Chevron's Crude Unit Fire on August 6, 2012: What we know now (two weeks later)

COMMUNITIES FOR A BETTER ENVIRONMENT

BEFORE THE INCIDENT

1998: Chevron begins a switch to higher-sulfur crude oils at its Richmond refinery. (See Chart.) Among other problems, this worsens inherent hazards by increasing the potential for corrosion.

January 2007: A corroded pipe fails causing a huge fire and flaring at the Richmond refinery crude unit. (Chevron reports.)

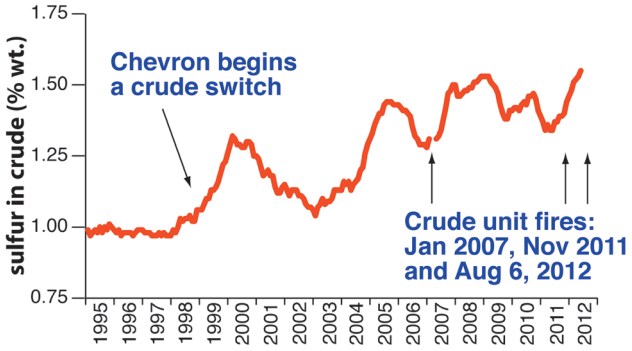
November 2011: Chevron replaces another pipe in the crude unit due to corrosion but does not replace the pipe that—nine months later—fails in the current incident. Report by Chemical Safety Board (CSB).

THE INCIDENT

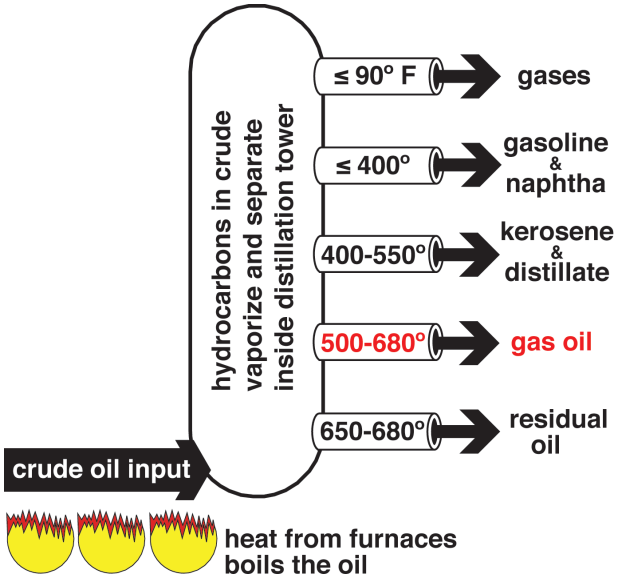
August 6, 2012; ~4:15 pm: A leak is found in a pipe carrying hot gas oil from the Richmond refinery crude unit, according to worker, CSB, and Chevron reports. (See Diagram.)

August 6, 2012; 4:15–6:15 pm: Instead of shutting down the leaking unit Chevron keeps it running while removing the insulation from the leaking pipe in the unit. (Worker, CSB reports.)

continued next page



Sulfur in crude slates refined at Richmond, Jan 1995–May 2012 Rolling annual average of monthly data. Data from Chevron and USEIA. Chart by CBE.



This diagram of atmospheric crude distillation shows typical boiling temperature ranges (cut points) for various components ("cuts") of whole crude. Red text: the outlet pipe that leaked in the August 6th incident contained hot (~600° F) atmospheric gas oil, according to the U.S. Chemical Safety Board.

1904 Franklin Street, Suite 600 • Oakland, CA 94612 • T (510) 302-0430 • F (510) 302-0437

In Southern California: 6325 Pacific Blvd., Suite 300 • Huntington Park, CA 90255 • (323) 826-9771

Chevron crude unit fire: what we know now (continued)

August 6, 2012; 6:15–6:30 pm: The leak of hot gas oil from the pipe grows. A huge vapor plume forms, then ignites in a huge, uncontrolled, smoky fire. (See Photo 1.)

Black smoke also emits from a flare as Chevron dumps hydrocarbons from the crude unit to it. Chevron first reports that the fire starts at ~6:15 and later reports it starting at ~6:30. (CSB, Chevron reports.)

August 6, 2012; ~7:00 pm: The fire and flaring create a massive smoke plume. Importantly—because local impacts might have been much worse—visual evidence suggests that most of the plume is thrust high into the air instead of remaining at ground-level. (See e.g., Photo 2.)

August 6, 2012; 7:00–11:30: The fire rages for hours before it is controlled ("controlled burns" continue for days). Air monitoring and warning systems prove inadequate. Thousands go to hospital.

AS OF AUGUST 21, 2012

- Chevron reports 5 workers are injured.
- The County reports that 14,000 people go to hospital with exposure symptoms.
- Total incident emissions remain unmeasured, but current evidence suggests that the fire and flaring emitted a "toxic soup" of harmful air pollutants. (See Box.)
- We won a community voice in the investigation into what caused this terrible pollution incident and how to prevent another possibly worse disaster in the future.

1. Seconds after ignition. Smoke begins to envelop the huge (white) vapor plume from Chevron's crude unit after 6 pm on August 6, 2012. U.S. Chemical Safety Board evidence: Photo www.Fototaker.net

2. Air pollution from Chevron's crude unit fire at ~7:00 pm on August 6, 2012. View from 10.7 miles away to the West-Southwest. Photo CBE

Some pollutants the fire probably emitted (based on uncontrolled gas oil burning)

Particulate matter can cause breathing problems and increase death rates.

Hydrocarbon gases can form smog and cause breathing problems. Some are very toxic, such as leukemia-causing **benzene.**

Sulfur compounds (H_2S, SO_2, sulfuric acid and others) can cause odors, breathing and eye irritation, asthma attacks, headaches, and at higher levels are acutely hazardous.

Nitrogen oxides can cause smog and breathing irritation and also react in the air to form toxic **particulate matter** (see above).

PAHs (polycyclic aromatic hydrocarbons) may cause cancer, reproductive harm, and adverse impacts on ability to fight disease.

After May, Julia. *Refinery Flaring in the Neighborhood.* **2004,** A CBE report.