing train traffic, but would need to be studied and probably require additional resources to handle more oil trains.

Others say while the liquid cargo is labeled as crude, it is exploding like jet fuel. The North Dakota crude "has a tremendous amount volatility and puts out a lot of heat," said Dennis Jenkerson, the fire chief for St. Louis.

"We train for this every year, and you prepare for the worst," he said. "My biggest concern is that this crude is coming through the area and we really don't know what it is."

—Chester Dawson, Ben Kesling and Betsy Morris contributed to this article.

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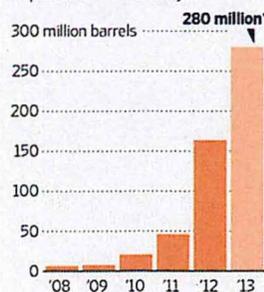
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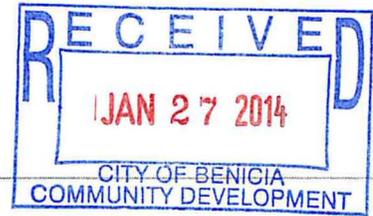
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**Amy Million - BAAQMD**

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**From:** "Steve & Marty Young" <escazuyoungs@gmail.com>  
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**Date:** 1/14/2014 10:54 AM  
**Subject:** BAAQMD



I spoke with Aaron Richardson at BAAQMD.

The district is in the process of "rule making" to address cumulative impact of refinery projects, including the issue of refineries moving to heavier crude oils.

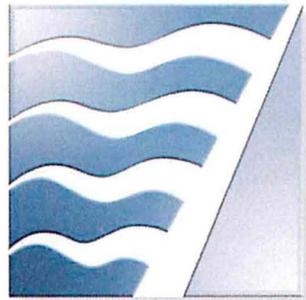
The rule is expected to be available for public hearings in the summer

Here is a link to the draft rule and some background if you would like to share with the Commission.

Has the applicant yet disclosed the types of crude oil that they are proposing to bring into the refinery?

[http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Rules%20and%20Regs/Workshops/2013/1215\\_dr\\_rpt032113.ashx?la=en](http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/Rules%20and%20Regs/Workshops/2013/1215_dr_rpt032113.ashx?la=en)

steve young



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

## **WORKSHOP REPORT**

### **PRELIMINARY DRAFT AIR DISTRICT REGULATION 12, RULE 15: PETROLEUM REFINING EMISSIONS TRACKING**

Prepared by the staff of the  
Bay Area Air Quality Management District

March, 2013

## **1. INTRODUCTION**

This report was prepared to provide information relevant to the development of a new rule by the Bay Area Air Quality Management District ("Air District") which would apply to petroleum refineries located in the San Francisco Bay Area. The proposed title of this new rule is *Regulation 12, Rule 15: Petroleum Refining Emissions Tracking*. The development of the rule was included as Action Item 4 in the Air District's *Work Plan for Action Items Related to Accidental Releases from Industrial Facilities*, which was approved by the Air District's Board of Directors on October 17, 2012. The Air District is seeking input in the development of the new rule from the public and other interested stakeholders, and will be holding public workshops and additional meetings for this purpose.

## **2. RULE DEVELOPMENT PROCESS**

Air District staff develops proposed rules to control emissions from refineries and other types of "stationary sources" of air pollution in consideration of input received from interested stakeholders. Proposed rules are considered for adoption by the Air District's Board of Directors after a public hearing is held. Before these proposed rules may be adopted (or amended), the Board of Directors must consider certain factors (e.g., socioeconomic and environmental impacts), and make a number of findings (e.g., authority, necessity, clarity, and consistency), based upon relevant information presented at the public hearing. It is expected that the new Petroleum Refining Emissions Tracking rule will be considered for adoption in the first half of 2014.

## **3. BACKGROUND INFORMATION**

Stakeholders interested in participating in the development of the new Petroleum Refining Emissions Tracking rule may benefit from the background information contained in Appendix A of this report.

## **4. NEED FOR RULE AND REGULATORY CONCEPT**

The need for the new rule and the proposed regulatory approach is explained in the Regulatory Concept Paper provided in Appendix B of this report. The new rule is intended to address potential increases in air emissions from Bay Area petroleum refineries that might occur over time, including emission increases associated with the use of lower quality crude slates. The proposed regulatory approach involves the following basic elements.

- A. Establish existing baseline air emissions from each refinery (i.e., the quantities of various air pollutants that are emitted),
- B. Track the quantity of air emissions from each refinery in the future on an on-going basis,
- C. Should air emissions from a refinery increase above baseline levels (in an amount that exceeds specified trigger-levels), require that the cause(s) of the emission

increase be identified, and a plan prepared and implemented to reduce emissions, and,

D. Establish fence-line and community air monitoring systems.

## **5. PRELIMINARY DRAFT RULE**

In order to facilitate discussion and comments, Air District staff has prepared a preliminary draft Petroleum Refining Emissions Tracking rule, which is included in Appendix C of this report. A flowchart that covers the emissions tracking and emission reduction plan elements of the rule is included in Appendix D. Explanations of the various provisions of this preliminary draft rule are provided as follows.

### **A. Administrative Procedures**

As is delineated in the following sections of this report, the new Petroleum Refining Emissions Tracking rule would require refinery owner/operators to submit to the Air District various reports and plans. Air District staff believes that members of the public and other interested stakeholders should have the opportunity to review and comment on these documents. Comments received would be considered by Air District staff prior to taking final action to approve, revise, or disapprove the reports and plans. Commenters would be notified of the Air District's final actions, and approved or disapproved reports and plans would be posted on the Air District's website. The administrative procedures by which the Air District would review and take final action to approve or disapprove the various types of required reports and plans are specified in Sections 12-15-404, 406, and 409 of the preliminary draft rule.

It should be noted that California law specifies that "trade secrets" are not public records. While air pollutant emissions data and air monitoring data may not be considered trade secrets, many other types of information may be (e.g., production data used to calculate emissions data). The definition of "trade secrets" provided in Section 6254.7 of the California Government Code follows.

"Trade secrets," as used in this section, may include, but are not limited to, any formula, plan, pattern, process, tool, mechanism, compound, procedure, production data, or compilation of information which is not patented, which is known only to certain individuals within a commercial concern who are using it to fabricate, produce, or compound an article of trade or a service having commercial value and which gives its user an opportunity to obtain a business advantage over competitors who do not know or use it.

Section 12-15-412 of the preliminary draft rule specifies that a refinery owner/operator may designate as confidential any information required to be submitted under the rule that is claimed to be exempt from public disclosure under the California Government Code. The owner/operator is required to provide a justification for this designation, and must submit a separate public copy of the document with the information that is designated "confidential" redacted.

## **B. Pollutant Coverage**

District staff believes that the new Petroleum Refining Emissions Tracking rule should cover the three primary categories of regulated air pollutants: (1) Criteria pollutants, (2) Toxic Air Contaminants (TACs), and Greenhouse Gases (GHGs). These terms are defined in Sections 12-15-211, 217, and 227 of the preliminary draft rule.

The definition of TAC provided in Section 12-15-227 of the preliminary draft rule does not refer to the State TAC list, but rather the list that is regulated under the Air District's *Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants*. The Rule 2-5 list of TACs includes those State TACs that have a basis for the evaluation of health effects under guideline procedures adopted by Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA), and several additional substances that are not State TACs but that are regulated under the State's Air Toxics Hot Spots Program. The Rule 2-5 list is used because it is believed to cover the TACs that are of most relevance in terms of health risks, and that as such warrant consideration in the new rule. If health effects values for additional TACs are adopted by OEHHA over time, these will be added to Air District Rule 2-5 by amendment, and therefore also become covered by the Petroleum Refining Emissions Tracking rule.

Air District staff is aware that, unlike criteria pollutants and TACs, GHGs are not directly associated with localized or regional health risks, which is the primary issue that the new rule is intended to address. GHGs were included in the preliminary draft rule because of climate change issues (which have a link to increasing air concentrations of ozone, a criteria pollutant that forms on hot summer days), and because measures to reduce GHG emissions typically result in co-benefits in terms of reducing criteria pollutant and TAC emissions. Air District staff is interested in receiving input on whether the new rule should cover emissions of GHGs as proposed, or focus instead on the other two categories of regulated air pollutants.

Odorous and visible emissions are not specifically proposed to be covered by the new rule, although most of these pollutants are also included in one of the categories of regulated air pollutants that would be covered (e.g., hydrogen sulfide, which is the primary odorous compound emitted from refineries, is a covered TAC; visible emissions are typically fine particulate matter (PM<sub>2.5</sub>), a covered criteria pollutant).

## **C. Source Coverage**

Air District staff believes that the new Petroleum Refining Emissions Tracking rule should apply to all air emissions from "stationary sources" at petroleum refineries. Stationary sources, as opposed to mobile sources such as trucks and other vehicles, are the sources over which the Air District has regulatory jurisdiction. Several definitions in the preliminary draft rule are intended to clarify source coverage. This includes the definition of "petroleum refinery" in Section 12-15-219, the definition of "source" in Section 12-15-226 (which is the same definition used in the Air District's permit rule), and the definition of "emissions inventory" in Section 12-15-214.

Air District staff also believes that the new rule should apply to petroleum refinery operations whether or not these operations are owned or operated by different entities. For example, some Bay Area refineries include co-located hydrogen plants that are owned or operated by separate companies, but that provide hydrogen for refinery operations. Similar arrangements also exist for refinery terminal operations, and auxiliary facilities (e.g., cogeneration plants). The definition of “refinery owner/operator” provided in Section 12-15-224 of the preliminary draft rule indicates that the refinery owner/operator is responsible for the submittal of required reports and plans that cover the entire refinery, including those that may be separately owned or operated. This is the same approach that is used in the implementation of Air District *Regulation 12, Rule 12: Flares at Petroleum Refineries* (e.g., for the submittal of Flare Minimization Plans).

#### **D. Time Period for Determining Emission Changes**

The approach proposed for the new Petroleum Refining Emissions Tracking rule is to track actual air emissions from each refinery over time to determine whether emission reduction plans should be prepared and implemented. This will necessitate the determination of the quantity of air emissions occurring from the refinery (i.e., an “emissions inventory”) for both a “baseline” (i.e., existing) period, and “on-going” (i.e., future) periods.

Air District staff believes that the most appropriate time period over which to establish baseline and on-going emissions inventories is a calendar year. This approach would be consistent with existing emissions inventory requirements that apply to the refineries (e.g., Air District annual update questionnaires, California Air Resources Board (CARB) and U.S. Environmental Protection Agency (EPA) GHG emissions reporting, and U.S. EPA Toxics Release Inventory). The use of annual periods for determining emissions changes is also consistent with procedures for determining major modifications under New Source Review permitting programs.

#### **E. Emissions Inventory Methodology**

Emissions inventories are used in a variety of air quality programs, and methodologies for establishing these inventories are provided in various publications. Depending on the specific type of source, and the specific type of air pollutant emitted, “state-of-the-art” emissions inventory techniques may involve continuous emission monitors, source-specific emission tests, general emission factors (i.e., representative values that relate the quantity of a pollutant emitted with an activity associated with the release of that pollutant), material balances, or empirical formulae. The term “emissions inventory” is defined in Section 12-15-214 of the preliminary draft rule.

Due to the diversity of emissions inventory methodologies that exist, and the need to update these methodologies on an on-going basis due to improvements in scientific understanding and available data, Air District staff does not believe that the new rule should include detailed emissions inventory methodologies. Rather, it is proposed that

Air District staff publish, and periodically update, emissions inventory guidelines for petroleum refineries that specify the methodology to be used for establishing baseline and on-going emissions inventories required under the rule. This provision is provided in Section 12-15-410 of the preliminary draft rule. Section 12-15-601 indicates that emissions inventories submitted under the rule must be prepared following the Air District-published guidelines.

The initial refinery emissions inventory guideline document will be developed concurrently with the development of the new rule. It is expected that this document will refer heavily to other inventory methodology publications, including the refinery emissions protocol issued for the purpose of improving emissions inventories as collected through the U.S. EPA's 2011 Information Collection Request (ICR) for the petroleum refining industry (*Emission Estimation Protocol for Petroleum Refineries*, Version 2.1.1, Final ICR Version, RTI International, May 2011).

The Air District has used staff-published guideline documents in combination with other rules that have requirements based on detailed technical information that needs to be updated on an on-going basis. This includes the Air District's BACT/TBACT Workbook and Permit Handbook (both used in Air District Rules 2-2 and 2-5), and Health Risk Screening Guidelines (used in Air District Rules 2-1 and 2-5).

#### **F. Establishing Baseline Emissions Inventories**

The establishment of existing annual baseline emissions inventories will provide the basis in the new rule for determining emissions changes that occur from each refinery over time and whether emission reduction plans will be required. Each refinery would be required to prepare and submit a refinery baseline emissions inventory report to the Air District as specified in Section 12-15-401 of the preliminary draft rule.

Although refinery operations are more continuous and uniform than some other types of industries, year-to-year variations in emissions occur due to a variety of factors. Some of these factors include business cycles that affect the demand for products produced, and cyclical process unit maintenance turnarounds (which generally occur on different schedules at different refineries). The intent of the Petroleum Refining Emissions Tracking rule is not to trigger mitigation requirements based on changes in emissions that occur due to these cyclical factors.

A variety of other factors may affect variations in year-to-year emissions from a refinery including the addition of additional emissions controls, equipment changes (e.g., replacements, modernizations, and expansions), accidents, compliance issues, changes in feed stocks used, and the mix of products produced due to business decisions. Air District staff believes that emission changes due to all of these other factors should be considered in establishing whether or not mitigation is required under the new rule.

Many potential approaches exist for establishing baseline emission inventories in the new rule. As is specified in Sections 12-15-206 and 221 of the preliminary draft rule, Air District staff is proposing the following approach:

- (1) Allow each refinery to choose a calendar year baseline period within the 10-year timeframe Jan. 1, 2004 through Dec. 31, 2013. This look-back period was chosen because: (a) it includes four years that precedes the 2008 recession, which impacted business activity for refineries and many other industries, (b) detailed flare monitoring requirements were in effect for all of these years under Air District *Regulation 12, Rule 11: Flare Monitoring at Petroleum Refineries*, and (c) it is consistent with procedures for determining baseline emissions for the purpose of determining major modifications under New Source Review permitting programs.
- (2) Adjust baseline emissions inventories as follows: (a) exclude emissions that exceeded regulatory or permitted limits, (b) exclude emissions resulting from accidents required to be reported in a Risk Management Plan (RMP) under 40 CFR 68.168, and (c) require that baseline emissions for each source be adjusted downward to exclude any emissions that would have exceeded an emission limitation with which the source must comply on or before July 1, 2014, had such source been required to comply with such limitation during the baseline period. The first two exclusions are intended to disallow a refinery from receiving "credit" for excessive emissions occurring during the baseline period. The third provision is a way to adjust for current regulatory requirements that may not have been in effect during the entire 10-year look-back period. The proposed baseline emissions inventory adjustments are consistent with those used in establishing baseline emissions for the purpose of determining major modifications under New Source Review permitting programs.

#### **G. Establishing On-going Emissions Inventories**

After refinery baseline emissions inventories are established under the new Petroleum Refining Emissions Tracking rule, each refinery would be required to prepare and submit to the Air District refinery on-going emissions inventory reports for each subsequent calendar year as specified in Section 12-15-402 of the preliminary draft rule. In addition to specifying the quantity of emissions that occurred from the refinery during the year for which the report is prepared, the on-going emissions inventory reports would also identify the changes in emissions that occurred relative to the baseline emissions inventory, and indicate whether any observed increase in emissions exceeded specified "trigger-levels" (see Section I of this report).

#### **H. Revising Baseline Emissions Inventories**

After being initially established, it is important that baseline emissions inventories be revised to reflect any updated emissions inventory methodologies that are used in on-going emissions inventories, to the extent that such improved methodologies are also applicable to the sources included in the baseline emissions inventory. This will ensure that a uniform basis exists for determining changes in emissions over time. This

provision is specified in Section 12-15-403 of the preliminary draft rule. Any such revisions to a baseline emissions inventory report would need to be made no later than the submittal deadline of the on-going emissions inventory report that contains the updated methodology. This provision would also cover potential expansions of the emissions inventory over time to address additional compounds that may be added to the Air District Rule 2-5 TAC list.

## I. Trigger-Levels

The approach proposed for the new Petroleum Refining Emissions Tracking rule is to require emission reduction plans for observed emission increases at a refinery that are large enough to warrant such action. In the preliminary draft rule, these emission increases are designated as “trigger-levels” (defined in Section 12-15-228). Any observed emission increases that exceed trigger-levels would have to be identified in an on-going emissions inventory report as specified in Section 12-15-402.6 of the preliminary draft rule.

For criteria pollutants, the proposed trigger-levels address both regional and local air quality impacts. Trigger-levels for regional impacts are based on whether emission increases exceed specified quantities. These trigger-levels are set for those air pollutants, and their atmospheric precursors, for which the region has a “non-attainment” designation for an Ambient Air Quality Standard (AAQS). Precursor organic compounds (POC) and oxides of nitrogen (NO<sub>x</sub>), which are precursors to the formation of the non-attainment pollutants ozone, PM<sub>2.5</sub>, and PM<sub>10</sub>, would have trigger-levels of 10 tons per year, as would sulfur dioxide (SO<sub>2</sub>), which is a precursor to the formation of PM<sub>2.5</sub> and PM<sub>10</sub>. Directly emitted PM<sub>2.5</sub> would also have a trigger-level of 10 tons per year, and directly emitted PM<sub>10</sub> (which has less serious health effects than PM<sub>2.5</sub>) would have a trigger-level of 15 tons per year.

The approach for determining whether emission increases of specified criteria pollutants and TACs are large enough to warrant the preparation of emission reduction plans based on localized impacts is more complex, and requires the use of an air dispersion model. The air dispersion model is used to translate the quantity of pollutants emissions into estimates of air concentrations at various locations outside the boundaries of the refinery. Such a modeling demonstration would need to be completed in accordance with Section 12-15-407 of the preliminary draft rule.

For CO, a criteria pollutant for which the region has an “attainment” designation, a two tier approach would be used to determine trigger-levels: (1) emissions increases up to 100 tons per year would be assumed to be less than trigger-levels (note that unhealthy levels of CO occur at much higher air concentrations relative to other criteria pollutants), (2) emission increases greater than 100 tons per year may be demonstrated to be less than trigger-levels based on an AAQS modeling demonstration. This modeling demonstration must show that overall CO air concentrations in the “ambient air” (see definition in Section 12-15-205), resulting from emissions from existing sources in addition to the increased emissions from the refinery, are within applicable AAQS (i.e., 9.0 ppm for an 8-hour average, and 20.0 ppm for a 1-hour average).

For PM<sub>2.5</sub> and TACs, the determination of whether an emission increase exceeds trigger-levels would have both an incremental and cumulative impacts analysis component. In both cases, air dispersion modeling results would be established at “sensitive receptor” (see definition in Section 12-15-225) locations in the surrounding community. For PM<sub>2.5</sub>, the incremental impacts analysis would evaluate whether the increase in PM<sub>2.5</sub> emissions at the refinery would increase PM<sub>2.5</sub> concentrations at a sensitive receptor by more than 0.3 micrograms per cubic meter (annual average). The cumulative impacts analysis would evaluate whether all PM<sub>2.5</sub> emissions from the refinery, and all other sources of PM<sub>2.5</sub> emissions located within 1000 feet of the refinery’s property line, would result in PM<sub>2.5</sub> concentrations at a sensitive receptor of more than 0.8 micrograms per cubic meter (annual average).

For TACs, the determination of whether an increase in emissions exceeds trigger-levels would be similar in approach to that of PM<sub>2.5</sub>, but would have the additional step of calculating health risks from air dispersion modeling results. The health risk calculation methodology would be based on guidelines adopted by Cal/EPA’s OEHHA for the Air Toxics Hot Spots Program. For TACs, the incremental impacts analysis would evaluate whether the increase in TAC emissions at the refinery would increase cancer risk (see definition in Section 12-15-207) by more than 10 in a million, or increase non-cancer risk (chronic and acute, see definitions in Sections 12-15-202 and 208) by more than a Hazard Index of 1.0, at a sensitive receptor. The cumulative impacts analysis would evaluate whether all TAC emissions from the refinery, and all other sources of TAC emissions located within 1000 feet of the refinery’s property line, would result in a cancer risk that exceeds 100 in a million, or a non-cancer risk (chronic and acute) that exceeds a Hazard Index of 10.0, at a sensitive receptor.

Stakeholders that are interested in additional information regarding the basis for the proposed “trigger-levels” may wish to refer to the Air District’s *Revised Draft Options and Justification Report: California Environmental Quality Act Thresholds of Significance, October 2009*.<sup>1</sup>

## **J. Emission Reduction Plans**

The proposed new Petroleum Refining Emissions Tracking rule would require the refinery owner/operator to prepare and submit to the Air District an emission reduction plan if an emission increase from the refinery exceeds trigger-levels. The provision to submit emission reduction plans is provided in Section 12-15-405 of the preliminary draft rule.

The first required element of an emission reduction plan would be a causal analysis. The causal analysis would need to identify the source (or sources) of emissions at the refinery that caused or contributed to the observed emission increase that exceeded

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<sup>1</sup> Note that, pending the outcome of on-going litigation, the Air District is not recommending that the trigger-levels provided in this document be used as a generally applicable measure of a project’s significant air quality impacts under the California Air Quality Act (CEQA).

trigger-levels, and the factor (or factors) that resulted in the increase. Among the potential factors that could cause an emission increase, each causal analysis would need to address the degree to which changes in crude slates may have caused or contributed to the increase. Records of crude slate composition would need to be provided to support this aspect of the causal analysis.

The next required element of an emission reduction plan is the identification of potential air emission reduction measures. The term "air emission reduction measures" is defined broadly (see definition in Section 12-15-204 of the preliminary draft rule), and includes equipment or techniques intended to reduce or eliminate air emissions from a source, and that may include equipment upgrades or modernization, improved emissions capture or control, process changes, operational changes, or feedstock modifications. The refinery owner/operator would be given the opportunity to identify specific on-site air emission reduction measures that the facility is committed to implement and that would reduce the observed emissions increase to less than trigger-levels within a period of two years.

If the refinery owner/operator fails to identify air emission reduction measures sufficient to reduce emission increases to less than trigger-levels within a period of two years, the refinery owner/operator would be required to conduct a refinery emission reduction audit (see definition in Section 12-15-222 of the preliminary draft rule). This audit would be a comprehensive evaluation of the opportunities for implementing air emission reductions measures at the refinery for the air pollutant(s) with an emission increase that exceeds trigger-levels. All such measures that the audit determines are feasible would need to be included in the emission reduction plan. The term "feasible" would be defined as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors." Note that this definition is identical to that provided in Section 12-12-202 of the Air District's "Flare Control Rule" which establishes requirements for measures designed to prevent flaring at refineries. The rationale for rejecting potential air emissions reduction measures as infeasible would need to be provided in the audit report. The refinery owner/operator would be required to include in their emission reduction plan a schedule for the expeditious implementation of all feasible air emission reduction measures at the refinery.

After the Air District approves an emission reduction plan, the refinery owner/operator would be required to implement any identified air emission reduction measures in accordance with the schedule provided in that plan (see Section 12-15-301 of the preliminary draft rule). To fail to do so would constitute a violation of this standard of the rule. After an emission reduction plan is in place, the refinery owner/operator would also be required to continue to track emissions from the refinery and submit on-going emissions inventory reports on an annual basis. If a subsequent refinery on-going emissions inventory report indicates that an emission increase that exceeds trigger-levels continues to exist, the existing emission reduction plan would need to be updated. The emission reduction plan update would need to address the status of air emission reduction measures included in the existing plan. In addition, if the existing emission reduction plan failed to reduce emission increases to less than trigger-levels

within two years as the plan specified (under Section 12-15-405.2), the updated plan would need to include a refinery emission reduction audit. If the existing emission reduction plan had included a refinery emission reduction audit (under Section 12-15-405.3), the updated emission reduction plan would need to include an updated refinery emission reduction audit that considers the feasibility of refinery air emission reduction measures based on any changes that may have occurred in economic, environmental, legal, social and technological factors.

The preliminary draft Petroleum Refining Emissions Tracking rule would limit consideration of air emission reduction measures in emission reduction plans to on-site sources at the refinery. Air District staff is interested in receiving input on whether the new rule should also allow for consideration of off-site air emission reduction measures. This would seem to be most appropriate for the reduction of observed increases in GHG emissions, since these pollutants do not have direct localized impacts and are relevant on a much larger spatial-scale than criteria pollutants and TACs. One option might be to allow an “off-ramp” in the rule for emission reduction plan updates, after an initial refinery emission reduction audit had been completed for GHGs, provided that additional off-site air emission reduction measures were committed to be implemented on an expeditious schedule.

#### **K. Air Monitoring**

The proposed new Petroleum Refining Emissions Tracking rule would require the refinery owner/operator to prepare and submit to the Air District an air monitoring plan for establishing and operating a fence-line monitoring system and a community air monitoring system (see Section 12-15-408). The terms “fence-line monitoring system” and “community air monitoring system” are defined in the preliminary draft rule in Sections 12-15-216 and 210, respectively. The air monitoring plans would need to be prepared in accordance with air monitoring guidelines that are published by the Air District (see Sections 12-15-411 and 602).

The initial air monitoring guideline document will be developed concurrently with the development of the proposed rule. Much of the information gathering for the guideline document is being completed under Action Item 3 of the Air District’s *Work Plan for Action Items Related to Accidental Releases from Industrial Facilities*. Under this Action Item, Air District staff has retained a contractor to create a report that identifies equipment and methodological options for monitoring systems. A panel of monitoring experts gathered from academia, industry, the community, and other government agencies will then discuss and weigh the various options and provide input to guide the Air District in developing the air monitoring guidelines.

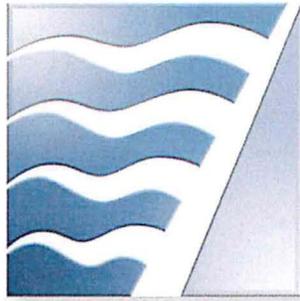
Within one year of Air District approval of a refinery’s air monitoring plan, the refinery owner/operator would be required to ensure that fence-line monitoring systems and community air monitoring systems are installed, operated, and maintained, in accordance with the approved plan (see Sections 12-15-501 and 502 of the preliminary draft rule).

The Air District would update the initial air monitoring guideline document within a five year period of the publication of the initial guideline document. The guidelines would be updated in consideration of advances in monitoring technology, updated information regarding the health effects of air pollutants, and review of data collected by existing monitoring systems required under the rule. The refinery owner/operator would be required to implement any needed modifications to existing monitoring systems within one year of publication of the updated guidelines.

## **6. COST RECOVERY**

The Air District has the authority to assess fees to regulated entities for the purpose of recovering the reasonable costs of implementing and enforcing applicable regulatory requirements. On March 7, 2012, the Air District's Board of Directors adopted a Cost Recovery Policy that specifies that newly adopted regulatory measures should include fees that are designed to recover increased regulatory program activity costs associated with the measure (unless the Board of Directors determines that a portion of those costs should be covered by tax revenue).

In accordance with the adopted Cost Recovery Policy, Air District staff intends on developing a new fee schedule concurrent with the development of the new Petroleum Refining Emissions Tracking rule. Staff has begun to develop a preliminary draft fee schedule for this purpose, and expects to make this available to stakeholders for review and comment prior to July 1, 2013.



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### **BAAQMD REGULATION 12, RULE 15: PETROLEUM REFINING EMISSIONS TRACKING**

**APPENDIX A**

**BACKGROUND INFORMATION**

## **1. Bay Area Petroleum Refineries**

There are currently five petroleum refineries that are located in the Bay Area within the jurisdiction of the Air District: (1) Chevron Products Company (Richmond), (2) Phillips 66 Company – San Francisco Refinery (Rodeo), (3) Shell Martinez Refinery (Martinez), (4) Tesoro Refining and Marketing Company (Martinez), and (5) Valero Refining Company – California (Benicia).

## **2. Petroleum Refining Processes**

Petroleum refineries are complex facilities that convert crude oil into a wide variety of refined products, including gasoline, aviation fuel, diesel fuel and other fuel oils, lubricating oils, and feed stocks for the petrochemical industry. Refineries consist of the following general processes and associated operations.

### **a) Separation Processes**

Crude oil consists of a complex mixture of hydrocarbon compounds with small amounts of impurities including sulfur, nitrogen, and metals. The first phase in petroleum refining is the separation of crude oil into its major constituents using distillation and “light ends” recovery (i.e., gas processing) that split crude oil constituents into component parts known as “boiling-point fractions”.

### **b) Conversion Processes**

To meet the demands for high-octane gasoline, jet fuel, and diesel fuel, components such as residual oils, fuel oils, and light ends are converted to gasoline and other light fractions. Cracking, coking, and visbreaking processes are used to break large petroleum molecules into smaller ones. Polymerization and alkylation processes are used to combine small petroleum molecules into larger ones. Isomerization and reforming processes are applied to rearrange the structure of petroleum molecules to produce higher-value molecules of a similar size.

### **c) Treating Processes**

Petroleum treating processes stabilize and upgrade petroleum products by separating them from less desirable products, and by removing objectionable elements. Treating processes, employed primarily for the separation of petroleum products, include such processes as deasphalting. Undesirable elements such as sulfur, nitrogen, and oxygen are removed by hydrodesulfurization, hydrotreating, chemical sweetening, and acid gas removal.

### **d) Feedstock and Product Handling**

Refinery feedstock and product handling operations consist of unloading, storage, blending, and loading activities.

#### e) Auxiliary Facilities

A wide assortment of processes and equipment not directly involved in the refining of crude oil is used in functions vital to the operation of the refinery. Examples are boilers, waste water treatment facilities, hydrogen plants, cooling towers, and sulfur recovery units. Products from auxiliary facilities (e.g., clean water, steam, and process heat) are required by most process units throughout the refinery.

### 3. Air Pollutants Emitted from Petroleum Refineries

Air pollutants are categorized based on their properties, and the programs in which they are regulated, as follows: (1) Criteria pollutants, (2) toxic air contaminants (which in federal programs are referred to as hazardous air pollutants), and (3) greenhouse gases. Additional categories of air contaminants include odorous compounds and visible emissions, although these are most often also components of one or more of the three primary categories of regulated air pollutants previously listed.

Criteria pollutants are contaminants for which Ambient Air Quality Standards (AAQS) have been set, or that are atmospheric precursors to such air pollutants (i.e., contaminants that are emitted into the air and that then participate in chemical reactions to form a criteria pollutant). The AAQS are air concentration-based standards that are set to protect public health and welfare. U.S. EPA sets AAQS on a national basis (National Ambient Air Quality Standards, or NAAQS), and CARB sets AAQS for use in the State of California (California Ambient Air Quality Standards, or CAAQS). Although there is some variation in the specific pollutants for which NAAQS and CAAQS have been set, the term "criteria pollutants" generally refers to the following: (1) Carbon monoxide (CO), (2) oxides of nitrogen (NO<sub>x</sub>), (3) particulate matter (PM) in two size ranges -- diameter of 10 micrometers or less (PM<sub>10</sub>), and diameter of 2.5 micrometers or less (PM<sub>2.5</sub>), (4) precursor organic compounds (POC), and (5) sulfur dioxide (SO<sub>2</sub>). Each of these criteria pollutants are emitted by petroleum refineries.

Toxic air contaminants (TACs) are contaminants for which AAQS have generally not been established, but that nonetheless may result in human health risks. TACs are generally emitted in much lower quantities than criteria pollutants, and may vary markedly in their relative toxicity (e.g., some TACs are millions of times more toxic than other TACs). The State list of TACs currently includes approximately 190 separate chemical compounds, and groups of compounds. TACs emitted from petroleum refineries include volatile organic TACs (e.g., acetaldehyde, benzene, 1,3-butadiene, formaldehyde, xylenes), semi-volatile and non-volatile organic TACs (e.g., benzo(a)pyrene, chlorinated dioxin/furans, cresols, and naphthalene), metallic TACs (e.g., compounds containing arsenic, cadmium, chromium, mercury, and nickel), and other inorganic TACs (e.g., chlorine, carbonyl sulfide, and hydrogen chloride).

Greenhouse gases (GHGs) are contaminants that absorb and emit thermal infrared radiation in the atmosphere and thereby contribute to climate change. Carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and three groups of fluorinated compounds

(i.e., hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>)) are the major anthropogenic GHGs, and are regulated under the Kyoto Protocol international treaty, the federal Clean Air Act, and the California Global Warming Solutions Act. GHGs emitted from petroleum refineries include CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O.

#### 4. Regulation of Air Pollutants from Petroleum Refineries

Air pollutant emissions from Bay Area petroleum refineries have been regulated for over 50 years, with most of the rules and regulations being adopted following enactment of the 1970 Clean Air Act amendments. The Air District has the primary responsibility to regulate “stationary sources” of air pollution in the Bay Area, and the Air District has adopted many rules and regulations that apply to petroleum refineries.

At the State level, the California Air Resources Board (CARB) has the primary responsibility to regulate vehicles and most other “mobile sources” of air pollution (e.g., ships, trucks, and mobile equipment) in California, and has adopted many rules and regulations that apply to those sources. CARB has also adopted State rules known as Airborne Toxic Control Measures (ATCMs) to reduce emissions of TACs from a variety of sources. ATCMs that apply to stationary sources are implemented and enforced by local air districts.

The U.S. Environmental Protection Agency (EPA) has adopted two types of stationary source rules that apply to petroleum refineries: (1) New Source Performance Standards (NSPS) to reduce criteria pollutants, and (2) National Emission Standards for Hazardous Air Pollutants (NESHAP) to reduce TACs. These EPA rules are implemented and enforced by the Air District in the Bay Area. In many cases, existing Air District or CARB rules are more stringent than these NSPS and NESHAP rules. U.S. EPA has also begun to adopt rules to reduce GHG emissions under the authority of the Clean Air Act, but relatively few of these rules currently exist (e.g., U.S. EPA has indicated that it is currently developing an NSPS to reduce GHG emissions from new and existing refineries).

More recently, CARB has adopted rules to reduce emissions of GHGs from mobile and stationary sources in California. Refineries are subject to CARB’s Cap-and-Trade Rule (*California Cap on Greenhouse Gas Emissions and Market-based Compliance Mechanisms*). The Cap-and-Trade Rule will reduce GHG emissions collectively from all subject sources using a market-based approach, although there is no requirement that any specific source reduce its emissions.

Petroleum refineries are also subject to regulatory programs that are intended to prevent accidental releases of substances. The primary programs of this type are based on requirements in the 1990 Clean Air Act amendments as follows: (1) the Process Safety Management (PSM) program, which focuses on protecting workers, and which is administered by the U.S. Occupational Safety & Health Administration (OSHA), and (2) the Accidental Release Prevention program (commonly referred to as the Risk Management Program, or RMP), which focuses on protecting the public and the

environment, and which is administered by U.S. EPA. Bay Area refineries are subject to Cal/OSHA's PSM program, which is very similar to the federal OSHA program, but with certain more stringent State provisions. Bay Area refineries are subject to the California Accidental Release Prevention (CalARP) Program, which is very similar to U.S. EPA's RMP program, but with certain more stringent State provisions. In addition, Contra Costa County and the City of Richmond have both adopted an Industrial Safety Ordinance (ISO). These ISO's are very similar to CalARP requirements, but with certain more stringent local provisions. Accidental release prevention programs in California are implemented and enforced by local Administering Agencies, which in the case of Bay Area refineries are Solano County (for the Valero Refining Company) and Contra Costa County (for the four other Bay Area refineries).

A partial list of the air pollution rules and regulations that the Air District implements and enforces at Bay Area refineries follows.

- Air District Regulation 1: General Provisions and Definitions
- Air District Regulation 2, Rule 1: Permits, General Requirements
- Air District Regulation 2, Rule 2: New Source Review
- Air District Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants
- Air District Regulation 2, Rule 6: Major Facility Review (Title V)
- Air District Regulation 6, Rule 1: Particulate Matter, General Requirements
- Air District Regulation 8, Rule 5: Storage of Organic Liquids
- Air District Regulation 8, Rule 6: Terminals and Bulk Plants
- Air District Regulation 8, Rule 8: Wastewater (Oil-Water) Separators
- Air District Regulation 8, Rule 9: Vacuum Producing Systems
- Air District Regulation 8, Rule 10: Process Vessel Depressurization
- Air District Regulation 8, Rule 18: Equipment Leaks
- Air District Regulation 8, Rule 28: Episodic Releases from Pressure Relief Devices at Petroleum Refineries and Chemical Plants
- Air District Regulation 8, Rule 44: Marine Vessel Loading Terminals
- Air District Regulation 9, Rule 1: Sulfur Dioxide
- Air District Regulation 9, Rule 2: Hydrogen Sulfide
- Air District Regulation 9, Rule 8: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines
- Air District Regulation 9, Rule 9: Nitrogen Oxides and Carbon Monoxide from Stationary Gas Turbines
- Air District Regulation 9, Rule 10: Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators and Process Heaters in Petroleum Refineries

- Air District Regulation 12, Rule 11: Flare Monitoring at Petroleum Refineries
- Air District Regulation 12, Rule 12: Flares at Petroleum Refineries
- 40 CFR Part 63, Subpart CC: Petroleum Refineries (NESHAP)
- 40 CFR Part 63, Subpart UUU: Petroleum Refineries: Catalytic Cracking, Catalytic Reforming, and Sulfur Plant Units (NESHAP)
- 40 CFR Part 61, Subpart FF: Benzene Waste Operations (NESHAP)
- 40 CFR Part 60, Subpart J: Standards of Performance for Petroleum Refineries (NSPS)
- State Airborne Toxic Control Measure for Stationary Compression Ignition (Diesel) Engines (ATCM)



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### **BAAQMD REGULATION 12, RULE 15: PETROLEUM REFINING EMISSIONS TRACKING**

**APPENDIX B**

**REGULATORY CONCEPT PAPER**

**Regulatory Concept Paper**  
**Petroleum Refining Emissions Tracking Rule**  
**Bay Area Air Quality Management District**  
**Draft: October 15, 2012**

**Background**

Petroleum refineries convert crude oil into a wide variety of refined products, including gasoline, aviation fuel, diesel and other fuel oils, lubricating oils, and feed stocks for the petrochemical industry. Crude oil consists of a complex mixture of hydrocarbon compounds with smaller amounts of impurities including sulfur, nitrogen, oxygen and metals (e.g., iron, copper, nickel, and vanadium). Crude oil that originates from different geographical locations may vary significantly with respect to its “quality”, as is most often determined by the oils’ density (light to heavy) and sulfur content (sweet to sour).

The industry standard measure for crude oil density is API gravity, which is expressed in units of degrees, and which is inversely related to density (i.e., a lower API gravity indicates higher density; a higher API gravity indicates lower density). “Light crude” generally refers to crude oil with API gravity of 38 degrees or more; “medium crude” has API gravity between 22 and 38 degrees; and “heavy crude” has API gravity of 22 degrees or less. “Sweet crude” is commonly defined as crude oil with a sulfur content of less than 0.5%, while “sour crude” has a sulfur content of greater than 0.5%.

“Light sweet crude” is the most sought-after type of crude oil as it contains a disproportionately large amount of the hydrocarbon fractions that are used in the more valuable refined products (e.g., gasoline, fuel oils, and aviation fuel). “Heavy sour crude” is significantly less expensive than “light sweet crude” because it contains a large amount of the hydrocarbon fractions heavier than diesel, is higher in sulfur content, and is therefore more difficult and expensive to turn into the more valuable refined products.

The quality of crude oil imports in the United States has steadily declined over the last several decades both in terms of density and sulfur content. Sour crudes also tend to be more corrosive than sweet crudes, and so there has also been an increase in the corrosiveness of imported crudes over time. The trend towards lower quality crudes is largely due to the refiners’ preference for quality crudes – this has led to the depletion of those reserves and reduced the market share of the light sweet crude that remains. These trends are expected to continue; some have estimated that worldwide production of heavy sour crudes will increase by about one-third by the year 2020.

Another issue that refiners have been faced with in recent years is increasingly more stringent regulatory standards for higher quality refined products. Both the U.S. EPA and the California Air Resources Board have adopted regulations that require refineries to significantly reduce the sulfur content of gasoline and diesel fuel, and other types of “reformulated fuel” standards have also been adopted.

Refiners have therefore had to confront two opposite forces – a crude supply that is of increasingly lower quality, and mandates that require high quality reformulated fuels. In

order to address these issues, refiners have responded in a variety of ways. One of the primary changes being made at virtually all refineries is to increase the amount of hydrotreating that occurs. Hydrotreating is the principle method for removing sulfur from crude oil, and it involves a chemical process in which hydrogen reacts with the sulfur to create hydrogen sulfide that can easily be removed from the oil. Other changes have included an increased reliance on processes that convert heavy oil into light products (e.g. coking). Increases in the corrosiveness of crude oil has been mitigated by the addition of compounds to neutralize the acid, while some refiners have chosen to upgrade their piping and unit materials to stainless steel. In some cases, low quality crude oil from the producing region is pre-processed to “upgrade” the oil to higher quality specifications before it is sent to the refinery (e.g., extra heavy oils, like those from the Orinoco region in Venezuela or the Alberta tar sands in Canada, are typically upgraded in a process that is both capital- and energy-intensive, but that yields a higher-quality “syncrude”).

The Congressional Research Service’s report for congress entitled “The U.S. Oil Refining Industry: Background in Changing Markets and Fuel Policies” (Nov. 22, 2010) summarizes the trend in crude oil quality, and the refiners responses, as follows:

“Over the last 25 years, the API gravity of imported crude oils has been decreasing while average sulfur content has been increasing. API gravity, a measure developed by the American Petroleum Institute, expresses the “lightness” or “heaviness” of crude oils on an inverted scale. With a diminishing supply of light sweet (low sulfur) crude oil, U.S. refiners have had to invest in multi-million dollar processing-upgrades to convert lower-priced heavier crude oils to high-value products such as gasoline, diesel, and jet fuel.” (Page 13)

### **Existing Regulatory Setting**

Bay Area refineries are subject to various air quality rules that have been adopted by the Air District, CARB and U.S. EPA. These rules contain standards that are expressed in a variety of forms to ensure that emissions are effectively controlled including: (1) requiring the use of specific emission control strategies or equipment (e.g., the use of floating roof tanks for VOC emissions), (2) requiring that emissions generated by a source be controlled by at least a specified percentage (e.g., 95% control of VOC emissions from pressure relief devices), (3) requiring that emissions from a source not exceed specific concentration levels (e.g., 100 ppm by volume of VOC for equipment leaks, unless those leaks are repaired within a specific timeframe; 250 ppm by volume SO<sub>2</sub> in exhaust gases from sulfur recovery units; 1000 ppm by volume in exhaust gases from catalytic cracking units), (4) requiring that emissions not exceed certain quantities for a given amount of material processed or fuel used at a source (e.g., 0.033 pounds NOx per million BTU of heat input, on a refinery-wide basis, for boilers, process heaters, and steam generators), (5) requiring that emissions be controlled sufficient to not result in off property air concentrations above specified levels (e.g., 0.03 ppm by volume of H<sub>2</sub>S in the ambient air), (6) requiring that emissions from a source not exceed specified opacity levels based on visible emissions observations (e.g., no more than 3 minutes in any hour in which emissions are as dark or darker than No. 1 on the Ringelmann chart), and (7) requiring that emissions be minimized by the use of all feasible prevention

measures (e.g., flaring prohibited unless it is in accordance with an approved Flare Minimization Plan). Air quality rules generally do not expressly limit mass emissions (e.g., pounds per year of any particular regulated air pollutant) from affected equipment unless that equipment was constructed or modified after March 7, 1979 and subject to the Air District's New Source Review (NSR) rule. All Bay Area refineries have "grandfathered" emission sources that were not subject to NSR, and so none of these facilities have overall mass emission limits that apply to the entire refinery. Nonetheless, mass emissions of relevant regulated air pollutants from Bay Area refineries are closely monitored, and these mass emissions have generally been substantially reduced over the past several decades.

### **Air Quality Issues**

There have been concerns expressed about the air quality impacts that may result from the use of lower quality crude slates at refineries. The use of lower quality crude at refineries could potentially mean increased emissions of air contaminants such as sulfur containing pollutants from sulfur recovery facilities. Emissions could also increase as a result of accidents related to the increased corrosiveness of lower quality crudes. Processing lower quality crudes also requires more intense processing and higher energy requirements, which can result in increased air emissions. In order to address these issues, it has been suggested that: (1) limits should be set on the use of heavy, high sulfur, crude oil at refineries, (2) refineries should be required to replace old boilers, heaters, and other energy inefficient equipment with new equipment that utilizes the Best Available Control Technology to reduce air pollutants, and (3) refineries should be required to use clean renewable power instead of "grid electricity" or fossil-fuel based power produced onsite.

Others contend that existing regulatory programs have resulted in significant emission reductions at refineries over the last decades even as the quality of crude oil inputs has been reduced. These regulatory programs would provide continued assurances that air emissions would not increase; or that any emission increases that might occur would not be significant in terms of health risks to the public. An increase in accidental releases due to the processing of more corrosive crudes can be prevented through the use of appropriate equipment, operating and maintenance procedures, and training requirements. Energy efficiency measures are already being implemented at refineries in response to the need to upgrade equipment to meet changing market conditions (in California, these now include market conditions resulting from the Cap-and-Trade program to reduce GHG emissions). Finally, the use of many types of renewable power (e.g., solar and wind) are impractical for refineries that must operate on a continuous basis.

### **Proposal for Addressing Air Quality Issues**

The Air District would develop a rule that would apply to all five petroleum refineries in the Bay Area and that would track changes in the facility's air emissions. Any observed increases in air emissions at the facility above baseline levels would trigger: (1) a

requirement for an analysis of the cause of the emissions increase (which may include various factors such as increases in production levels or declining crude oil quality), and (2) a requirement for an assessment of local public health impacts in the surrounding community resulting from the emissions increase. Any significant increases in emissions, as determined based on the impacts analysis, would trigger a requirement for mitigation through the use of best management practices or other appropriate measures. Information associated with rule implementation would be made available to the public, and a process would be established whereby information of a “business confidential” nature would be protected.

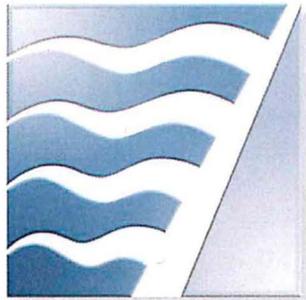
Information on crude oil quality could be tracked in terms of its density, sulfur content, and perhaps using the results of other available chemical or physical analyses. Air emissions are already tracked at Bay Area refineries, but the specific methods used vary to some extent from one facility to another. Since emissions at a given facility may be impacted by events such as turnarounds and accidental releases that don’t occur every year, it may be appropriate that baseline and post-baseline emissions be established on a multi-year basis.

The proposed rule could incorporate elements similar to those utilized in Air District Regulation 12, Rule 12: Flares at Petroleum Refineries. Rule 12-12 requirements include: (1) flaring and associated emissions must be reported, (2) reports must be submitted as to the cause of flaring, and (3) Flare Minimization Plans (FMPs), which contain a variety of information about how flaring emissions have been, and will continue to be, minimized, must be prepared and updated on an annual basis. Information regarding flare activity and emissions are made available to the public, and FMPs are prepared and updated using a process that includes public review and comment, while providing a process to protect information that is considered business confidential. Rule 12-12 (and the related Air District Rule 12-11: Flare Monitoring at Petroleum Refineries) resulted in significant decreases in flaring activity and emissions at Bay Area refineries, and has served as a model for similar rules adopted by other agencies including U. S. EPA.

The proposed rule could also require that refineries establish more robust monitoring systems to detect emitted air pollutants along their facility boundaries and/or in nearby communities. Community-based air quality monitors could provide valuable data on public exposures to air pollutants emitted on a routine basis, and as a result of accidental releases.

### **Schedule**

Air District staff could begin the rule development process in late 2012, with the goal of bringing a proposed Petroleum Refining Emissions Tracking Rule to the District’s Board of Directors for consideration of adoption in the first half of 2014.



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

## **WORKSHOP REPORT**

**DRAFT**

### **BAAQMD REGULATION 12, RULE 15: PETROLEUM REFINING EMISSIONS TRACKING**

**APPENDIX C**

**PRELIMINARY DRAFT RULE**

**REGULATION 12  
MISCELLANEOUS STANDARDS OF PERFORMANCE  
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**PETROLEUM REFINING EMISSIONS TRACKING**

(Adopted [DATE])

**12-15-100 GENERAL**

**12-15-101 Description:** The purpose of this rule is to track air emissions from petroleum refineries over time, to identify the cause of, and mitigate, any significant emissions increases that occur, and to establish monitoring systems to provide detailed air quality data along refinery boundaries and in nearby communities.

**12-15-200 DEFINITIONS**

**12-15-201 Accidental Air Release:** An unanticipated emission of a criteria pollutant, toxic air contaminant, or greenhouse gas into the atmosphere.

**12-15-202 Acute Hazard Index:** A measure of short-term non-cancer health risks, which is the sum of the individual acute hazard quotients for toxic air contaminants identified as affecting the same target organ or organ system.

**12-15-203 Acute Hazard Quotient:** The ratio of the estimated short-term average concentration of a toxic air contaminant at a particular receptor location to its acute reference exposure level (estimated for inhalation exposure).

**12-15-204 Air Emission Reduction Measures:** Equipment or techniques intended to reduce or eliminate air emissions from a source, and that may include equipment upgrades or modernization, improved emissions capture or control, process changes, operational changes, or feedstock modifications.

**12-15-205 Ambient Air:** The portion of the atmosphere external to buildings to which the general public has access.

**12-15-206 Baseline Period:** A period of one calendar year, from the year 2004 through the year 2013, that is selected by a refinery owner/operator for establishing a refinery baseline emissions inventory.

**12-15-207 Cancer Risk:** An estimate of the probability that an individual will develop cancer as a result of lifetime exposure to emitted carcinogens at a given receptor location, and considering, where appropriate, age sensitivity factors to account for inherent increased susceptibility to carcinogens during infancy and childhood.

**12-15-208 Chronic Hazard Index:** A measure of long-term non-cancer health risks, which is the sum of the individual chronic hazard quotients for toxic air contaminants identified as affecting the same target organ or organ system.

**12-15-209 Chronic Hazard Quotient:** The ratio of the estimated long-term average concentration of a toxic air contaminant at a particular receptor location to its chronic reference exposure level (estimated for inhalation and non-inhalation exposures).

**12-15-210 Community Air Monitoring System:** Equipment that measures and records air pollutant concentrations in the ambient air at or near sensitive receptor locations near a facility, and which may be useful for estimating associated pollutant exposures and health risks, and in determining trends in pollutant levels over time.

**12-15-211 Criteria Pollutant:** An air pollutant for which an ambient air quality standard has been established, or that is an atmospheric precursor to such an air pollutant. For the purposes of this rule, criteria pollutants are carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), particulate matter with an aerodynamic diameter of 10 micrometers or less (PM<sub>10</sub>), particulate matter with an aerodynamic diameter of 2.5 micrometers or less (PM<sub>2.5</sub>), precursor organic compounds (POC), and sulfur dioxide (SO<sub>2</sub>).

**12-15-212 Crude Oil:** Petroleum, as it occurs after being extracted from geologic formations by an oil well, and after extraneous substances may have been removed, and which may be

- subsequently processed at a petroleum refinery.
- 12-15-213 Crude Slate:** A record of the types and quantities of crude oil processed by a particular petroleum refinery over a period of time.
- 12-15-214 Emissions Inventory:** A comprehensive accounting of the types and quantities of criteria pollutants, toxic air contaminants, and greenhouse gases that are released into the atmosphere based on state-of-the-art measurement technologies and estimation methodologies. For the purposes of this rule, emissions inventory data shall be collected or calculated for all continuous, intermittent, predictable, and accidental air releases from stationary sources at a petroleum refinery.
- 12-15-215 Feasible:** Capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors.
- 12-15-216 Fence-line Monitoring System:** Equipment that measures and records air pollutant concentrations along the property boundary of a facility, and which may be useful for detecting and estimating the quantity of fugitive emissions, gas leaks, and other air emissions from the facility.
- 12-15-217 Greenhouse Gases (GHGs):** The air pollutant that is defined in 40 C.F.R. Section 86.1818-12(a), which is a single air pollutant made up of a combination of the following six constituents: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. GHG emissions shall be expressed as CO<sub>2</sub> equivalent emissions (CO<sub>2</sub>e) according to the methodology set forth in 40 C.F.R. Section 52.21(b)(49)(ii).
- 12-15-218 Health Risk:** The potential for adverse human health effects resulting from exposure to emissions of air contaminants and ranging from relatively mild temporary conditions, such as eye or throat irritation, shortness of breath, or headaches, to permanent and serious conditions, such as birth defects, cancer or damage to lungs, nerves, liver, heart, or other organs. Measures of health risk from exposure to toxic air contaminants include cancer risk, chronic hazard index, and acute hazard index.
- 12-15-219 Petroleum Refinery (Refinery):** An establishment that processes crude oil to produce more usable products such as gasoline, diesel fuel, aviation fuel, lubricating oils, asphalt or petrochemical feedstocks. Petroleum refinery processes include separation processes (e.g., atmospheric or vacuum distillation, and light ends recovery), petroleum conversion processes (e.g., cracking, reforming alkylation, polymerization, isomerization, coking, and visbreaking) petroleum treating processes (e.g., hydrodesulfurization, hydrotreating, chemical sweetening, acid gas removal, and deasphalting), feedstock and product handling (e.g., storage, blending, loading, and unloading), and auxiliary facilities (e.g., boilers, waste water treatment, hydrogen production, sulfur recovery plant, cooling towers, blowdown systems, compressor engines, and power plants).
- 12-15-220 Receptor Location:** A location outside the property boundary of the facility being evaluated where a member of the public may reasonably be expected to be exposed to air pollutants for the particular acute or chronic health risks being evaluated.
- 12-15-221 Refinery Baseline Emissions Inventory:** An emissions inventory for the baseline period that is used as a reference with which to compare emissions inventories for later periods of time (on-going emissions inventories) in order to determine changes in emissions that have occurred from a petroleum refinery. A refinery baseline emissions inventory shall not include emissions that exceeded regulatory or permitted limits, or emissions resulting from accidents required to be reported in a Risk Management Plan (RMP) under 40 CFR 68.168. In addition, baseline emissions for each source shall be adjusted downward to exclude any emissions that would have exceeded an emission limitation with which the source must comply on or before July 1, 2014, had such source been required to comply with such limitation during the baseline period.
- 12-15-222 Refinery Emission Reduction Audit:** An evaluation of the opportunities for implementing air emission reduction measures at sources of air pollution at a petroleum refinery, and the identification of all such feasible measures. A refinery emission reduction audit report shall identify all potential air emission reduction measures considered, and document the rationale for rejecting any measures that are identified as infeasible, including those that are rejected on the basis of being too costly.
- 12-15-223 Refinery On-going Emissions Inventory:** An emissions inventory at a petroleum refinery

covering a period of time occurring after the baseline period. For the purposes of this rule, on-going emissions inventories are required to be prepared for the calendar year 2014, and for each subsequent calendar year.

**12-15-224 Refinery Owner/Operator:** Any person who owns, operates, or controls a petroleum refinery and that possesses sufficient authority to take the actions required to comply with this rule. The refinery owner/operator is responsible for submittal of reports and plans required by this rule that cover the entire petroleum refinery, including any refinery processes or auxiliary facilities that may be separately owned or operated.

**12-15-225 Sensitive Receptor:** A receptor location where an individual that may have increased vulnerability to exposure to air pollutants may be present. For the purposes of this rule, sensitive receptors are residences (where an individual may live for 6 months or more out of a year), schools (including colleges and universities), daycares, hospitals, and senior-care facilities.

**12-15-226 Source:** Any article, machine, equipment, operation, contrivance or related groupings of such which may produce and/or emit air pollutants.

**12-15-227 Toxic Air Contaminant (TAC):** An air pollutant that may cause or contribute to an increase in mortality or in serious illness or that may pose a present or potential hazard to human health. For the purposes of this rule, TACs consist of the substances listed in Regulation 2, Rule 5, Table 2-5-1.

**12-15-228 Trigger-Levels:** An increase in air emissions from a petroleum refinery relative to the baseline period that, if exceeded, initiates requirements under this rule to prepare or update an emission reduction plan. For the purposes of this rule, trigger-levels are as follows:

**228.1:** Criteria pollutants: 10 tons per year of POC, NO<sub>x</sub>, or SO<sub>2</sub>; 15 tons per year of PM<sub>10</sub>; 10 tons per year of PM<sub>2.5</sub>, or a lesser amount that would increase PM<sub>2.5</sub> air concentrations at a sensitive receptor by more than 0.3 micrograms per cubic meter (annual average) or that, when considered cumulatively with all sources of PM<sub>2.5</sub> at the refinery and all other sources located within 1000 feet of the refinery's property line, would result in PM<sub>2.5</sub> air concentrations at a sensitive receptor of more than 0.8 micrograms per cubic meter (annual average); 100 tons per year of CO, or a greater amount if the local CO concentrations in the ambient air from the refinery and all other emission sources would not exceed 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average).

**228.2:** Toxic Air Contaminants: The quantity of TAC emissions that would increase cancer risk at a sensitive receptor by more than 10 in a million, or non-cancer risk (chronic and acute) at a sensitive receptor by more than a Hazard Index of 1.0, or a lesser amount that, when considered cumulatively with all sources of TACs at the refinery and all other sources located within 1000 feet of the refinery's property line, would result in a cancer risk at a sensitive receptor that exceeds 100 in a million or a non-cancer risk (chronic) at a sensitive receptor that exceeds a Hazard Index of 10.0.

**228.3:** Greenhouse Gases: 10 tons per year of GHGs.

#### **12-15-300 STANDARDS**

**12-15-301 Emission Reduction Plan Implementation:** A refinery owner/operator shall implement any air emission reduction measures identified in an approved emission reduction plan prepared under Sections 12-15-405.2, 405.3, or 405.4 in accordance with the schedule provided in that plan.

#### **12-15-400 ADMINISTRATIVE REQUIREMENTS**

**12-15-401 Refinery Baseline Emissions Inventory Report:** On or before December 31, 2014, a refinery owner/operator shall submit to the APCO a refinery baseline emissions inventory report in an APCO-approved format. This report shall include, at a minimum, the following:

**401.1** Identification of the baseline period.

**401.2** A summary of the total quantity of each criteria pollutant, TAC, and GHG that was

emitted from the petroleum refinery during the baseline period, excluding any emissions that do not meet the definition of Refinery Baseline Emissions Inventory in Section 12-15-221.

**401.3** A detailed listing of the annual emissions of each criteria pollutant, TAC, and GHG emitted from each source at the petroleum refinery during the baseline period, and a complete description of the methodology used for determining these emissions including documentation of the basis for any assumptions used and the exclusion of any emissions that do not meet the definition of Refinery Baseline Emissions Inventory in Section 12-15-221. Emissions resulting from accidental releases shall be identified as such, along with the date(s) and times(s) that the release occurred.

**401.4** A plot plan that clearly identifies the location of each source identified in Section 12-15-401.3 within the petroleum refinery.

**12-15-402 Refinery On-going Emissions Inventory Reports:** On or before July 1, 2015, and every subsequent July 1, a refinery owner/operator shall submit to the APCO an on-going emissions inventory report covering the previous calendar year period in an APCO-approved format. This report shall include, at a minimum, the following:

**402.1** Identification of the calendar year that the refinery on-going emissions inventory report covers.

**402.2** A summary of the total quantity of each criteria pollutant, TAC, and GHG that was emitted from the petroleum refinery during the on-going emissions inventory period.

**402.3** A detailed listing of the annual emissions of each criteria pollutant, TAC, and GHG emitted from each source at the petroleum refinery, and a complete description of the methodology used for determining these emissions including documentation of the basis for any assumptions used, except that methodologies that are unchanged from what is described in the baseline emissions inventory report may instead be noted as such. Emissions resulting from accidental releases shall be identified as such, along with the date(s) that the release occurred.

**402.4** A plot plan that clearly identifies the location of each source identified in Section 12-15-402.3 within the petroleum refinery.

**402.5** A table that shows, on a refinery-wide basis for each applicable air pollutant, the change in emissions that occurred between the baseline period and the period for which the on-going emissions inventory report was prepared under this Section.

**402.6** For each air pollutant for which an increase in emissions has been identified under Section 12-15-402.5, identification of whether the increase exceeds applicable trigger-levels. Emission increases of PM<sub>2.5</sub>, TACs, and CO (greater than 100 tons per year) shall be identified as exceeding trigger-levels unless the refinery owner/operator includes in the report a modeling demonstration completed in accordance with Section 12-15-407.

**12-15-403 Revision of Baseline Emissions Inventory Report:** Any improvements in emissions inventory methodologies that are used to expand or refine refinery on-going emissions inventory reports submitted under Section 12-15-402 shall also be used to expand or refine the refinery baseline emissions inventory, to the extent that such improved methodologies are also applicable to the sources included in the baseline emissions inventory. In such instances, a revised refinery baseline emissions inventory report shall be submitted to the APCO no later than by the date the applicable on-going emissions inventory report is due. The revised refinery baseline emissions inventory report shall, at a minimum, identify the date of the revision, contain the information described in Sections 12-15-401.1 to 401.4, and clearly identify, describe, and justify the changes in the refinery baseline emissions inventory report that have been made.

**12-15-404 Review and Approval of Refinery Emissions Inventory Reports:** The procedure for determining whether a refinery baseline emissions inventory report submitted under Section 12-15-401 or 403, and a refinery on-going emissions inventory report submitted under Section 12-15-402, meet the applicable requirements of this rule is as follows:

**404.1 Preliminary Review:** Within 45 days of receipt of the emissions inventory report, the APCO will complete a preliminary review of the report to identify any deficiencies that need to be corrected. If the APCO determines that the submitted emissions

inventory report is deficient, the APCO will notify the refinery owner/operator in writing. The notification will specify the basis for this determination and the required corrective action.

**404.2 Corrective Action:** Upon receipt of such notification, the refinery owner/operator shall correct the identified deficiencies and resubmit the emissions inventory report within 45 days. If the APCO determines that the refinery owner/operator failed to correct any deficiency identified in the notification, the APCO will disapprove the emissions inventory report, or the APCO may make the necessary corrections to the emissions inventory report with a designation that the inventory report includes Air District revisions.

**404.3 Public Comment:** The emissions inventory report, including any revisions made to correct deficiencies will be made available for public review for at least 45 days (with the exception of information designated confidential). The APCO will consider any written comments received during this period prior to approving or disapproving the final emissions inventory report.

**404.4 Final Action:** Within 45 days of the close of the public comment period under Section 12-15-404.3, the APCO will approve the emissions inventory report if the APCO determines that the emissions inventory report meets the requirements of Sections 12-15-401, 402, or 403, and Section 12-15-601, and shall provide written notification to the refinery owner/operator. This period may be extended if necessary as determined by the APCO. If the APCO determines that the emissions inventory does not meet the requirements of Sections 12-15-401, 402, 403, and Section 12-15-601, the APCO will notify the refinery owner/operator in writing. The notification will specify the basis for this determination. Upon receipt of such notification, the refinery owner/operator shall correct the identified deficiencies and resubmit the emissions inventory report within 45 days. If the APCO determines that the refinery owner/operator failed to correct any deficiency identified in the notification, the APCO will determine that the refinery owner/operator has failed to meet the requirements of Sections 12-15-401, 402, or 403, and Section 12-15-601, and will disapprove the report, or the APCO may make the necessary corrections and approve the report with a designation that the report was approved with Air District revisions.

**404.5 Public Inspection:** Within 15 days of the approval or disapproval of an emissions inventory report under Section 12-15-404.4, the APCO shall post the approved or disapproved emissions inventory report on the District's website, and shall notify any member of the public who submitted comments under Section 12-15-404.3, or who otherwise requested such notification of this action in writing. In making information available for public inspection, the confidentiality of trade secrets, as designated by the refinery owner/operator, shall be handled in accordance with the District's procedures for handling requests for documents containing trade secrets.

**12-15-405 Emission Reduction Plans:** A refinery owner/operator shall submit to the APCO an emission reduction plan, or an update to an emission reduction plan that has been previously approved and that is not fully implemented, within 90 days of the APCO's approval of a refinery on-going emissions inventory report if that report identifies that emissions of criteria pollutants, TACs, or GHGs from the refinery have increased relative to the baseline period in excess of trigger-levels. The emission reduction plan shall include, at a minimum, the following:

**405.1 Causal Analysis:** For any pollutant for which trigger levels are identified as being exceeded under Section 12-15-402.6, an explanation of the cause of the increase in emissions shall be provided. The causal analysis shall include:

1.1 Identification of the source(s) of emissions that contributed most significantly to the refinery-wide emissions increase

1.2 Identification of the factor, or factors, that resulted in the emissions increase, and a description of the analysis that led to these findings. This section shall address, in addition to other potential factors involved, the degree to which changes in crude slate at the petroleum refinery may have caused or contributed to the emissions increase. Records of the quantity and

composition of crude oil, and any other pre-processed feedstocks refined at the facility, shall be included to support these findings.

1.3 For instances in which accidental air releases are identified in Section 12-15-405.1.2 as causing or contributing to an emissions increase that exceed trigger-levels at the refinery, identification of the accident's initiating event and any contributing factors, and a description of the investigation that led to these findings.

**405.2 Planned Emission Reductions:** Identification and description of any air emission reduction measures that the refinery owner/operator has planned and is committed to implement. The description provided shall identify the specific source(s) involved, the estimated emission reductions, and a schedule for the permitting and implementation of the measures identified.

**405.3 All Feasible Measures:** If the planned emission reductions identified under Section 12-15-405.2 are insufficient to reduce the on-going refinery-wide emissions increase to less than trigger-levels within a period of two years of the date the plan is submitted, a refinery emission reduction audit shall be completed for each pollutant that exceeds trigger-levels, and the audit report provided as an element of the emission reduction plan. The emission reduction plan shall identify the specific source(s) for which the audit determines that air emission reduction measures are determined to be feasible, estimate the emission reductions that will result from their implementation, and provide a schedule for the expeditious permitting and implementation of all feasible measures.

**405.4 Updated Emission Reduction Plans:** Updates to existing emission reduction plans shall address the status of air emission reduction measures included in the existing plan. If the existing plan failed to reduce emission increases to less than trigger-levels within two years as the plan specified under Section 12-15-405.2, the updated emission reduction plan shall include a refinery emission reduction audit. If the existing emission reduction plan included a refinery emission reduction audit, the updated emission reduction plan shall include an updated refinery emission reduction audit that addresses the feasibility of potential air emission reduction measures based on any changes that may have occurred in economic, environmental, legal, social and technological factors.

**12-15-406 Review and Approval of Emission Reduction Plans:** The procedure for determining whether an emission reduction plan, or an update to an emission reduction plan, submitted under Section 12-15-405 meets the applicable requirements of this rule is as follows:

**406.1 Preliminary Review:** Within 45 days of receipt of the emission reduction plan, the APCO will complete a preliminary review of the plan to identify any deficiencies that need to be corrected. If the APCO determines that the submitted plan is deficient, the APCO will notify the refinery owner/ operator in writing. The notification will specify the basis for this determination and the required corrective action.

**406.2 Corrective Action:** Upon receipt of such notification, the refinery owner/ operator shall correct the identified deficiencies and resubmit the proposed emission reduction plan within 45 days. If the APCO determines that the refinery owner/operator failed to correct any deficiency identified in the notification, the APCO will disapprove the plan.

**406.3 Public Comment:** The emission reduction plan, including any revisions made to correct deficiencies, will be made available to the public for at least 45 days (with exception of confidential information). The APCO will consider any written comments received during this period prior to approving or disapproving the final plan.

**406.4 Final Action:** Within 45 days of the close of the public comment period under Section 12-15-406.3, the APCO will approve the emission reduction plan if the APCO determines that the plan meets the requirements of Section 12-15-405, and will provide written notification to the refinery owner/operator. This period may be extended if necessary as determined by the APCO. If the APCO determines that the plan does not meet the requirements of Section 12-15-405, the APCO will notify the refinery owner/operator in writing. The notification will specify the basis for this

determination. Upon receipt of such notification, the refinery owner/operator shall correct the identified deficiencies and resubmit the plan within 45 days. If the APCO determines that the refinery owner/operator failed to correct any deficiency identified in the notification, the APCO will determine that the refinery owner/operator has failed to meet the requirements of Section 12-15-405 and will disapprove the plan.

**406.5 Public Inspection:** Within 15 days of the approval or disapproval of an emission reduction plan under Section 12-15-406.4, the APCO shall post the plan on the District's website, and shall notify any member of the public, who submitted comments under Section 12-15-406.3, or who otherwise requested such notification of this action in writing. In making information available for public inspection, the confidentiality of trade secrets, as designated by the refinery owner/operator, shall be handled in accordance with the District's procedures for handling requests for documents containing trade secrets.

**12-15-407 Modeling Demonstration for Emission Increases of PM<sub>2.5</sub>, TACs, and CO:** The refinery owner/operator may elect to demonstrate by modeling that an emission increase of PM<sub>2.5</sub>, TACs, or CO (greater than 100 tons per year) from the refinery relative to the baseline period does not exceed the air concentration-based, or health risk-based, trigger levels specified in Section 12-15-228.1 or 228.2. Such a demonstration shall be submitted to the APCO as an element of an on-going emissions inventory report, and shall be conducted in accordance with the following:

**407.1 Air Concentrations of PM<sub>2.5</sub> and CO:** Air concentrations of PM<sub>2.5</sub> and CO shall be based on an air dispersion modeling analysis performed to the satisfaction of the APCO, and which includes meteorological and topographic data necessary to estimate such concentrations. Evaluation of CO concentrations in the ambient air shall include appropriate background concentrations established based on ambient air quality monitoring data and/or modeling of local CO sources.

**407.2 Health Risks from TAC Emissions:** Health risks from TAC emissions shall be based on an air dispersion modeling analysis performed to the satisfaction of the APCO, and which includes meteorological and topographic data necessary to estimate such concentrations. Cancer risk and non-cancer Hazard Index shall be calculated from the modeling results using current guideline methods adopted by Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA) for use in the Air Toxics Hot Spots Program.

**12-15-408 Air Monitoring Plans:** On or before December 31, 2014, the refinery owner/operator shall submit to the APCO a plan for establishing and operating a fence-line monitoring system and a community air monitoring system. The plan shall include detailed information describing the equipment to be used to monitor and record pollutant levels, the siting, operation, and maintenance of this equipment, and procedures for implementing data quality assurance and quality control. Within one year of the issuance of any updated air monitoring guidelines published by the APCO under Section 12-15-411, the refinery owner/operator shall submit to the APCO an updated air monitoring plan.

**12-15-409 Review and Approval of Air Monitoring Plans:** The procedure for determining whether an air monitoring plan submitted under Section 12-15-408 meets the applicable requirements of this rule is as follows:

**409.1 Preliminary Review:** Within 45 days of receipt of the air monitoring plan, the APCO will complete a preliminary review of the plan to identify any deficiencies that need to be corrected. If the APCO determines that the submitted plan is deficient, the APCO will notify the refinery owner/operator in writing. The notification will specify the basis for this determination and the required corrective action.

**409.2 Corrective Action:** Upon receipt of such notification, the refinery owner/operator shall correct the plan and resubmit the proposed plan within 45 days. If the APCO determines that the refinery owner/operator failed to correct any deficiency identified in the notification, the APCO will disapprove the plan.

**409.3 Public Comment:** The plan, including any revisions made to correct deficiencies, will be made available for public review for at least 45 days (with the exception of information designated confidential). The APCO will consider any written comments

received during this period prior to approving or disapproving the final plan.

**409.4 Final Action:** Within 45 days of the close of the public comment period under Section 12-15-409.3, the APCO will approve the air monitoring plan if the APCO determines that the plan meets the requirements of Section 12-15-408 and Section 12-15-602, and shall provide written notification to the refinery owner/operator. This period may be extended if necessary as determined by the APCO. If the APCO determines that the plan does not meet the requirements of Section 12-15-408 and Section 12-15-602, the APCO will notify the refinery owner/operator in writing. The notification will specify the basis for this determination. Upon receipt of such notification, the refinery owner/operator shall correct the identified deficiencies and resubmit the air monitoring plan within 45 days. If the APCO determines that the refinery owner/operator failed to correct any deficiency identified in the notification, the APCO will determine that the refinery owner/operator has failed to meet the requirements of Sections 12-15-408 and Section 12-15- 602 and will disapprove the plan.

**409.5 Public Inspection:** Within 15 days of the approval or disapproval of an air monitoring plan under Section 12-15-409.4, the APCO shall post the plan on the District's website, and shall notify any member of the public who submitted comments under Section 12-15-409.3, or who otherwise has requested such notification of this action in writing. In making information available for public inspection, the confidentiality of trade secrets, as designated by the refinery owner/operator, shall be handled in accordance with the District's procedures for handling requests for documents containing trade secrets.

**12-15-410 Emissions Inventory Guidelines:** The APCO shall publish, and periodically update, emissions inventory guidelines for petroleum refineries that specify the methodology to be used for establishing emissions inventories required under this rule. Methods included in these guidelines may include, but are not limited to, continuous monitoring to measure emissions, applying the results of emissions source tests to known activity levels, combining published emission factors with known activity levels, material balances, or empirical formulae.

**12-15-411 Air Monitoring Guidelines:** The APCO shall publish air monitoring guidelines for petroleum refineries that contain specifications for community air monitoring systems and fence-line monitoring systems required under this rule. These guidelines may include, but are not limited to, specifications for pollutant coverage, siting, instrumentation, operation, maintenance, quality assurance, quality control, and data reporting. The guidelines shall be updated by the APCO within five years of initial issuance in consideration of advances in air monitoring technology, updated information regarding the health effects of air pollutants, and review of data collected by existing fence-line and community air monitoring systems established under this rule.

**12-15-412 Designation of Confidential Information:** When submitting an emissions inventory report, emission reduction plan, air monitoring plan, or other documents or records required by this rule, the refinery owner/operator shall designate as confidential any information claimed to be exempt from public disclosure under the California Public Records Act, Government Code Section 6250 et seq. If a document is submitted that contains information designated confidential in accordance with this section, the owner/operator shall provide a justification for this designation and shall submit a separate copy of the document with the information designated confidential redacted.

## **12-15-500 MONITORING AND RECORDS**

**12-15-501 Community Air Monitoring System:** Within one year of the approval of an air monitoring plan under Section 12-15-409.4, the refinery owner/operator will ensure that a community air monitoring system is installed, and is operated and maintained in accordance with the approved air monitoring plan. Community air monitoring system data shall also be reported as specified in the approved plan.

**12-15-502 Fence-line Monitoring System:** Within one year of the approval of an air monitoring plan

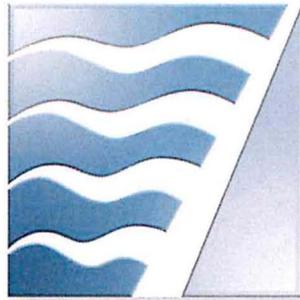
under Section 12-15-409.4, the refinery owner/operator will ensure that a fence-line monitoring system is installed, and is operated in accordance with the approved air monitoring plan. Fence-line monitoring system data shall also be reported as specified in the approved plan.

**12-15-503 Recordkeeping:** The refinery owner/operator shall maintain records of all monitoring information, source test results, material and fuel throughputs, and other information used to establish emissions inventories required under this rule. Such records shall be maintained for a period of five years after the submittal of a required emissions inventory report, and shall be made available to the APCO upon request. The refinery owner/operator shall also maintain records of the quantity and composition of crude oil, and other pre-processed feedstocks, that are refined. Composition data shall include, at a minimum, API gravity and sulfur content.

#### **12-15-600 MANUAL OF PROCEDURES**

**12-15-601 Emissions Inventory Procedures:** Each emissions inventory required under this rule shall be prepared following the District's Emission Inventory Guidelines for Petroleum Refineries established under Section 12-15-410.

**12-15-602 Air Monitoring Procedures:** Each air monitoring plan required under this rule shall be prepared following the District's Air Monitoring Guidelines for Petroleum Refineries established under Section 12-15-411.



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

## **WORKSHOP REPORT**

**DRAFT**

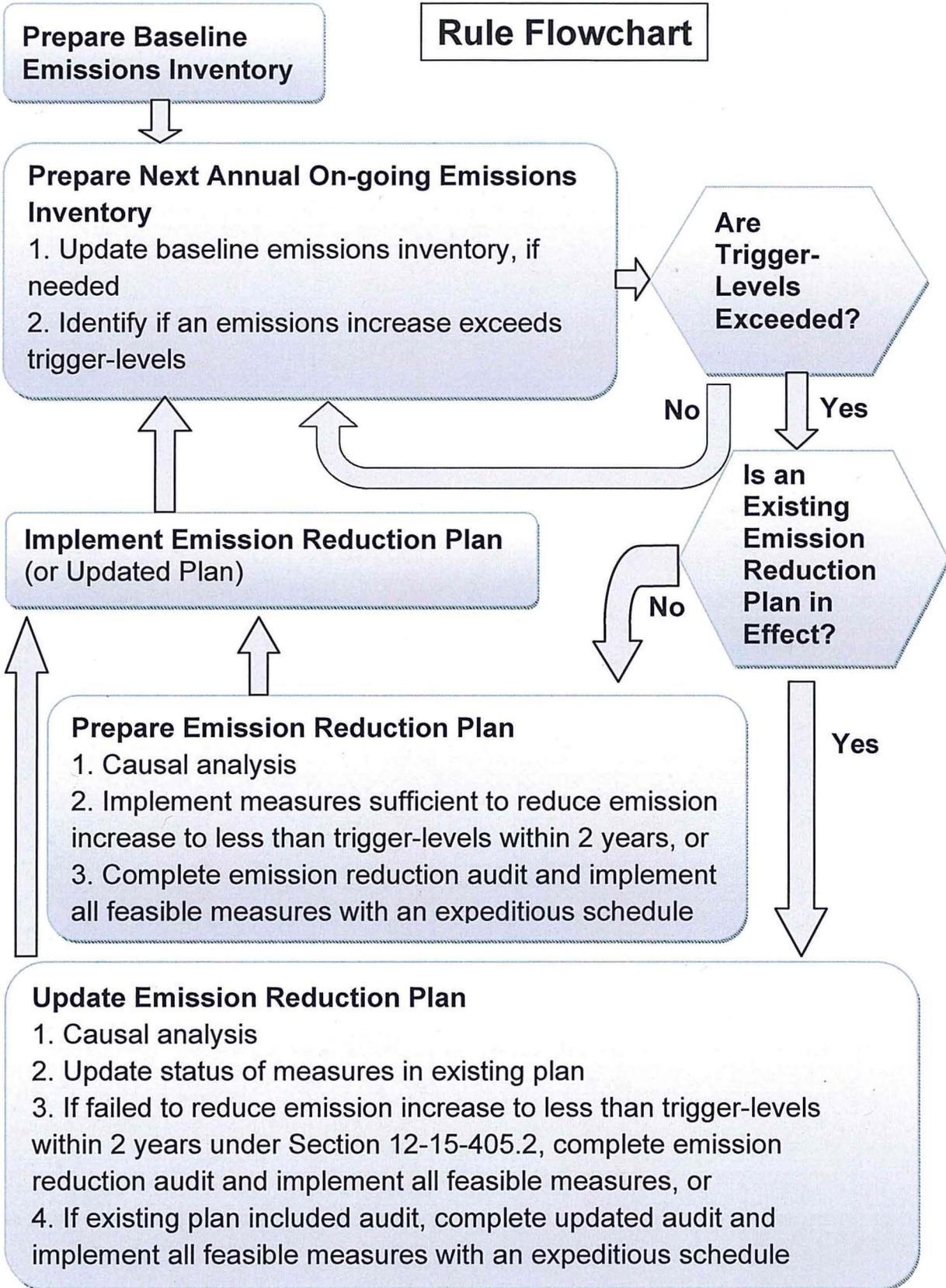
### **BAAQMD REGULATION 12, RULE 15: PETROLEUM REFINING EMISSIONS TRACKING**

**APPENDIX D**

**FLOWCHART**

**FOR EMISSIONS TRACKING AND EMISSION  
REDUCTION PLAN ELEMENTS OF RULE**

# Rule Flowchart



**Amy Million - National Geographic article; city of Barrington Ill takes on rail safety issue**

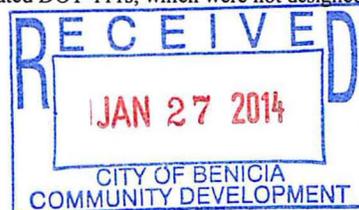
**From:** Marilyn Bardet <mjbardet@comcast.net>  
**To:** Amy Million <amillion@ci.benicia.ca.us>, Brad Kilger <bkilger@ci.benicia...>  
**Date:** 1/18/2014 11:11 PM  
**Subject:** National Geographic article; city of Barrington Ill takes on rail safety issue  
**CC:** Rod Sherry <rsherry@csa-engineers.com>, George Oakes <oakes@earthlink.ne...>  
**Attachments:** oil-trains-illinois-dangers\_75236\_990x742.jpeg; 75607\_990x742-cb1389988403.jpeg; 75625\_990x742-cb1389994806.jpeg

Hello Amy and Brad,

Please add the following article to the public legal record on Valero's Crude-By-Rail Project. The city of Barrington Illinois has challenged the US Transportation Safety Board on the use of DOT-111 tanker cars for transport of crude oil, especially considering the cars' known vulnerability to puncture during accidents and the extreme hazards posed by unit trains composed of 50 - 100 out-dated DOT-111s, which were not designed to carry flammable liquids, let alone explosive, gasoline-like Bakken.

Thank you,

Marilyn  
 707-745-9094



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## Illinois Village Leads Charge for Tougher Oil Train Rules



The amount of crude oil being transported on trains like this one, seen in Illinois and bound east, has increased 85-fold since 2006. Recent accidents involving oil trains have raised safety concerns.

PHOTOGRAPH BY BILL MEIER

Marianne Lavelle  
 National Geographic

PUBLISHED JANUARY 17, 2014

**When a freight train rolls through  
 Barrington, Illinois, gates with flashing  
 lights lower to block all four of the village's**

cross-town thoroughfares—often at the same time. It happens 20 times a day.

And as more and more of those trains have become "unit trains"—carrying only one type of freight, crude oil—residents have been voicing concerns about matters far more urgent than the time they lose idling at grade crossings. "People are seeing those black cars and they know there's something different going on," said village president Karen Darch. (See related blog post: "[Eight Steps for Safer Oil Trains Eyed by U.S. Safety Officials](#)")

Barrington, a suburb of about 10,000 people 30 miles (48 kilometers) northwest of Chicago, has been leading a push for tougher U.S. safety regulations on the nation's sharply increasing oil train traffic. Some tangible action on that plea came Thursday, when U.S. Transportation Secretary Anthony Foxx held a [closed-door meeting](#) in Washington, D.C., to press oil and rail company executives to come up with a plan for safer operation of oil trains.

Foxx gave the executives 30 days to produce recommendations to address a host of safety issues, from weak tank cars to the lack of real-time data on freight risks for emergency responders. The unusual meeting indicated that President Barack Obama's administration is seeking immediate steps to boost safety while the department works on new regulations that could be a year away.

For more than 20 years, safety investigators have been warning that the majority of tank cars used to haul flammable liquids on North American railroads are prone to puncture. And with sharply increasing production of both petroleum products and ethanol in the past five years, there is now an "unprecedented volume of flammable liquids currently in rail commerce," said the investigative agency, the U.S. National Transportation Safety Board (NTSB) in a [recent regulatory filing](#).

Proposals for new rules languished until last July 6, when [an unattended crude-oil train rolled down a grade](#) at high speed into Lac-Mégantic, Quebec, where it derailed and exploded, leveling the center of

the small lakeside town and killing 47 people. (See related stories: ["Oil Train Crash Probe Raises Five Key Issues on Cause"](#) and ["Oil Train Tragedy in Canada Spotlights Rising Crude Transport by Rail."](#))

Since then, there have been at least four other fiery oil train derailments involving the same suspect tank cars in North America, including two in just the past three weeks. Some 2,400 residents near Fargo, North Dakota, were forced to flee their homes on December 30 when an oil train collided with a train carrying grain. (See related, ["N.D. Oil Train Fire Spotlights Risks of Transporting Crude."](#)) Then, on January 7, a train carrying crude oil and propane derailed in northwest New Brunswick, Canada; authorities evacuated 45 homes and barred residents from the site for four days while the fire burned.

Although no one was hurt in either incident, industry observers believe the most recent accidents have increased pressure on regulators, both in the United States and Canada.



The November derailment of a tanker train carrying crude in western Alabama was one of four oil train accidents in the last three months.

PHOTOGRAPH BY BILL CASTLE, ABC 33/40 VIA AP

Action can't come soon enough for the train towns that have watched up close as crude oil shipments on U.S. Class 1 railroads, the major freight lines, increased 85-fold since 2006, from 4,700 carloads to 400,000 in 2013, according to [a rail industry regulatory filing](#). In Barrington, Darch notes that many of her constituents, including her own husband, rely on trains: the commuter line that takes them into Chicago each day on separate tracks that intersect the newly busy freight line, also at a grade crossing. "It's ironic," she said. "The town has grown up on the rail and we don't want to die on the rail."

### Unsafe at Any Speed?

The most controversial issue before the U.S. regulators is whether to order retrofits or an aggressive phaseout of the rail tank cars called DOT-111s. [As early as 1991](#), the NTSB warned the cars were inadequate for flammable materials and were unable to withstand the forces of an accident, even in a train traveling at slow speeds.

There are stronger railroad tank cars in service, but they are used to carry pressurized liquids, like liquefied petroleum gas and chlorine. The DOT-111s, in contrast, have become workhorses hauling a wide range of liquids, from corn syrup and vegetable oil to nonflammable hazardous liquids like caustic soda and liquid fertilizers. And an estimated one-third of them are now carrying cargo that could catch fire.

The DOT-111 problem burst into view on June 19, 2009, when a train hauling ethanol derailed and exploded in Cherry Valley, Illinois, about 75 miles west of Chicago. The blast and fire killed a passenger in one of the cars stopped at the grade crossing, injured seven other people, forced evacuation of 600 homes, and caused \$8 million in damages. Especially haunting: 44-year-old Zoila Tellez died trying to flee, but could not outrun the fireball.

The NTSB determined that railroad operating practices, including problems with track maintenance and inspection programs, caused the accident. But it concluded that the severity of the accident was due to flaws in the DOT-111.

After Cherry Valley, the rail industry adopted a new voluntary standard for the cars. Since 2011, new DOT-111 tank cars have been built with greater puncture resistance, thicker tank material, and improved pressure valves. But after Lac-Mégantic, the rail industry said more improvements were needed.

In a November filing before federal regulators, the Association of American Railroads and the American Short Line and Regional Railroad Association urged that all existing DOT-111 tank cars be retrofitted or quickly phased out. For the new (post-2011) cars, the railroads said proposed improvements—steel jackets, head shields, and top-fitting protections—could cut the risk of an accidental spill in half. For older cars, the rail industry said it would cut the risk by 75 percent.

In a rail industry quirk, it is not the railroads that [own the tank cars](#). The majority of cars are [owned by leasing companies](#), who then lease them to the rail customers—the oil and ethanol industries. The initial cost for an overhaul, then, would fall first on the leasing companies, who would then pass the cost along to the oil and ethanol industries. The Railway Supply Institute, representing railcar builders and leasing companies, estimates retrofitting the fleet would cost more than \$1 billion.

The oil industry has strongly opposed a forced retrofit or phaseout of old DOT-111s. Such a move would "have the broadest-reaching consequences that the rail industry has ever faced," the American Petroleum Institute (API), said in a December filing to regulators.

API argued that the DOT-111s "are safe under normal operating conditions," and regulators should instead focus on railroad maintenance and operation. API noted that broken rails and welds cause the majority of derailments, and that human error also is an important factor. "The best way to limit the impact of a derailment is to prevent a derailment in the first place," said API.

The oil industry group said retrofitting would strain rail repair shops, which it said already are operating at capacity. Forcing at least 50,000 older tank cars

into the shops would have the unintended consequence of backlogging the building of newer cars built to meet the 2011 voluntary standards, the trade group said. (API also argued that the 15,000 or so newer cars should be allowed to stay in service without retrofit, contrary to the rail industry's argument.)

Adding to the logistical challenge of an overhaul, API said, is the fact that many U.S. railroad car manufacturers have gone out of business.

The potential for new safety regulations to bottleneck booming North American crude oil production is a far greater concern for the oil industry than the cost of new tank hardware, observers say. Rail has served as handmaiden to North Dakota's rise to number 2 (behind Texas) among U.S. oil-producing states, getting oil to refineries despite lack of pipeline capacity in the prairie. December figures [show 69 percent of the crude oil](#) from North Dakota's Bakken shale is being sent by rail, up from 28 percent in the spring of 2012. And Bakken oil production has roughly doubled over that time to close to one million barrels per day.

"The implication for upstream production . . . and railcar leasing companies is hard to miss," said Washington, D.C.-based energy policy analyst Kevin Book of Clearview Energy Partners in a report for his clients, also noting oil prices could be affected. "A regulation mandating immediate retrofits or phaseouts has potential to significantly constrain capacity out of the Bakken (where a majority of crude travels by rail), and limit ethanol shipments, too."

It also is a concern for producers in the remote oil sands of Alberta, Canada, who are increasingly turning to rail. In fact, in its environmental impact statement on the controversial proposal for the Keystone XL pipeline linking Alberta producers with Gulf of Mexico refineries, the U.S. State Department concluded that if the pipeline weren't built, the oil would get to market anyway—by train. (See related story and interactive map: "[Keystone XL Pipeline Path Marks New Battle Line in Oklahoma](#)" and "[Keystone XL: Mapping the Flow of Tar Sands Oil.](#)")

### At the Crossroads

A high-stakes regulatory battle affecting the flow of North American oil wasn't on the radar anyone—and certainly not for Barrington, Illinois—in October 2007. That's when the big railroad Canadian National (CN) initiated its purchase of the smaller Elgin, Joliet, and Eastern (EJ&E) railway line that arcs around Chicago from Waukegan, Illinois, to Gary, Indiana. CN's idea was to route trains around the congested city hub. For Barrington, it has meant an increase from three freight trains a day through town to 20.



"The irony is that they moved the traffic from a part of downtown (Chicago) that had a lot of overpasses and underpasses," said Richard Streeter, the Washington, D.C., lawyer representing Barrington and other midwestern rail towns. "That's not the case on the old EJ&E." In fact, the trains travel directly in

the path of cars and trucks at more than 130 at-grade crossings. Barrington and [more than a dozen other communities](#) along the line fought the purchase, raising an array of noise, traffic, and safety issues. But U.S. regulators [approved the deal](#) with the caveat that separations be built at two of the grade crossings.

Four months after CN's purchase of the EJ&E was finalized, the communities were shaken by news of the fatal ethanol train derailment—a CN train on another line—just an hour to the west.

Soon after the NTSB's findings that the DOT-111 contributed to the Cherry Valley tragedy, on April 3, 2012, Barrington and neighboring rail towns, [called the TRAC coalition](#), filed a petition with U.S. safety regulators, seeking an overhaul of the DOT-111 fleet and real-time information sharing with emergency responders on hazardous car contents. Barrington's Darch said not much happened with the request for action, though, until the oil train disaster at Lac-Mégantic.

"That literally was a firestorm that ignited the whole debate again," said Darch, who recently visited the Canadian town to meet and talk to officials who are still grappling with the aftermath. "It really was such a tragedy that it no longer could be ignored, as it had been for over 20 years."

In the fall, the U.S. Transportation Department's Pipeline and Hazardous Materials Safety Administration (PHMSA) started the process of acting on Barrington's proposal and several other long-standing requests for regulatory action on flammable hazards on trains, including four from the NTSB. Even while the agency was accepting comments, two more fiery DOT-111 accidents occurred in North America, on [October 19, in Gainford, Alberta](#), and on November 7, when a shipment of crude oil from North Dakota [derailed in Aliceville, Alabama](#), resulting in a large spill and fire.

Darch said that for towns like Barrington, it will not be enough to have standards for newly built tank cars to be stronger. The older tank cars continue to be a "weak link" that threatens the integrity of all tank cars in an accident, she said.

"The status quo is clearly intolerable for any community that has the misfortune to be on the losing end of fate," said Barrington and the TRAC coalition in their comments filed with PHMSA, likening their plight to "a game of Russian roulette."

"However, it is not the shippers or railroads or leasing companies looking down the barrel of the DOT-111 revolver," they said. "It is the communities that have absolutely no power to get up and walk away from the danger."

*This story is part of a [special series](#) that explores energy issues. For more, visit [The Great Energy Challenge](#).*

**From:** Marilyn Bardet <mjbardet@comcast.net>  
**To:** Amy Million <amillion@ci.benicia.ca.us>, Brad Kilger <bkilger@ci.benicia...>  
**CC:** Rod Sherry <rsherry@csa-engineers.com>, George Oakes <oakes@earthlink.ne...>  
**Date:** 1/18/2014 11:24 PM  
**Subject:** Attorney General's letter on DEIR failure, on WesPac Energy's proposed oil terminal for Pittsburg  
**Attachments:** Ltr to POLLOT 1-15-2014 date revised.pdf

Hello Amy and Brad,

Please add this most important comment letter from Attorney General Kamala Harris, addressed to the City of Pittsburg as lead agent on the proposal by WesPac Energy to build an oil terminal operation at Pittsburg's waterfront. WesPac's intention is to import and export up to 242,000 barrels of North American-sourced crude oil daily, by ship and rail, to serve 5 Bay Area refineries via pipeline, including Valero. The attorney general's letter describes the failure of the WesPac DEIR, whose approval by Pittsburg's planning commission is now appealed to their city council. The appeal hearing is to be held this coming Tuesday, Jan., 21st, at 7 pm at Pittsburg civic center's city hall council chambers.

Thank you,  
Marilyn  
707-745-9094



**KAMALA D. HARRIS**  
Attorney General

State of California  
**DEPARTMENT OF JUSTICE**



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January 15, 2014

**Via U.S. and Electronic Mail**

Kristin V. Pollot  
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Planning Department  
65 Civic Avenue  
Pittsburg, California 94565-3418  
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**RE: Recirculated Environmental Impact Report for the WesPac Pittsburg Energy Infrastructure Project (SCH # 2011072053)**

Dear Ms. Pollot:

Attorney General Kamala D. Harris submits the following comments on the Recirculated Draft Environmental Impact Report (RDEIR) for the WesPac Pittsburg Energy Infrastructure Project (Project).<sup>1</sup> WesPac's proposed \$200 million, 134-acre Project will transform a long-inactive facility into a significant center for the storage, transfer, and transportation of crude oil by rail, pipeline, ship and barge and will bring new sources of crude to the Bay Area for refining. The Project's capacity is massive, with a maximum annual throughput of almost one-fifth of all oil currently processed each year in California.

As set forth below, our review of the RDEIR has revealed some significant legal problems under the California Environmental Quality Act (CEQA). As a threshold matter, the document fails to disclose the sources and analyze the environmental impacts of the new crude. There are a wide range of crudes with different chemical compositions currently available in commerce, and an increasing number of unconventional crudes, such as crudes produced from bitumen sands (so-called "oil sands" or "tar sands"). Different types of crude can have very

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<sup>1</sup> The Attorney General submits these comments pursuant to her independent power and duty to protect the environment and natural resources of the State. (See Cal. Const., art. V, § 13; Gov. Code, §§ 12511, 12600-12612; *D'Amico v. Bd. of Medical Examiners* (1974) 11 Cal.3d 1, 14-15.) This letter is not intended, and should not be construed, as an exhaustive discussion of the RDEIR's compliance with the California Environmental Quality Act.

different types of impacts on such things as local air quality, greenhouse gas emissions, and the risks associated with accidental releases.

This fundamental defect affects the adequacy of the entire document. Because of this and other errors, the RDEIR fails to:

- Adequately disclose and analyze local air quality impacts to the already impacted community of Pittsburg;
- Consider the effects to other Bay Area communities of refining the new crudes;
- Propose and analyze feasible mitigation that could reduce local air quality impacts;
- Adequately disclose and address the risk of accidents that could result from transportation and storage of the new crudes;
- Fully disclose and consider mitigation for the Project's climate change-related impacts; and
- Consider a reasonable range of feasible alternatives that could reduce the Project's significant impacts.

We urge the City of Pittsburg to correct these deficiencies before certifying the RDEIR and approving the Project.

### **Summary of the Project**

WesPac proposes to transform an existing oil storage and transfer facility that has been dormant for 15 years into a major facility with the capacity to receive, store, and transfer almost 20 percent of California's crude oil supply. The proposed Project is next to residential neighborhoods in the City of Pittsburg with no buffer zone and is located within a quarter-mile of a number of sensitive receptors including schools, an extended care facility, a head-start program, three parks, and several churches. The Office of Environmental Health Hazard Assessment has ranked central Pittsburg, the Project area, in the top ten percent of California communities that are already burdened by multiple sources of pollution and experiencing adverse public health effects.<sup>2</sup>

The Project will bring in large volumes of crude oil and partially refined crude oil<sup>3</sup> from unidentified "distant sources"<sup>4</sup> delivered daily by train (100-plus cars long), ocean-going ships, barges, and pipelines. The facility will store the crude in tanks and then transfer it by pipeline to nearby Bay Area facilities (and possibly elsewhere) for refining. Refineries that may receive the

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<sup>2</sup> See <http://oehha.ca.gov/ej/ces11.html> (zip code 94565).

<sup>3</sup> The total annual average throughput for the Project will be approximately 88.3 million barrels per year, with a maximum throughput of over 136 million barrels per year. To put these numbers in context, all the refineries in California currently process well over 700 million barrels of oil annually, with Bay Area refineries processing 276 million barrels annually.

<http://energyalmanac.ca.gov/petroleum/refineries.html>.

<sup>4</sup> RDEIR at p. 1.0-9

crude include the Shell Martinez Refinery in Martinez; the Tesoro Golden Eagle Refinery in Martinez; the Conoco Phillips Refinery in Rodeo; and the Valero Benicia Refinery in Benicia.<sup>5</sup> The Project will operate twenty-four hours per day, seven days per week.

### Comments on RDEIR

#### **The RDEIR fails to disclose and analyze the local air quality impacts to the already impacted community of Pittsburg.**

CEQA mandates that an EIR identify and analyze all potentially significant adverse effects of a project, including, both direct and indirect impacts, short-term and long-term impacts, and growth-inducing impacts. (Pub. Resources Code, § 21100; Cal. Code Regs., tit. 14, §§ 15126, 15126.2.) The RDEIR's discussion of local air quality impacts is deficient in several respects, as set forth below.

#### **The RDEIR understates local air quality impacts.**

The Project's many ships, barges, tugboats, locomotives, process equipment and storage tanks will significantly increase the pollution in the surrounding community. According to the RDEIR, even after implementing the proposed mitigation measures, WesPac will exceed the Bay Area Air Quality Management District's (Air District's) recommended significance thresholds for nitrogen oxide (NOx) and organic compounds that contribute to smog and can exacerbate respiratory problems. The Project will also emit particulate matter, a pollutant that already accounts for more than 90 percent of premature mortality related to air pollution in the Bay Area.<sup>6</sup> Because the Project's estimated particulate emissions are under the Air District's recommended thresholds, the RDEIR concludes that the impacts are less than significant and proposes no mitigation. Further, the RDEIR concludes that Project's incremental cancer risk from localized pollution is 9.5 – meaning that the Project is expected to cause 9.5 excess cases of cancer per one million people exposed in a lifetime due to the operation of the Project. This is just under the Air District's recommended threshold of ten excess cancers. No mitigation is proposed.

The RDEIR's disclosure and analysis of localized air impacts is deficient in at least two important respects. First, there is no discussion of the types of crude that will be transported to and distributed from the facility.<sup>7</sup> Information on crude type, however, is critical to a full and fair analysis of potential impacts to local air quality. The amount and toxicity of air emissions and

<sup>5</sup> RDEIR at p. 2.0-43, Table 2-6. It is not clear whether Chevron's Richmond refinery will receive oil from the Project.

<sup>6</sup> <http://www.baaqmd.gov/Divisions/Planning-and-Research/Particulate-Matter.aspx>.

<sup>7</sup> The rail and marine component of the Project will allow delivery of crude from almost anywhere in the world, including the oil sands of Alberta, Canada. See, e.g., BNSF, Crude-by-Rail presentation (Sept. 2013) at p. 10, available at <http://www.fra.dot.gov/Elib/Document/3436>.

potential releases associated with transporting and storing crude<sup>8</sup> will vary based on the crude's chemical composition, including the contaminants it contains, its sulfur content, and whether it is blended with other chemicals such as diluent (used to make thick crudes like oil sands less viscous and easier to transport).<sup>9</sup> The failure to base local air impacts analysis on the Project's projected crude types causes the RDEIR to "fail[ ] as an informational document[.]" (See *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 89 [holding EIR deficient where the "project description is inconsistent and obscure as to whether the Project enables the Refinery to process heavier crude."])

Second, the RDEIR's emissions estimates for localized air pollutants do not appear to include all aspects of the Project. The RDEIR fails to include all "fugitive" emissions (for example, from leaks in pressurized equipment, pipelines, seals, and valves) and all aspects of transportation that affect local air quality.<sup>10</sup> Third, the RDEIR's pollution projections are based on hypothetical ship, barge, and rail fleets made up of new and efficient models, rather than real-world fleets made up in part of older, less efficient and higher polluting vehicles and vessels.<sup>11</sup> The RDEIR's reliance on hypothetical, cleaner fleets causes it to underestimate the Project's actual emissions.

Underestimating the Project's localized pollution emissions in this case is prejudicial, working against CEQA's informed decision making and public disclosure purposes. For example, even with the identified deficiencies, the RDEIR's estimated cancer risk is very close to the threshold of significance.<sup>12</sup> A relatively small increase in the estimated emissions may well place the Project over the threshold for cancer risk, requiring the City to consider mitigation for this impact, which it has not done in the RDEIR. Before approving the Project, the City must ensure that the environmental document accounts for crude types and includes all sources in estimating the Project's potential impacts to local air quality.

The RDEIR fails to analyze the significance of local air quality impacts on the already overburdened residents of Pittsburg.

In addition, the RDEIR fails to consider whether the Project's contribution to local air pollution is significant given central Pittsburg's existing pollution burdens. The significance of the Project's localized air emissions must be evaluated in context. (Cal. Code Regs., tit. 14, § 15064, subd. (b).) The context of an action or a specific impact may include the sensitivity of

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<sup>8</sup> E.g., releases and spills, fugitive emissions (discussed below), evaporative emissions, and emissions from storage tanks and thermal oxidizers. See Air District comment letter at p. 2.

<sup>9</sup> See, e.g., Crude Oil Material Data Safety Sheets, Keystone XL Pipeline, available at <http://keystonepipeline-xl.state.gov/documents/organization/205570.pdf>. See also comment letter from Natural Resources Defense Council, September 13, 2013, at pp. 8-21.

<sup>10</sup> The Air District noted that it was "unable to verify the potential health risks" from the Project because of defects in quantifying and modeling the Project's emissions. Air District comment letter at pp. 2-3.

<sup>11</sup> See Air District Letter at p. 3.

<sup>12</sup> RDEIR, 4.0-57, Table 4-21.

the environment or of the persons affected; some affected persons may be more vulnerable than the general population (such as children, the elderly, or persons whose health already is compromised). In addition, some of those affected may already be subject to higher pollution burdens and thus more sensitive to even seemingly small incremental increases in that burden. (See *Kings County Farm Bur. v. City of Hanford* (1990) 221 Cal.App.3d 692, 718.) Given that the residents of Pittsburg are already facing some of the highest pollution burdens in California, and, for example, are in the 98<sup>th</sup> percentile for emergency room visits for asthma,<sup>13</sup> the environmental document for this Project must analyze whether adding additional pollution that can contribute to the community's existing public health problems is significant.

**The RDEIR fails to consider the effects to other Bay Area communities of refining the new crudes.**

One of the stated, central purposes of the Project is to replace California and Alaska crude stocks, whose volumes are declining, with new sources of crude oil. (RDEIR at pp. 1.0-2, 1.0-6, 1.0-9.) The RDEIR fails, however, to consider any impacts that may be experienced in the communities receiving and refining the new, high-volume deliveries of unidentified crude.

To comply with CEQA, the environmental document for this Project must evaluate whether there is the potential for new or increased impacts to the communities where the crude oil will be refined due to changes in delivered volume or in the composition of the crude. If, for example, the incoming crude oil requires more energy to refine it, or contains different or higher levels of contaminants than the current mix, there may be higher levels of emissions around the receiving refineries. Such impacts would constitute a "reasonably foreseeable indirect physical change in the environment which may be caused by the project." (See Cal. Code Regs., tit. 14, § 15064; *Muzzy Ranch Co. v. Solano County Airport Land Use Com.* (2007) 41 Cal. 4<sup>th</sup> 372, 387.) The fact that these indirect impacts will be experienced some distance from the Project's footprint is irrelevant. Indeed, "the purpose of CEQA would be undermined if the appropriate governmental agencies went forward without an awareness of the effects a project will have on areas outside of the boundaries of the project area." (*Napa Citizens for Honest Government v. Napa County Bd. of Supervisors* (2001) 91 Cal.App.4th 342, 369.)

**The RDEIR fails to analyze feasible mitigation that could reduce local air quality impacts.**

Under CEQA, "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects...." (Pub. Resources Code, § 21002; *Mountain Lion Foundation v. Fish and Game Com.* (1997) 16 Cal.4<sup>th</sup> 105, 134.) By the RDEIR's own estimates,<sup>14</sup> localized air emissions from both construction and direct operations will exceed the Air District's significance thresholds for nitrogen oxides and organic compounds that result in smog. But the RDEIR's proposed mitigation measures fall far short.

<sup>13</sup> See CalEnviroScreen, <http://oehha.ca.gov/ej/ces11.html>.

<sup>14</sup> As noted above, the RDEIR may substantially underestimate local air emissions.

The RDEIR proposes to “offset” certain aspects of the Project’s local air pollution by buying or using credits previously earned for reducing emissions elsewhere (emissions reduction credits) rather than implementing on-site mitigation measures. While offsets might reduce air pollution in California or the general region (depending on where actual reductions take place), they will not reduce the localized air pollution impacts in the community where the Project is located. Stated simply, the mitigation does not match the impact. To address the specific local impacts identified, CEQA requires that the RDEIR analyze – and the Project should be required to achieve – all feasible emission reductions of localized air pollutant on-site first.

For instance, on-site mitigation could include requiring dock electrification (which can reduce emissions from marine vessels running their auxiliary engines), minimizing the idling time of diesel-powered construction equipment, prohibiting diesel generators where access to the electrical grid is available, and requiring all equipment meet at least the Tier II engine standard or be fitted with diesel particulate filters if Tier II engines are not available. Additional components of the Project, including the rail elements, could be electrified, and there may be additional process efficiencies that should be considered. The City should also consider whether creating a buffer around the Project, planting vegetation or creating other physical screens, or subsidizing the installation of air filters in the community could reduce air impacts. Further, the City should develop its suite of feasible mitigation measures in a process that is accessible to the public and the affected community. “Fundamentally, the development of mitigation measures, as envisioned by CEQA, is not meant to be a bilateral negotiation between a project proponent and the lead agency after project approval; but rather, an open process that also involves other interested agencies and the public.” (*Communities for a Better Environment, supra*, 184 Cal.App.4th at p. 93.)

**The RDEIR fails to adequately disclose and address the risk of accidents that could result from transportation, storage, and refining of the new crudes.**

The RDEIR states that the Project’s potential to “[c]reate a hazard to the public or environment through reasonably foreseeable upset or accident conditions involving the release of a hazardous material to the environment” is “[s]ignificant and unavoidable.”<sup>15</sup> This conclusion requires that the City discuss the risk in order to fashion appropriate mitigation measures to reduce the likelihood of accident in all phases of the operation, and increase the probability of an effective response should an accident occur. The RDEIR fails on both counts.

Because the RDEIR fails to identify the types of crude oil that will be handled at the facility, it necessarily also fails to identify the varied risks associated with transporting, storing, and refining these crudes. For instance, higher acid and/or sulfur content in a crude may increase the risk of corrosion to refinery equipment and pipes, which in turn can lead to leaks, explosion or fire.<sup>16</sup> Further, crudes and crude mixtures with a lower flash point present a greater risk of

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<sup>15</sup> RDEIR 10.0-31.

<sup>16</sup> Pipe corrosion contributed to the August 6, 2012 explosion and fire at Chevron’s Richmond refinery. See <http://www.dir.ca.gov/DIRNews/2013/IR2013-06.html>. Further, the Federal Railroad Administration has expressed concern about an increasing number of severe corrosion incidents and has noted that “[a] possible cause is contamination of the crude oil by materials

(continued...)

explosion and fire<sup>17</sup> And certain types of crudes can be more challenging to contain and clean up in the event of an accidental release.<sup>18</sup> The National Oceanographic and Atmospheric Administration notes that “knowledge about the chemical properties and behavior of tar sands products during a marine spill is limited” and that “[t]hese gaps in information make effective spill planning and response more difficult ....”<sup>19</sup>

To ensure that the Project’s risks are adequately disclosed and that there is sufficient information to design tailored mitigation and accident response plans, the EIR for this Project must provide additional, detailed information about the new sources of crude, their chemical compositions, and the risks associated with their transportation, storage, and refining.

In addition, as of the date of the RDEIR, it appears that the City had failed to engage key agencies that will have essential roles in the event of an accident or threat of release. For example, the RDEIR states that the facility will not require any extra fire services and that the Contra Costa County Fire Protection District (“Fire District”) is fully capable of providing any required emergency services.<sup>20</sup> The Fire District, however, submitted a comment letter stating that it does not have an adequate number of personnel to properly respond to a fire incident at this facility or the necessary equipment/material such as industrial foam firefighting apparatus to handle a large-scale fire.<sup>21</sup> Moreover, there is nothing in the RDEIR demonstrating that the Project applicant or the City has actively engaged the California Department of Fish and Wildlife’s Office of Spill Prevention and Response (OSPR), the State’s lead agency for marine and off-highway oil spill prevention, response, and natural resource restoration, to ensure that OSPR has all the information it requires and is prepared and able to respond in case of a spill related to the Project.

Before this Project is approved, to ensure a full disclosure of the Project’s risks and an adequate analysis of specific, enforceable mitigation, the City and WesPac must work with all

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(...continued)

used in the fracturing process that are corrosive to the [rail] tank car tank and service equipment.” See <http://www.fra.dot.gov/eLib/details/L04717>.

<sup>17</sup> See <http://www.tsb.gc.ca/eng/medias-media/communiques/rail/2013/r13d0054-20130911.asp> (Canadian Transportation Board analysis of July 6, 2013 derailment and explosion in Lac-Mégantic, Quebec).

<sup>18</sup> A 2010 pipeline leak near Marshall, Michigan released an estimated at 843,000 gallons of tar sands oil. Substantial amounts of the oil remain on the river bottom to this day, and cleanup continues. See <http://www.epa.gov/enbridgespill/>.

<sup>19</sup> <http://response.restoration.noaa.gov/about/media/what-are-increased-risks-transporting-tar-sands-oil.html>.

<sup>20</sup> RDEIR at pp. 10.0-62-63.

<sup>21</sup> Troublingly, it appears that the RDEIR does not examine the adequacy of response to certain large-scale incidents that, while they may have a low probability, could have catastrophic consequences. For example, it does not consider the possibility of a major release with fire, a complete tank failure, or a rail spill that involves more than one rail car. RDEIR at pp. 10.0-41-42; 10.0-55-56; 10.0-61. Without explanation, it also fails to consider the possibility of derailment outside of Contra Costa County. RDEIR at p. 10.0-56.

relevant response agencies, including those listed above, to develop a detailed, enforceable, and fully funded response plan for its facility and other areas where crude could be released.

**The RDEIR fails to fully disclose and consider mitigation for the Project's climate change-related impacts.**

The RDEIR calculates the Project's greenhouse gas emissions at over 35,000 metric tons per year, concludes that the Project's climate change impacts are significant, and summarily asserts that *no* mitigation measures are available to reduce the GHG emissions from the Project. The RDEIR does not explain why no mitigation measures are available or even what mitigation measures were considered and rejected. There are a number of problems with the RDEIR's analysis.

The Project may substantially underestimate greenhouse gas emissions by not, for example, basing calculations on the expected crude mix<sup>22</sup> and on the current and projected fleets for barges, ships, ground equipment and rail. In addition, it is unclear why the RDEIR considers greenhouse gas emissions for rail operations only within Contra Costa County, and considers only those emissions from marine tankers that occur within 54 nautical miles of the Project.<sup>23</sup> Unlike localized air emissions, greenhouse gases are global pollutants that have effects worldwide and in California regardless of where the emissions occur. If the Project is causing new rail and vessel traffic resulting in additional greenhouse gas emissions, this would appear to be a growth-inducing aspect of the Project that should at the very least be disclosed in the document.

The RDEIR also errs in jumping to the conclusion that the Project's impacts related to climate change are significant and unavoidable, without conducting the analysis of *why* this is the case. (*Keep Berkeley Jets Over the Bay Com. v. Board of Port Comrs.* (2001) 91 Cal.App.4th 1344, 1371 [holding that "simply labeling the impact 'significant' without accompanying analysis" violates "the environmental assessment requirements of CEQA."]) For this particular long-term infrastructure investment Project, the question of the Project's significance may turn less on the precise volume of greenhouse gases that will be emitted, and more on how the Project is or is not consistent with the State's energy and climate objectives.

The RDEIR states that the Project is needed to ensure reliable sources of transportation fuels for California, citing the California Energy Commission's 2009 Integrated Energy Policy Report, and asserts that demands for crude oil in California are increasing as a result of increasing vehicle miles traveled. (RDEIR at pp. 1.0-3, 1.0-6.) But the 2009 report, based on 2008 data, is significantly outdated. The California Energy Commission published a superseding 2011 Energy Policy Report and a 2012 update, and recently issued its final 2013 Integrated Energy Policy Report. These more recent documents show that conditions relating to traditional vehicle fuels have changed substantially in recent years, due in part to policies and laws designed

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<sup>22</sup> See Congressional Reporting Service, Canadian Oil Sands: Life-Cycle Assessments of Greenhouse Gas Emissions, Richard K. Lattanzio (March 15, 2013), Summary, available at [www.fas.org/sgp/crs/misc/R42537.pdf](http://www.fas.org/sgp/crs/misc/R42537.pdf).

<sup>23</sup> RDEIR at pp. 5.0-10; 4.0-36.

to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHG emissions from the transportation sector, and reduce vehicle miles traveled.<sup>24</sup>

The RDEIR also fails to note and address the numerous state laws and policies specifically designed to reduce the need for conventional, high-carbon transportation fuels. These include California's Low Carbon Fuel Standard Program, its Zero Emission Vehicle Program, and the Sustainable Communities Strategies Act (SB 375), whose purpose is to reduce vehicle miles traveled. It is the State's goal to "transform[ ] personal transportation so that virtually all vehicles in the state are zero-emission by 2050, and ultimately reducing transportation sector greenhouse gas emissions by 80 percent below 1990 levels."<sup>25</sup> The revised EIR should include evidence and analysis addressing whether and how this Project meets any interim need as the State transitions to low- and zero-carbon transportation fuels and to renewable energy sources – changes that are essential to meeting of the State's objective to reduce California's greenhouse gas emissions to 80% below their 1990 levels by 2050 in order to reduce the risk of dangerous climate change.<sup>26</sup>

In addition, it is simply not plausible that there are *no* feasible mitigation measures that could reduce the Project's greenhouse gas emissions. The CEQA Guidelines set out examples of potential measures, including off-site mitigation<sup>27</sup> and energy conservation. (Cal. Code Regs., tit. 14, § 15126.4, subd. (c); see also Appendix F to the CEQA Guidelines, addressing energy conservation.) In addition, the document should discuss the possibility of requiring minimum standards for the marine vessels and rail engines servicing the Project, dock electrification, and potential electrification of other aspects of the Project that could reduce the use of fuels with higher carbon intensities. The Final EIR must consider these and any other feasible mitigation measures that could apply to this Project.

**The RDEIR fails to consider a reasonable range of feasible alternatives that could reduce the Project's significant impacts.**

One of the "core" requirements of an EIR is an adequate consideration of alternatives. (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564.) Under CEQA, an EIR must "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." (Cal. Code Regs., tit. 14, § 15126.6, subd. (a).)

<sup>24</sup> 2013 Integrated Energy Policy Report - Final Lead Commissioner Report, available at [http://www.energy.ca.gov/2013\\_energypolicy/](http://www.energy.ca.gov/2013_energypolicy/). See, e.g., *id.* at pp. 192 and 229.

<sup>25</sup> California Energy Commission, Integrated Energy Policy Report, 2012 Update, at p. 61, available at [http://www.energy.ca.gov/2012\\_energypolicy/index.html](http://www.energy.ca.gov/2012_energypolicy/index.html).

<sup>26</sup> This deficiency is also present in the RDEIR's statement of "Purpose and Need" beginning at p. 1.0-6.

<sup>27</sup> Off-site mitigation for greenhouse gas emissions may be appropriate where reductions outside the facility can reduce climate change impacts as effectively as on-site mitigation.

The RDEIR is fundamentally defective because it considered only *one* action alternative: a version of the Project that reduces storage capacity by 18%. (The reduced capacity alternative would create a slight buffer zone between single family residences adjacent to some of the storage tanks but is otherwise very similar to the proposed Project.) There are other feasible alternatives that the City could have considered. For example, the City summarily rejected an alternative that would utilize docks and storage tanks at existing refineries. It cited the 2009 California Energy Commission report, which the City believes supports its view that existing “facilities are currently at or near capacity, resulting in a need for additional marine terminal and storage capacity infrastructure.”<sup>28</sup> Based on current trends, however, it is possible that there is sufficient infrastructure to meet the State’s need for imported oil; if this is the case, then smaller, dispersed upgrades to existing facilities in the Bay Area and elsewhere could in fact be sufficient. Another alternative might be to remove the Project’s rail terminal component (which was only recently added) and rely on an electrified marine terminal and pipelines. In a revised document, the City must consider a full range of alternatives that could meet most of the Project’s objectives.

– continued –

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<sup>28</sup> RDEIR at 2.0-138.

Kristin V. Pollot  
January 15, 2014  
Page 11

### Conclusion

We urge the City of Pittsburg to substantially revise the environmental document for this Project so that it will fully inform the public and the City Council of the impacts of this Project to the residents of Pittsburg, to the other Bay Area communities that will refine the incoming crude, and to the State as we transition to a low-carbon economy and make long-term infrastructure investments.

We appreciate your consideration and would be happy to answer any question you might have about our comments.

Sincerely,



JANILL L. RICHARDS  
Supervising Deputy Attorney General  
ROSE B. FUA  
Deputy Attorney General

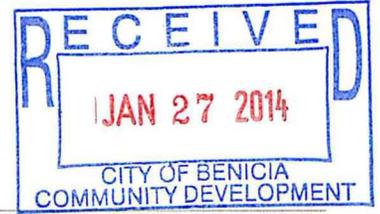
For KAMALA D. HARRIS  
Attorney General

cc: Ken Alex, Director, Governor's Office of Planning and Research  
Thomas Gibson, General Counsel, Department of Fish and Wildlife  
Michael Levy, Chief Council, California Energy Commission

**Amy Million - Tar Sands**

---

**From:** David Jenkins <norcaltruck@sbcglobal.net>  
**To:** "amillion@ci.benicia.ca.us" <amillion@ci.benicia.ca.us>  
**Date:** 1/20/2014 11:42 AM  
**Subject:** Tar Sands  
**CC:** "rogrmail@gmail.com" <rogrmail@gmail.com>



<http://surfgreatlakes.wordpress.com/2014/01/19/breaking-oil-leak-on-massive-pipeline-pushing-tar-sands-through-the-great-lakes/>

Please take a look at this article on a recent development of major proportion . This is what we in Benicia could be faced with if Valero is allowed to move tar sands openly through our community . The environmental impact could be monumental ! Please remember this is only one of many accidents the pipelines , railroads and shipping users have encountered . It is conceivable that the pristine area we share could be damaged beyond repair .

I hope this encourages all to give careful consideration to the upcoming EIR report and the possible release of a permit to accommodate Valero to do what may become a major problem for our wonderful landscape and air quality !

Please pass this on to who ever you think would be interested .

Sincerely

David Jenkins

David Jenkins  
owner  
[1 707 748 4498](tel:17077484498)  
fax [1 925 520 4892](tel:19255204892)

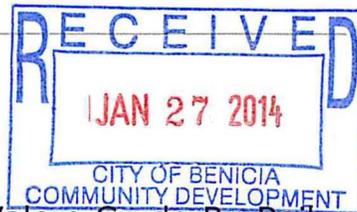
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**Amy Million - "More Crude Spilled in 2013 Than Previous Four Decades Combined"**

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**From:** Marilyn Bardet <mjbardet@comcast.net>  
**To:** Amy Million <amillion@ci.benicia.ca.us>, Brad Kilger <Brad.Kilger@ci.ben...>  
**Date:** 1/21/2014 10:33 PM  
**Subject:** "More Crude Spilled in 2013 Than Previous Four Decades Combined"  
**CC:** Rod Sherry <rsherry@csa-engineers.com>, George Oakes <oakes@earthlink.ne...>  
**Attachments:** \_h353\_w628\_m6\_otrue\_lfalse.jpg

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Hello Amy and Brad,

Please add the following article to the public legal record on Valero Crude-By-Rail Project and for its DEIR review.

Today it was made clear at the Contra Costa County Board of Supervisors appeal hearing on Phillips66 Propane Recovery Project FEIR, that cumulative impacts from increases in rail transport of hazardous fossil fuels puts enormous pressure on counties and cities to plan coherently for significant, catastrophic accidents – with all the facts pertinent to the types of unconventional crude oil and other explosive gases being transported by rail, especially given the increases in such freight AND passenger transport that are expected in the region. [See Solano Transportation Authority report from 2012; also, Contra Costa County Northern Waterfront Development Initiative.] Contra Costa Supervisor Mary Piepho, who also sits on the board for the Air District, advised that CC County does not currently have sufficient fire protection services, for example. Ms Piepho, along with Supervisor John Gioia, also cited The Air District's letter, sent for the appeal and dated Jan. 14th, saying that the FEIR's emissions statistics need to be verified before the FEIR can be accepted. The hearing was continued for 60 days...

Both the Air District's letter and The Attorney General's letter sent to Pittsburg Planning Dept on the WesPac Energy oil terminal project, point out the insufficiency of information provided by the respective EIRs discussed: on types of crude to be imported and exported, cumulative air emissions, and emergency response.

Under CEQA, the Valero Crude-By-Rail project cannot be judged in isolation from these neighboring energy projects and their potential cumulative impacts from emissions, transport accidents, spills, fires and explosions–indirect impacts that can be reasonably foreseen given the recent history of catastrophic derailments and spills that cause immense ecologic damage.

Thank you,  
Marilyn  
[707-745-9094](tel:707-745-9094)

Published on Tuesday, January 21, 2014 by [Common Dreams](#)

## More Crude Spilled in 2013 Than Previous Four Decades Combined

- Jacob Chamberlain, staff writer



Fireball goes up at the site of an oil train derailment in Casselton, N.D., Dec. 30, 2013  
(Associated Press/Bruce Crummy)

More crude oil spilled from train accidents in 2013 alone than in the previous four decades combined—an alarming number [reported by McClatchy News on Monday](#) that points towards a drastic shift in the highly toxic, yet growing, crude oil business to rail transport.

According to data from the Pipeline and Hazardous Materials Safety Administration, in the four decades that such records have been taken between 1975 to 2012, U.S. rail spilled a combined 800,000 gallons of crude oil. This pales in comparison to the damage done in the 12 months of 2013, in which 1.15 million gallons of crude oil was spilled.

In total, U.S. railroads shipped 400,000 carloads of crude oil in 2013, or over 11.5 billion gallons.

"The spike underscores new concerns about the safety of such shipments as rail has become the preferred mode for oil producers amid a North American energy boom," *McClatchy* reports.

The report does not include, however, derailments in Canada of trains that originated in from the Bakken shale fields of North Dakota, such as [one incident in Lac-Mégantic, Quebec](#), on July 6, when a runaway train derailed and exploded, killing 47 people and spilling more than 1.5 million gallons of crude oil alone.

Also not included in the report [is a derailment near Casselton, N.D.](#) on Dec. 30 in which an estimated 400,000 gallons of crude oil were spilled and the town of Casselton was forced to evacuate.

In lieu of a recent series of these explosive train derailments originating from the Bakken shale fields, the federal government [issued a warning this month](#) saying that Bakken crude is "more flammable than traditional heavy crude oil."

In the latest in the series of crude derailments, on Monday [a freight train carrying crude oil derailed](#) on a bridge in Philadelphia, Pennsylvania. No leaks or injuries were reported in the derailment, which occurred near the Schuylkill River.

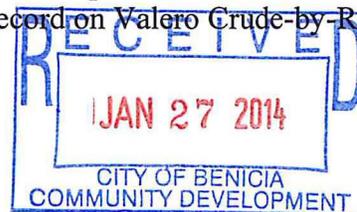
## Amy Million - Train derails outside Philly leaves Crude Oil Car Dangling Over Schuylkill River

**From:** Marilyn Bardet <mjbardet@comcast.net>  
**To:** Amy Million <amillion@ci.benicia.ca.us>, Brad Kilger <bkilger@ci.benicia...>  
**Date:** 1/22/2014 10:32 AM  
**Subject:** Train derails outside Philly leaves Crude Oil Car Dangling Over Schuylkill River  
**CC:** Rod Sherry <rsherry@csa-engineers.com>, George Oakes <oakes@earthlink.ne...>  
**Attachments:** Schuylkill+River+Train+Derail6.jpg

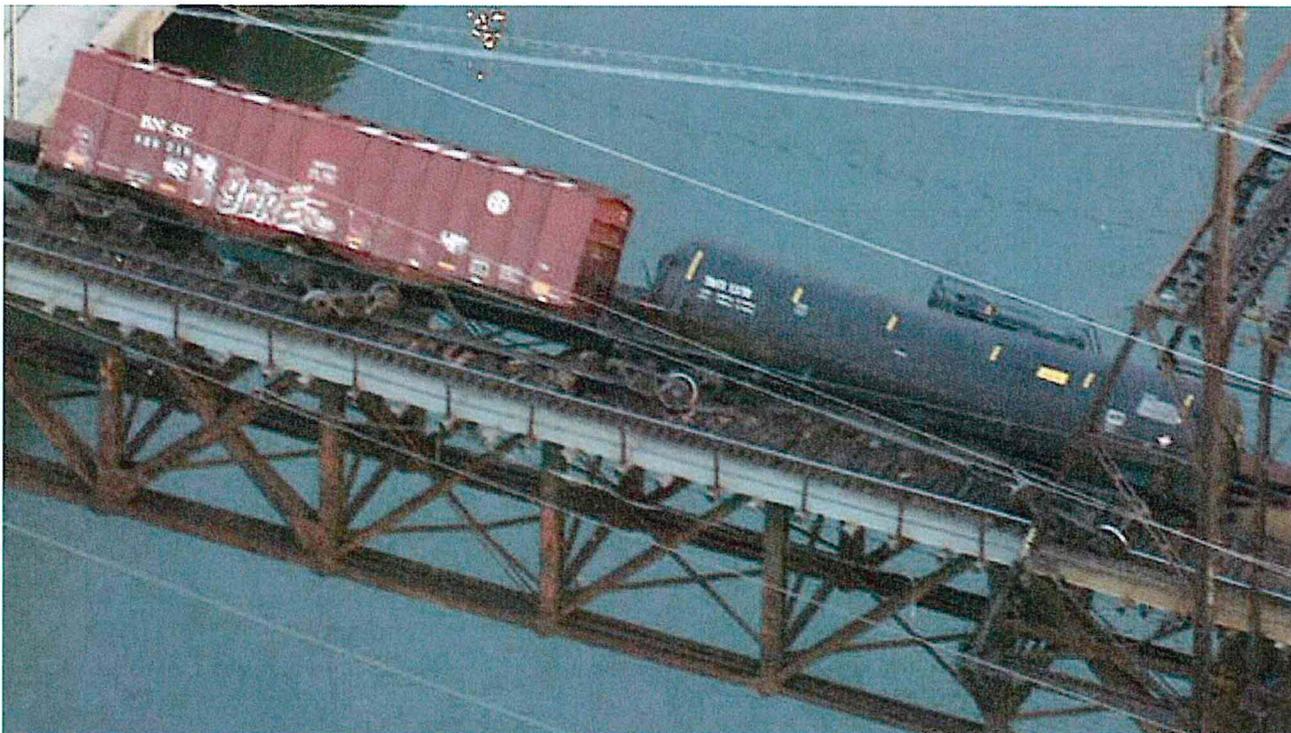
Hello Amy and Brad,

The evidence mounts. Another derailment that could have polluted the Schuylkill River and blown a bridge and surrounding area if Bakken had leaked from the dangling tanker car pictured here. There are two articles below on this accident. Please add them to the public legal record on Valero Crude-by-Rail.

Thank you,  
Marilyn  
[707-745-9094](tel:707-745-9094)



[Close Call on Philly Oil Train Derailment Fuels Debate | NBC 10 Philadelphia](#)



Seven cars of a CSX freight train derailed on a bridge that spans the Schuylkill River and I-76. Six cars are carrying crude oil and another is carrying sand. None are leaking.

It could be a few more days before crews finish clearing derailed train cars — including crude oil tankers — from a bridge over the Schuylkill River in Philadelphia.

After a string of more serious rail accidents involving crude oil in other parts of the country, the incident has amplified local concerns about safety.

It was one of several trains that bring tens of thousands of barrels of crude oil from North Dakota to a refinery in South Philadelphia every week.

The cause of the derailment is still being investigated, but Philadelphia Mayor Michael Nutter says for now, the city is safe.

## RELATED STORIES

- [Train Derails on City Bridge](#)
- [Derailed Cars Could Take Days to Remove](#)
- [Concerns Over Flammable Oil in Derailed Train](#)

"For us at least, derailments are fairly uncommon, but I'm sure there's always something that we can take a look at or focus on," Nutter said. "You can never be too cautious or too careful, so we'll see what comes out of this investigation."

However, there are others who say Philadelphia dodged a major bullet.

"We came within a hair's breadth of a calamity in Philadelphia," said Democratic gubernatorial candidate John Hanger. He has joined the chorus of environmental groups and local lawmakers calling for more information as shipments of crude oil continue to roll through populous areas in Southeast Pennsylvania.

Seven of the train's 101 cars slid off the tracks, but remained intact. Some of the cars are still leaning across the bridge over the Schuylkill River.

Hanger says Philadelphia was lucky compared to other communities where derailments have resulted in explosions

"People's lives are at risk. That's the bottom line. People's lives are at risk," he said.

He wants Gov. Tom Corbett to hold an emergency meeting with lawmakers, the railroads and the oil industry.

Hanger and others are pushing to replace current tank cars with ones less likely to rupture during an accident.

*This story is reported through a partnership between [NBC10.com](#) and [NewsWorks.org](#).*

\*\*\*\*\*

[Train Derailment In Philadelphia Leaves Crude Oil Car Dangling Over Schuylkill River | ThinkProgress](#)

# CLIMATEPROGRESS

## Train Derailment In Philadelphia Leaves Crude Oil Car Dangling Over Schuylkill River

BY [EMILY ATKIN](#) ON JANUARY 21, 2014 AT 1:08 PM



Two CSX train cars, one carrying crude oil, lean over a bridge in Philadelphia on Jan. 20.

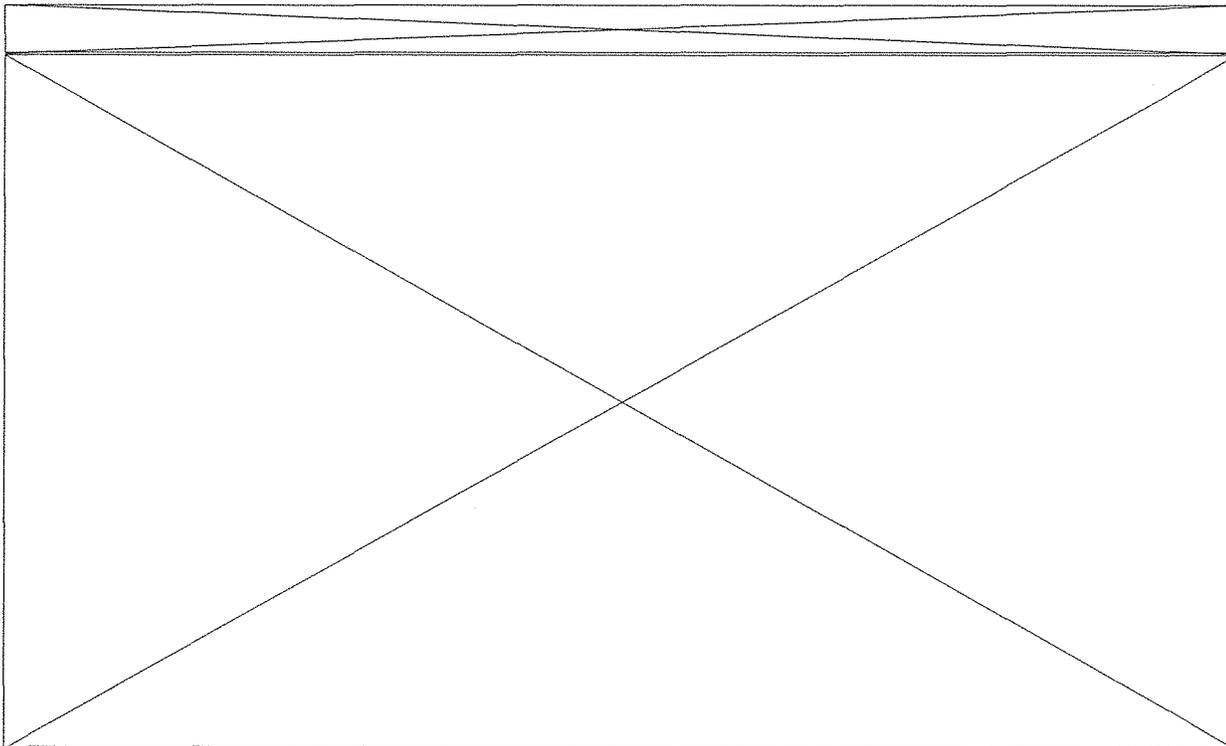
CREDIT: NBC PHILADELPHIA

A tanker of crude oil and a boxcar of sand “nearly toppled” over a bridge in Philadelphia on Monday

after a freight train owned by CSX Corp. derailed, according to local media reports.

A total of seven cars from the 101-car freight train from Chicago derailed on the Schuylkill Arsenal Railroad Bridge at around 1 a.m. Monday, though the cause of the accident is not yet known. Six of the derailed cars contained crude oil, though no leaking was reported. A team of Coast Guard pollution responders was on scene, and CSX said it was working to clear the derailment “in a way that is safe and environmentally responsible.”

As of Tuesday, workers were still attempting to get the leaning sand car and oil tanker off the bridge, using a crane to tilt the cars back into their upright positions. Representatives for CSX said the removal of all the cars could take up to two days.



“This is unacceptable,” Philadelphia councilman Kenyatta Johnson told NBC News, demanding answers on what caused the accident and calling out CSX for a lack of transparency. “We’re going to be calling for hearings in the city of Philadelphia asking specifically for CSX to tell the city of Philadelphia how they are maintaining their bridges, and how they are maintaining their railways. They should assure the city of Philadelphia that their infrastructure is safe.”

The practice of transporting crude oil by rail has boomed in the last year, with most of the uptick in oil shipments coming from North Dakota’s Bakken Shale. A top official at North Dakota’s Mineral Resources Department said last month that as much as 90 percent of the state’s crude will move by freight rail in 2014, just one day before announcing record oil production of almost 1 million barrels per day — or

approximately 5 percent of total U.S. oil consumption. A million barrels a day is more than the capacity of the controversial Keystone XL pipeline, which would transport 830,000 barrels per day.

Most of the oil shipped by CSX is crude from the Bakken, as CSX Vice President of Public Safety Skip Elliott confirmed to Climate Progress last week.

With that increase in oil shipped by rail, more than 1.15 million gallons of crude oil was spilled from rail cars in 2013, according to recent data from the Pipeline and Hazardous Materials Safety Administration (PHMSA). The amount spilled in 2013 is more than in the last four decades combined. PHMSA is also currently investigating whether oil from the Bakken shale is more explosive than other types of oil, possibly due to the fact that chemicals from the hydraulic fracturing process are mixing with the oil.

Meanwhile, a proposal to let CSX run trains carrying crude oil from the Bakken through an open trench in southeast D.C. is stirring controversy, with residents citing accidents like the one in Philadelphia as reason to toss the proposal.

*Tags:*

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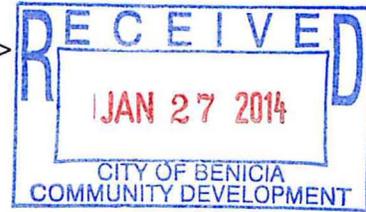
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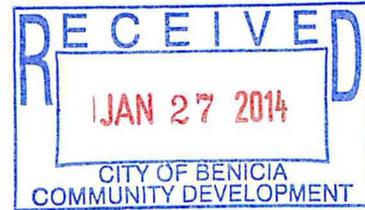
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**CC:** Rod Sherry <rsherry@csa-engineers.com>, George Oakes <oakes@earthlink.ne...>  
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Hello Amy and Brad,

Please add this article to the legal public record on Valero CBR project, for its upcoming CEQA review.

Thank you,  
 Marilyn  
 707-745-9094



[Oil Train Crash Could Cause 'Major Loss Of Life.' NTSB Warns](#)



## Oil Train Crash Could Cause 'Major Loss Of Life,' NTSB Warns

By Joan Lowy 01/23/14 11:55 AM ET EST **AP**

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WASHINGTON (AP) — Federal accident investigators are warning that a "major loss of life" could result from an accident involving the increasing use of trains to transport large amounts of crude oil. They recommend a series of safety measures.

The National Transportation Safety Board took the unusual step of issuing its recommendations jointly with the Transportation Safety Board of Canada.

Last month an oil train derailed and exploded near Casselton, N.D. In July, a runaway oil train derailed and exploded in Lac-Megantic, Quebec. Forty-seven people were incinerated and 30 buildings destroyed.

The recommendations include planning routes for hazardous materials trains to avoid populated and other sensitive areas. Also recommended are stronger efforts to ensure hazardous cargo is properly classified before shipment.