

**Asian Pacific Environmental Network
BlueGreen Alliance
Communities for a Better Environment
Labor Occupational Health Program, UC Berkeley
Natural Resources Defense Council
United Steelworkers International and Local 5**

BY ELECTRONIC MAIL

13 June 2013

Jack Broadbent, Executive Officer
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

Attention: Brian Bateman, Jim Karas, Wayne Kino, Jean Roggenkamp,
Ana Sandoval, Jim Smith, and Eric Stevenson

**Re: Bay Area Air Quality Management District Proposed Regulation 12, Rule 15;
March 2013 Preliminary Draft Petroleum Refining Emissions Tracking Rule**

Dear Executive Officer Broadbent,

Our labor-community collaborative writes in support of the preliminary draft refinery emission tracking rule released in March 2013 and suggests specific proposals to improve the rule that, we believe, should be considered at this time. The Collaborative is focused on addressing critical safety and health concerns shared by refinery workers and residents in the Bay Area. Our members include the Asian Pacific Environmental Network, the BlueGreen Alliance, Communities for a Better Environment, the Labor Occupational Health Program at UC Berkeley, the Natural Resources Defense Council, and the United Steelworkers Union International and Local 5.

We were pleased to see the preliminary draft rule released in March, following the October 2012 concept paper. Our Collaborative participated actively in the three workshops held the week of April 22nd. Generally, we are very supportive of this new Bay Area Air Quality Management District (“Air District”) regulatory effort that would apply to all Bay Area oil refineries and would, for the first time, address all emissions from each refinery comprehensively, and all potential causal factors that can increase emissions, including changes in oil feedstock quality. However, it is imperative that the Air District take a more pro-active approach, seeking to prevent emission increases. Below we provide comments on the preliminary draft, expanding on our 27 February 2013 letter (attached here for reference) and we recommend several approaches to actively prevent refinery emission increases as part of this rule.

General Comments

Generally, we support many aspects of the preliminary draft rule including the following.

Pollutant Coverage: We support the Air District’s proposal to address all types of emissions, consistent with our February 2013 recommendations. In particular, the inclusion of Toxic Air Contaminants (TACs) along with criteria pollutants is important to ensure adequate health protection. For example, hydrogen sulfide, a TAC, is a key pollutant of concern. We look forward to working with Air District Staff to better define “trigger levels”

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that identify a significant emissions increase. *As a next step, we suggest that the Air District should provide illustrative scenarios to explain to the public how this approach would work by example.*

Source Coverage: We support the proposed scope of the regulation in the preliminary draft, with the understanding that the intent is to assess and control total refinery wide emissions. It is important that co-located units, such as hydrogen plants that are essential to refinery operations, be included within refinery operations considered.

Annual Emission Inventory Reporting: We support comprehensive annual reporting. In addition, while a calendar year approach to routine emission reporting is appropriate, *we recommend additional tracking on a shorter-term basis to protect communities from short-term spikes in air pollution.*

Baseline Emissions Determination: We support documenting current emission rates accurately and agree that such “baseline” emissions should be updated and adjusted each year to account for any new regulations or requirements. However, a ten year look-back period appears far too long for purposes of establishing a baseline. Some emissions have decreased significantly over the past decade; thus, a baseline period that long could negate that progress. *Each refinery should use the previous year as a baseline unless significant changes in business, such as production levels, can be documented so that 3 years prior could be used to inform the baseline emissions.*

Emission Reduction Plans: As noted above, we are very supportive of the inclusion of changes in crude slates in the causal analysis of any emission increase. This is paramount for addressing not only standard operating emission increases but also those from refinery incidents and upsets. We are concerned, however, that the consequences for refineries that fail to mitigate increased emissions are not meaningful. For example, the draft provides that a facility that fails to identify sufficient mitigation for two years after exceeding its baseline then does an audit to find measures that are “capable of being accomplished in a successful manner within a reasonable period of time.” We are concerned that this kind of subjective language could allow lengthy delays in curbing increasing emissions. *In order to invoke the prospect of penalties for noncompliance more effectively, we recommend making baseline emissions an explicit emissions limit for each facility.*

Air Monitoring: We strongly support requirements for comprehensive, reliable and transparent emission, fence-line and community air monitoring and reporting, and look forward to more detailed development of these provisions.

Specific Comments

In addition to the general comments above, we propose two related structural additions to implement our previous recommendation for a proactive, preventive approach in this rule.¹ The first element ensures protection from preventable feedstock-related impacts, while the second ensures air quality improvements over time.

¹ See our 27 February 2013 letter, attached hereto, especially the fourth recommendation on page 3.

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Recommendation to Ensure Prevention of Feedstock-Related Emissions Increase.

We recommend monitoring, reporting and documentation of refinery oil feedstock, the full range of potential emission impacts from feedstock changes, and the measures taken to ensure that such potential impacts will be prevented when feasible. This reporting and documentation should be transparent, meaning that information including raw data and summary data is made available to the public in easily accessible format for independent verification of analyses and conclusions. Specifically,

To prevent new harm from feedstock-related emission increases, each refinery would be required to monitor and report its oil feedstock, and any proposed equipment change related to enabling a change in feedstock quantity or quality. Any proposed change in equipment related to enabling the refining of more oil, lower quality oil, or both, or any actual worsening of oil quality or increase in total oil throughput or both, would trigger a requirement to demonstrate that:

- the change in oil quantity, quality, or both (of the blend, or “slate,” of oils refined) will not increase incident emission risk;²
- the change in oil quantity, quality, or both will not increase routine emissions of any pollutant; *and*
- the change in oil quantity, quality, or both will not use up any emission reduction measure that is needed to reduce the refinery’s ongoing emission of any pollutant that currently causes or contributes to air quality or environmental health harm.

Refiners would bear the burden of making each of these three demonstrations. The Air District would bear the burden of ensuring transparent reporting and third-party verification through an independent community/worker oversight board that selects and oversees experts. Refiners would bear the burden of funding this independent verification (the independent oversight board and the experts it selects).

Non reporting consequences: Non reporting must not be allowed to defeat prevention. Equipment changes enabling the refining of more oil, lower quality oil, or both that are not reported before installation (1) cannot be considered in a feasibility analysis as a reason for failure to return to baseline emissions, (2) trigger all required demonstrations retroactively, and (3) require refiner-financed Air District monitoring in place of self-monitoring.

Recommendation to Ensure Continuous Air Quality Improvement.

Fence line communities around refineries continue to suffer from refinery air pollution and related health impacts, and projections of future refinery emissions show no improvement. Active goals to limit and reduce emissions, through this rule, will not only address the ongoing health hazards but also will make backsliding or increases triggering retroactive mitigation plans less likely. Accordingly, we recommend requiring that refineries

² We anticipate that this would be demonstrated through a Process Hazard Analysis or similar documented, verifiable analysis.

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decrease their emissions of pollutants that currently harm environmental health over time. Specifically,

To reduce ongoing harm by ensuring continuous air quality improvement through gradual and feasible reductions in emissions of pollutants that are known to cause or contribute to environmental health risk, an emission limit would be applied to each refinery's facility-wide emissions of selected pollutants so that the refinery could choose to:

- reduce emissions 20% below the refinery's baseline by 2020, showing adequate incremental progress each year; *or*
- install the best available emissions control technology refinery wide (i.e., eliminate "grandfathered" and "non-BACT" sources in the refinery).

Additionally, if the statewide industrial audit regulation shows that appropriate measures that reduce emissions significantly are feasible—as we expect—completing these measures in a timely manner might be considered as a possible third alternative.

At least initially—in the rule as adopted and implemented through 2020—these limits would be applied to reduce refinery wide emissions of fine particulate matter (PM_{2.5}), oxides of nitrogen (NO_x), sulfur dioxide (SO₂), hydrogen sulfide (H₂S), and volatile organic compounds (VOC).

Conclusion

We applaud the Air District for embarking on this critically important rule-making to protect public health by improving accountability and performance in the refining sector. Our Collaborative looks forward to continuing our work with Air District staff on this important endeavor.

On Behalf of the Collaborative,

Miya Yoshitani, Associate Director
Asian Pacific Environmental Network

Charlotte Brody, Vice President for Health Initiatives
BlueGreen Alliance

Greg Karras, Senior Scientist
Communities for a Better Environment

Mike Wilson, PhD, MPH, Director
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Diane Bailey, Senior Scientist
Natural Resources Defense Council

Ron Espinoza, District 12 Sub-Director
United Steelworkers International

Mike Smith, Local 5 Field Rep.
United Steelworkers Local 5

Attachment: Collaborative recommendations submitted on February 27, 2013

**Attachment to Labor-Community Collaborative Comments
on the Bay Area Air Quality Management District Proposed
Regulation 12, Rule 15; March 2013 Preliminary Draft
Petroleum Refining Emissions Tracking Rule:**

**Labor-Community Collaborative Recommendations
Regarding the “Regulatory Concept Paper, Petroleum Refinery
Emissions Tracking Rule, Bay Area Air Quality Management
District Draft dated 15 October 2012,” Submitted on
27 February 2013**

**Asian Pacific Environmental Network
BlueGreen Alliance
Communities for a Better Environment
Natural Resources Defense Council
UC Berkeley Labor Occupational Health Program
United Steelworkers International and Local 5**

BY ELECTRONIC MAIL

February 27, 2013

Jack Broadbent, Executive Officer
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

Attention: Brian Bateman, Jim Karas, Wayne Kino, Jean Roggenkamp,
Ana Sandoval, Jim Smith, and Eric Stevenson

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

Dear Executive Officer Broadbent,

We write as a newly-formed labor-community collaborative that is focused on building the collective advocacy and leadership capacity of communities and workers to improve the safety, health and environmental performance of Bay Area oil refineries. Collaborative members to date include the UC Berkeley Labor Occupational Health Program, Communities for a Better Environment, the United Steelworkers Union International and Local 5, the Natural Resources Defense Council, the Asian Pacific Environmental Network, and the U.S. and California BlueGreen Alliance.

Thank you for joining representatives of our Collaborative and your staff to discuss the Bay Area Air Quality Management District (BAAQMD) proposal to develop a new refinery emissions rule on 24 January 2012. We are pleased to see this new BAAQMD regulatory effort that would apply to all five Bay Area crude oil refineries and could, for the first time, address mass emissions from each refinery comprehensively, and all causal factors that drive increased emissions, including changes in crude feed quality. During our discussion, you and your staff indicated that other stakeholders, such as oil company representatives, had provided initial comment on the rule, and you invited our initial comment as well.

Accordingly, our Collaborative respectfully submits initial recommendations on the rule, regarding conceptual issues identified by our review of your 15 October 2012 Draft Concept Paper. These initial recommendations address the overarching goal, scope, and approach of the rule as follows.

Recommendation: The rule should seek to protect and improve environmental health by limiting *and* reducing emissions, and this overarching goal should be stated explicitly in order to focus and guide the rule development effort.

Discussion. Refinery emissions contribute significantly to serious air quality and environmental health problems, such as increased incidence of respiratory disease in nearby communities and excessive atmospheric carbon loading that is disrupting climate. These emissions must be limited *and* reduced in order to protect *and* improve environmental health. While a cap on current emissions that prevents increases is helpful, the current emissions from refineries pose significant health risks, thus necessitating reductions. The

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Draft Concept Paper does not state the overarching goal of the rule explicitly. Ensuring clarity about our goal at the outset will be helpful to the success of this collective public policy development effort.

Recommendation: Ensure that routine *and* episodic emissions of criteria, toxic and climate-disrupting air pollutants are included in the scope of the rule.

Discussion. Refineries contribute significantly to localized, regional and climate-disrupting air quality and environmental health impacts by causing both routine (day-to-day) and episodic (incident) emissions of criteria, toxic and climate pollutants (e.g., SO₂; PM_{2.5}; mercury; CO₂). Additionally, in many cases, a common causal factor drives changes in routine *and* episodic emissions, emits multiple pollutants, or both. Thus, excluding one type of emission can underestimate the benefits of refinery emissions control and result in the failure to identify and apply effective emissions control strategies.

Refinery emissions released in upsets and malfunctions can, in some cases, be greater than total operational emissions recorded in formal inventories. For example, a recent investigation of 18 Texas oil refineries between 2003 and 2008 found that “upset events” were frequent, with some single upset events producing more toxic air pollution than what was reported to the federal TRI database for the entire year.¹ Many single upset events produced as much as 2.5 million pounds of SO₂ and more CO than would be emitted from annual use of hundreds or in some cases thousands of passenger vehicles. Therefore, it is important to include in the scope of this regulation routine *and* episodic emissions of criteria, toxic *and* climate pollutants in order to ensure effective refinery emissions control.

Recommendation: Retain the proposal to address all causal factors that drive increased refinery emissions, including crude oil quality, as a critical element of the rule.

Discussion. Many causal factors can change refinery emission rates significantly, and these “emissions drivers” can sometimes operate independently from each other, so that each emissions driver must be addressed to ensure that refinery emissions are controlled.

As your staff acknowledged in our discussion on 24 January, existing air quality rules do not explicitly address an important refinery emissions driver—lower quality oil. Refining denser, more contaminated oil has the potential to *double* refinery emissions of mercury² and could increase refinery emissions of other toxics from the contaminated oil. Further, it has the potential to *double or triple* refinery CO₂ emissions and could increase emissions of toxic and criteria pollutants from burning more fuel in refineries.³ Finally, heavier, more corrosive crude oil *has been* a causal or contributing factor in refinery incidents that emitted massive air pollutant plumes repeatedly.⁴ Thus, changing oil feedstock quality

¹ Ozymy and Jarrell, 2011. Upset over Air Pollution: Analyzing Upset Event Emissions at Petroleum Refineries, *Review of Policy Research* Vol. 28, No. 4.

² Wilhelm et al., 2007. Mercury in Crude Oil Processed in the United States (2004). *Env. Sci. Technol.* 41(13): 4509–4514.

³ Karras, 2010. Combustion Emissions from Refining Lower Quality Oil: What is the Global Warming Potential? *Env. Sci. Technol.* 44(24): 9584–9589.

⁴ U.S. Chemical Safety Board, 2001. Investigation Report No. 99-014-I-CA (accelerated corrosion due to running denser crude through the desalter plugs crude unit valves, contributes to fatal Tosco Avon Refinery

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is a refinery emissions driver that can change both routine and episodic emissions from refineries significantly.

Therefore, BAAQMD's proposal to address all causal factors that can drive increased refinery emissions must continue to include crude oil quality, as a necessary benchmark to ensure that refinery emissions are controlled.

Recommendation: Supplement the “reactive” approach described with a “proactive” approach that seeks to prevent air quality and health impacts.

Discussion. The approach described in the Draft Concept Paper would track emissions from each refinery, perform causal and impact analyses of any observed emissions increase, and require mitigation if the impacts of the emissions *increment* prove significant (15 October 2012 Draft Concept Paper, page 4). We support monitoring for unforeseen impacts and mitigation of such impacts when found—as a backstop. Our concern is that this reactive approach *alone* allows serious and entirely foreseeable harm:

- Reacting only *if* emissions increase will allow refinery emissions that currently impact air quality and health, and should be reduced, to instead cause more harm.
- Reacting only *after* emissions increase allows new impacts that could be irreversible. Exposures to otherwise preventable routine and episodic emissions could result in chronic disease and premature deaths. Emission increases resulting from major equipment changes, such as retooling for increased production or lower quality oil, could be locked-in by the commitments to capital and equipment. Even if such an emissions increase could be reversed by other available measures, using up those measures could foreclose their use for needed refinery-wide emission reductions.
- Demanding proof that the *emission increment alone* causes significant impacts when total refinery emissions are known to cause such impacts, but available monitoring and assessment tools cannot reliably measure impacts of emission increments in isolation from those of total emissions, would unnecessarily and unreasonably delay—perhaps indefinitely—any mitigation of the new impacts.

Relying on this reactive approach alone would allow otherwise preventable air quality and environmental health impacts from refinery emissions. Supplementing this reactive approach with a proactive one that seeks to predict and prevent impacts is necessary for effective refinery emissions control.

Recommendation: Improve air monitoring for both routine and upset emissions.

Discussion. In addition to existing monitoring for criteria pollutants and the standard list of volatile organic compounds (VOCs: Benzene, toluene, xylene, etc.), it is important to measure for ultrafine particulate matter and additional toxic constituents closely associated with petroleum processing, including polycyclic aromatic hydrocarbons (PAHs:

fire in 1999); Cal-OSHA, 2012. Inspection Report No. 314328980 (workers warn of worsening corrosion as Richmond refinery runs higher sulfur crude); Chevron, 2007. Final Investigation Report submitted to Contra Costa County on 18 April 2007; American Petroleum Institute, 2009. Recommended Practice 939-C; Chevron, 2012. 25 September 2012 Industry Alert; and Chemical Safety Board data reported January 2013 (sulfidation corrosion exacerbated by higher sulfur crude thins piping that ruptures in the Richmond refinery crude unit fires of January 2007 and August 2012).

benzo-a-pyrene, naphthalene, etc.). Monitoring should be done on site, at the fenceline of the property and at multiple locations around the facility and within the community representing areas closest to the refinery and further away. Monitors should be placed in areas downwind of the refinery covering several of the most probable wind direction scenarios. Monitoring should be done on a continuous basis where possible and always on the most frequent time basis available (e.g., hourly vs. every 6th day). Monitoring technology utilized should be the most modern and accurate options available, including continuous emission monitoring systems (CEMS), continuous opacity monitoring systems (COMS), and continuous video monitoring.⁵ All monitoring data should be provided to the public on a website including raw data in real time and QA/QC data. Monitoring should provide peak emissions data as well as time-weighted average data; monitoring stations should also be capable of continuous monitoring for use during upset events and emergencies.

Research has shown that self-reported data is less accurate, and that regulators should engage in direct monitoring and oversight of emissions at stationary sources.⁶ Industry has a strong financial incentive to underreport emissions, especially when oversight and enforcement are lacking.⁷ Penalties for over-the-limit emissions and for fraudulent reporting are both essential.

Recommendation: Analyze the key factors affecting refinery emissions and opportunities to predict, limit, and reduce emissions during rule development.

Discussion. The Draft Concept Paper discusses analyzing causes of refinery emissions and measures to reduce them during rule implementation after emissions increase (15 October 2012 Draft Concept Paper, page 4). This recommendation would clarify or supplement that approach so that such analyses will help define how to predict and prevent emissions during rule development.

Factors affecting refinery emissions can in many cases be predicted, analyzed, and addressed by preventive measures before impacts occur. Examples of this strategy include BAAQMD's "potential to pollute" analysis, predictions of emissions from refining lower quality oil developed to reduce fuel-cycle carbon emissions, preventive measures identified by flaring causal analyses, and "Inherently Safer Systems" requirements for industrial safety. Thus, a proactive approach that seeks to predict and prevent impacts can be applied now. This proactive approach is needed to avoid otherwise preventable air quality and environmental health impacts, as shown in the previous discussion. Therefore, analyzing the key factors affecting refinery emissions and opportunities to predict, limit, and reduce emissions during rule development is appropriate and necessary in order to ensure effective emissions control.

⁵ Environmental Integrity Project, *Oil Refinery Permits: A Handbook for Citizen Participation in the Permitting of Oil Refineries under the New Source Review Provisions of the Clean Air Act*, page 69-70. http://www.environmentalintegrity.org/pdf/publications/HANDBOOK_FINAL_121007.pdf

⁶ Stretsky & Lynch, 2009. Does self-policing reduce chemical emissions: A further test of the EPA self audit policy. *The Social Science Journal* 46: 459-473.

⁷ Waxman H., 1999. *Oil refineries fail to report millions of pounds of harmful emissions*. Report Prepared for Rep. Henry A. Waxman, November 10, 1999 by the U.S. House of Representatives Minority Staff, Special Investigations Division, Committee on Government Reform.

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Recommendation: Provide for meaningful public participation by adopting an approach that ensures all data and analysis used to develop the rule are available for public verification, review and analysis.

Discussion: We support BAAQMD's intent to hold public workshops, public work group meetings, and a public hearing before rule adoption, but the Draft Concept Paper does not address the important issue of access to data and analysis used in rule development.

Meaningful participation requires the ability to check, analyze, and weigh information *independently*. Thus, ensuring public access to data and analysis used to develop the rule is essential for meaningful public participation in developing the rule. Open sharing of this information also is essential to sound science. Using undisclosed data would undermine scientific (as well as public) support for the rule. Therefore, it is paramount that the data and analysis that informs development of this rule be publicly disclosed.

Recommendation: Maintain transparency of the process throughout regulatory development and implementation.

Discussion. We appreciate the public process the District is engaged with in the drafting of the new rule. We also believe that transparency in the implementation of, and compliance with, the new rule is critical to its success. We consider transparency and dissemination to mean easy access to information by the public on the ways in which the refineries are compliant or not compliant with the new rule; easy access means that information both as raw data and in summary form is proactively made available to the public online in an easily accessible format.

Transparency is most effective and credible when the information provided is validated by an independent entity; that is, while it is incumbent upon the refineries to report information to the public that falls within the jurisdiction of the new rule, that information must be validated by a third party for its accuracy, and penalties need to be in place for misreporting data.

The rule should address Confidential Business Information up front. The District should also challenge CBI claims by the refineries with regard to public reporting of information. There is evidence that CBI claims are made routinely by industry: in 2005, for example, the U.S. EPA reported that 95% of Pre-Manufacturing Notices submitted by producers under the federal Toxic Substances Control Act (TSCA) contained some information claimed as confidential (U.S. GAO 2005).⁸ EPA found that 90% of the CBI claims in PMNs hid the identity of the chemical itself, which greatly limited the agency's ability to implement TSCA (U.S. EPA 2003).⁹ The Agency has not had the resources to investigate and challenge the validity of these claims.

⁸ U.S. GAO. 2005. *Chemical Regulation: Options Exist to Improve EPA's Ability to Assess Health Risks and Manage Its Chemicals Review Program* (GAO 05-458). Washington, DC:U.S. Government Accountability Office. Available: <http://www.gao.gov/new.items/d05458.pdf> [accessed 30 January 2009].

⁹ U.S. EPA. 2003. *Overview: Office of Pollution Prevention and Toxics Programs*. Draft Version 2.0. Washington, DC:U.S. Environmental Protection Agency. Available: <http://www.chemicalspolicy.org/downloads/TSCA10112-24-03.pdf> [accessed 30 January 2009].

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Conclusion

The Air District effort on this Emission Tracking regulation is groundbreaking in its potential to prevent worsening of crude oil quality and related increases in refinery pollution. This effort also is likely to result in significant improvements to refinery safety. We appreciate the substantial effort of the agency and staff in undertaking this rulemaking and your commitment to a public process. We look forward to working closely with you as this important policy develops. Please feel free to reach the Collaborative through me at (510) 302-0430 x19 if you have a question about this letter.

On Behalf of the Collaborative,



for:

Greg Karras, Senior Scientist
Communities for a Better Environment

Diane Bailey, Senior Scientist
Natural Resources Defense Council

Ron Espinoza, Statewide Director
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