BY ELECTRONIC MAIL

17 June 2019

Jack Broadbent, Air Pollution Control Officer
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA  94105

Request for Action Now to Prepare Environmental Health and Justice-critical Petroleum Refinery PM$_{2.5}$ Emission Reduction Protections for Adoption As Soon As Practicable

Dear Mr. Broadbent,

On behalf of 16 organizations we request that you publish a schedule specifying public emission control rule development activities by the Bay Area Air Quality Management District (BAAQMD) to begin forthwith for each of these long-promised protections from deadly oil refinery PM$_{2.5}$ emissions:

- Fluid Catalytic Cracking Unit (FCCU) wet scrubbing; Rule 6-5, delayed since 2015.
- Fuel gas hydrotreating; Rule 9-1, delayed since 2015.
- Refinery fuel combustion reduction strategy; Rule 13-XX, delayed since 2017.
- Cross-basin PM$_{2.5}$ pollution trading ban; Rule 2-XX, delayed since 2017 (when BAAQMD deferred consideration of PM$_{2.5}$ emission caps originally proposed as part of proposed Rule 12-16).

Each of these protections was identified by BAAQMD, planned by BAAQMD for implementation 2–4 years ago, and found by BAAQMD staff at that time to be capable of cutting refinery emissions significantly based on refinery retrofit and/or operational measures which were demonstrated in practice. See Table 1 below. We emphasize that these health protections are needed urgently by people who are exposed to disparately severe oil industry pollution in low-income communities of color near refineries.

We are concerned that BAAQMD has engaged in no public rule development activity for any of these protections in 2019 to date, and worse, that in its 30 May 2019 refinery rules technical working group meeting, BAAQMD proposed a schedule that could delay work on these protections beyond 2019.

Disparately severe localized air pollution would worsen environmental injustice with this delay. The biggest industrial PM$_{2.5}$ source in Chevron’s Richmond refinery pollutes without a measure that proved effective since 2010 in cutting at least 90% of those emissions elsewhere. Phillips 66 emits as much SO$_2$ from burning fuel gas in Rodeo as three other Bay Area refineries combined because it does not use fuel gas treatment achieved by others here and required in Los Angeles since 1994, which could cut up to 89% of those emissions. Even measures as obvious as burning no more fuel than needed to refine the products Californians need and use, and putting PM$_{2.5}$ pollution trading into the dust bin of history where that toxic injustice belongs—protections BAAQMD considered in 2017—now appear to be deferred indefinitely.

350 Bay Area
Alameda Interfaith Climate Action Network
Benicians for a Safe and Health Community
Citizen Air Monitoring Network
Communities for a Better Environment
Crockett-Rodeo United to Defend the Environment
Good Neighbor Steering Committee — Benicia
Greenaction for Health and Environmental Justice
Idle No More SF Bay
Interfaith Climate Action Network of Contra Costa County
Richmond Progressive Alliance
Rodeo Citizens Association
Sierra Club San Francisco Bay Chapter
Stand.Earth
Sunflower Alliance
West Marin Standing Together
These are exactly the type of emission-cutting measures that Assembly Bill 617 (2017) promised to prioritize for environmental justice.

There is simply no good excuse for preventable pollution. In this regard, we wish to address a question that has been brought to our attention informally: we support all appropriate actions to prevent and reduce pollution. Taking all such actions within its jurisdiction expeditiously, and ensuring it has staff resources to do so, is BAAQMD’s job. BAAQMD has moved needed protections forward simultaneously before, as it should now. Indeed, the alternative—demanding that communities choose which way to be polluted unnecessarily—would only be another environmental injustice, cloaked in another disguise.

We look forward to your written response to this request for a schedule specifying public emission control rule development activities for each of the four protections summarized in Table 1 at your earliest opportunity, and in any case, we request your response no later than 15 July 2019.

Sincerely,

Laura Neish
350 Bay Area

Frances Aubrey
Alameda Interfaith Climate Action Network

Katherine Black
Benicians for a Safe and Healthy Community

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**Table 1. Oil Refinery Emission Reduction Rules—Environmental Justice Priorities, June 2019**

<table>
<thead>
<tr>
<th>Targeted emissions</th>
<th>FCCU Scrubbing</th>
<th>Fuel Gas Treating</th>
<th>Combustion Strategy</th>
<th>Pollution Trading Ban</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM$_{2.5}$, SO$_x$</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Emission impact reduction potential</th>
<th>At least 90% emission cut</th>
<th>Approximately 89% SO$_x$ emission cut</th>
<th>At least 5%/year cut each year</th>
<th>Prevent emission increase locally</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Protective action</th>
<th>Wet scrubbing of FCCU emissions</th>
<th>Hydrotreating of non-acidic fuel gas</th>
<th>Burn less fuel in refineries</th>
<th>Prohibit non-local offsets for PM$_{2.5}$</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Feasibility summary</th>
<th>Required/done elsewhere</th>
<th>Required/done elsewhere</th>
<th>Avoidable export production excess</th>
<th>Human rights imperative (also feasible)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>BAAQMD identification</th>
<th>Rule 6–5 Measure SS1</th>
<th>Rule 9-1 Measure SS6</th>
<th>Rule 13-XX Measure SS18</th>
<th>Rule 2-XX (was Measure SS11)</th>
</tr>
</thead>
</table>

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<thead>
<tr>
<th>Affected refineries</th>
<th>Chevron, Shell, Tesoro (Marathon)</th>
<th>Phillips 66</th>
<th>Each Bay Area petroleum refinery</th>
<th>Each Bay Area petroleum refinery</th>
</tr>
</thead>
</table>

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<thead>
<tr>
<th>Original adoption hearing schedule</th>
<th>2015</th>
<th>2015</th>
<th>2017</th>
<th>2017*</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Other relevant information</th>
<th>March 2019 catch-up deadline set by CARB has passed</th>
<th>Same standard set since 1994 in LA proposed in 2015</th>
<th>BAAQMD staff-proposed alternative to Rule 12-16 caps</th>
<th>*Rule 12-16 PM$_{2.5}$ caps deferred to Reg. 2 May 2017</th>
</tr>
</thead>
</table>

*Rule 12-16 PM$_{2.5}$ caps deferred to Reg. 2 May 2017
Ken Szutu  
Citizen Air Monitoring Network

Greg Karras  
Communities for a Better Environment (CBE)

Nancy Rieser  
Crockett-Rodeo United to Defend the Environment (C.R.U.D.E.)

Kathy Kerridge  
Good Neighbor Steering Committee — Benicia

Bradley Angel, Executive Director  
Greenaction for Health and Environmental Justice

Pennie Opal Plant, Co-founder  
Idle No More SF Bay

Rev. Will McGarvey, Executive Director  
Interfaith Climate Action Network of Contra Costa County

Jeff Kilbreth  
Richmond Progressive Alliance

Janet Pygeorge and Janet Callaghan  
Rodeo Citizens Association

David McCoard  
Sierra Club San Francisco Bay Chapter

Matt Krogh  
Stand.Earth

Steve Nadel  
Sunflower Alliance

W. Ellen Sweet  
West Marin Standing Together

1 See BAAQMD Tentative 2019 Refinery Rules Rule Development Schedule, attached.
2 See Catalytic cracker wet scrubbing issue summary fact sheet, attached.
3 See Coker off-gas hydrotreating issue summary fact sheet, attached.

Copy:  Richard Corey, Executive Officer, California Air Resources Board  
Veronica Eady, Assistant Executive Officer, California Air Resources Board  
Yana Garcia, Assistant Secretary for Environmental Justice and Tribal Affairs, Cal EPA  
Board of Directors Chair Katie Rice and Directors, BAAQMD  
BAAQMD Advisory Council members  
Greg Nudd, Deputy Air Pollution Control Officer – Policy, BAAQMD  
Victor Douglas, Rules Development Manager, BAAQMD
## Tentative 2019 Refinery Rules Technical Working Group/Rule Development Schedule

### Rule Development Effort

<table>
<thead>
<tr>
<th>Rule Development Effort</th>
<th>Jun</th>
<th>July</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
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<tr>
<td>Hydrogen Production (unnumbered rule)</td>
<td>TWG</td>
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<td></td>
<td>DR/WS</td>
<td></td>
<td>TWG</td>
<td></td>
</tr>
<tr>
<td>Rule 8-5: Storage of Organic Liquids</td>
<td>TWG</td>
<td></td>
<td></td>
<td>DR/WS</td>
<td></td>
<td>TWG</td>
<td></td>
</tr>
</tbody>
</table>

**Legend:**
- **TWG** Technical Working Group
- **DR/WS** Draft Rule/Public Workshop
- **BH** Board Hearing

**Other Rule Development Efforts for Future Sessions:**
- Regulation 2: Permits (Rules 2-1, 2-2, 2-5)
- Rule 6-5: Refinery Fluid Catalytic Cracking Units
- Rule 8-8: Petroleum Wastewater Treating
- Rule 9-14: Petroleum Coke Calcining Operations
- Rule 12-12: Flares at Petroleum Refineries
- Rule 13-1: Significant Methane Releases
Scrub Chevron’s catalytic cracking emissions to save lives in Richmond now

Chevron’s fluid catalytic cracking unit (FCCU) is the dirtiest source of the deadliest air pollutant in Richmond. Its FCCU emits ≈ 270 tons of PM$_{2.5}$ each year, ≈ 60% of all the PM$_{2.5}$ emitted by Chevron’s oil refinery in Richmond.\(^1\)

PM$_{2.5}$—particulate matter 2.5 microns in diameter or less—causes more than 90% of all deaths from air pollution and kills an estimated 2,000–3,000 people each year in the Bay Area.\(^2\)

Everyone is exposed to this risk, yet low-income communities of color face disparately severe risk from refinery PM$_{2.5}$ emissions.\(^3\) Burning “heavy oil” in the Chevron Richmond refinery increases health-threatening concentrations of PM$_{2.5}$ inside Richmond residents’ homes.\(^4\) That “heavy oil” includes pet coke Chevron burns in its FCCU.

### Problem

FCCUs burn the dirtiest fuel and send pollution into our air so refiners can make more gasoline, diesel, and jet fuel from low quality oil.

Petroleum coke, or “pet” coke, is a byproduct of refining dirty fuels. Pet coke deposits on the refining catalyst in FCCUs. FCCUs burn it off to reactivate the catalyst as well as to heat the FCCU. Pet coke is the dirtiest fuel burned in the Bay Area.

Chevron’s FCCU in Richmond burns 650–900 tons of pet coke per day.\(^5\)

At the same time, Chevron’s FCCU uses an old, inadequately effective emission control scheme called “ammonia assist-electrostatic precipitation,” which also poses a serious explosion hazard during maintenance shutdowns and startups.

Continued, next page
Solution

Wet scrubbing removes air pollutants from exhaust gases using water and chemicals called amines.

For example, requiring wet scrubbing on Valero’s existing FCCU in Benicia reduced PM$_{2.5}$ (and SO$_2$) emissions from that FCCU by more than 90%.

By cutting 90% of the PM$_{2.5}$ emitted from the Chevron Richmond refinery FCCU, wet scrubbing could save the lives of 16–18 people each year.

Cost savings from averting these premature deaths could exceed the ammortized cost of wet scrubbing by a factor of 6–16 times.

Chevron can cut FCCU emissions. Others have.

Call to Action

Our local air officials can stop stalling on this life-saving protection. In fact, the State Air Resources Board has told them to start this FCCU cleanup work already—no later than March 2019.

Join CBE to demand that the Bay Area Air Quality Management District (BAAQMD) strengthen its Rule 6-5 to require refinery FCCU emission cuts that can be achieved by wet scrubbing NOW.

Act now: Contact Andrés Soto (510.282.5363; andres@cbecal.org) or Zolboo Namkheidorj (510.495.7959; zolboo@cbecal.org).

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1. BAAQMD emission inventory, various years. 2. BAAQMD Clean Air Plan supporting documents, 2017. 3. Kuiper et al., 2017, BAAQMD Rule 12-16 development records. 4. Brody et al., 2009. DOI: 10.2015/AJPH.2008.149088. 5. Activity rate and source modification data, BAAQMD emission inventory, files, various years. 6. From 90% of 270 tons/yr; ref. 2 (76 deaths and 700 MMS associated costs averted/year by cutting PM$_{2.5}$ 2.8–3.1 tons/d); and assuming 100–200 MMS scrubbing cost ammortized over 10 yrs. 7. CARB Resolution 18-37 adopted 27 Sept. 2018.
Burning “fuel gas” created in refining emits ≈ 330 tons of sulfur dioxide from the Phillips 66 Rodeo refinery annually—twice as much as burning fuel gas emits from the Chevron Richmond, Tesoro Martinez, and Valero Benicia refineries combined.\(^1\)

Sulfur dioxide (SO\(_2\)) air pollution is harmful itself, and also forms deadly PM\(_{2.5}\)—particulate matter 2.5 microns in diameter or less—in our air when SO\(_2\) is emitted. Low-income communities and communities of color in Rodeo, Crockett, and South Vallejo face disparately severe health risks from the Rodeo refinery’s air pollution.

**Problem**

Phillips 66 is burning dirtier fuel gas because it is using coking to boost gasoline, diesel and jet fuel production from heavier, dirtier crude and it is not treating contaminants this sends into its fuel gas.

Delayed coking creates exceptionally polluting byproducts: petroleum coke, and coker off-gas. The fuel gas treatment Phillips 66 uses at Rodeo is not designed to remove the non-acidic sulfur compounds in the coker off-gas it burns as fuel.\(^1,2\)

Coker off-gas accounts for most of the SO\(_2\) the Rodeo refinery emits from burning fuel gas.\(^2\)

**Solution**

Phillips 66 can treat coker off-gas. Others do.

Hydrotreating its fuel gas could cut Rodeo refinery SO\(_2\) emissions by ≈ 291 tons/year, the Bay Area Air Quality Management District (BAAQMD) estimates.\(^1\) All other Bay Area refineries already use fuel gas hydrotreating, BAAQMD reports.\(^1\)
Communities for a Better Environment (CBE)  www.CBECAL.org  May 2019

Hydrotreat Phillips 66 Coker Off-Gas: Protect Health  continued

Toxic Injustice

In 2015 BAAQMD proposed to revise its Rule 9-1 to force the emissions cuts fuel gas hydrotreating can achieve.1 But it never did.1,3 Instead, from then until now, BAAQMD has failed to adopt this needed health protection.

Meanwhile, the same fuel gas cleanup standard it proposed in 2015 has applied to Los Angeles Area refineries since 1994.1 And, Phillips 66 told BAAQMD, the refiner already had the key equipment that it could re-purpose to hydrotreat its fuel gas on site at its Rodeo refinery—since August 2012.4

Phillips 66 had equipment to do the same retrofit other Bay Area refineries have already done. Emissions control this could provide was already required in Southern California. And yet that equipment sat unused in Rodeo. Since August 2012, by the BAAQMD’s own 291 tons/year estimate,1,5 this neglect sent ≈ 1,940 tons of SO2 into nearby low-income, black, and brown communities’ air.

PRP - Coker Fuel Gas Hydrotreater scc

New Coker Fuel Gas Hydrotreater to remove new contaminants
• Coker Propane / Butane contains contaminate (Sulfur)
• Hydrotreating will remove contaminates. Refir reduced by 75%. Approx. 0.75 TPD reduction emissions
• Fuel Gas feed streams contain sufficient Hydrogen
• Re-use existing Hydrogen Plant Feed Compressor
• Re-use existing Hydrogen Plant feed system Hydrotreating Reactors
• Operate reactors around 280 PSI and 500 F

Excerpt from Phillips 66 presentation to BAAQMD dated 13 August 2012.4 It already had equipment it could use for fuel gas hydrotreating (red underlining, added).

Take Action: Join CBE to demand that the Bay Area Air Quality Management District strengthen its Rule 9-1 to require refinery emission cuts that can be achieved by fuel gas hydrotreating NOW.

Email BAAQMD: Executive Officer Jack Broadbent; Board member Mark Ross (City of Martinez), and Board members Karen Mitchoff, and John Gioia (Contra Costa County). Send your emails to them through the BAAQMD Board’s Clerk, Marcy Hiratzka: mhiratzka@baaqmd.gov

Send us a copy of your correspondence with BAAQMD, and get more involved: Andrés Soto, CBE Organizer; andres@cbecal.org and Zolboo Namkhaidorj, CBE Youth Organizer; zolboo@cbecal.org

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