

EIP REPORT: U.S. REFINERY EMISSIONS OF CARCINOGEN BENZENE UP MORE THAN 8 PERCENT, AS INDUSTRY FAULTED FOR HAPHAZARD REPORTING OF POLLUTION DATA

Though Petroleum Demand and Refinery Production Dropped, Benzene Emissions Rose; One Texas Refinery Reported 41,000 Pounds of Pollutant to State ... But Only 6,000 Pounds to EPA.

WASHINGTON, D.C.//February 4, 2010//U.S. refinery emissions of benzene, a known human carcinogen, rose more than 8 percent between 2007 and 2008, according to reports filed with the Environmental Protection Agency's (EPA) Toxics Release Inventory (TRI). Despite that increase, the nonprofit and nonpartisan Environmental Integrity Project (EIP) cautioned today in a new report that refineries may be underreporting their actual benzene emissions in some cases and inconsistently reporting them to regulators in other cases.

Titled ***"U.S. Refinery Benzene Emissions Increase in 2008: Data Quality Concerns Undermine Confidence in Reported Data Trends in Benzene Emissions from U.S. Refineries,"*** the EIP pointed out that the one-year increase in benzene emissions came about despite a decline in the demand for petroleum products in 2008, which led some U.S. refineries to reduce production. The four U.S. refineries with the largest total emissions increases between 2007 and 2008 were: Citgo's Westlake refinery in Louisiana; BP's Texas City refinery in Texas; Sunoco's Philadelphia refinery in Pennsylvania; and Sunoco's Marcus Hook refinery in Pennsylvania.

However, the EIP report makes a strong case for concern that benzene emissions are being reported today by refineries in a haphazard fashion. It notes: **"Continued uncertainty over the quality and accuracy of reporting makes it difficult to know how much real progress has been made in the effort to decrease benzene emissions. Some companies that report relatively high emissions may actually be doing a more careful job measuring their releases than others. However, there is also evidence that benzene emissions on the whole are being underreported due to outdated and inaccurate emission factors and conflicting reports submitted by industry."**

EIP Attorney Lisa Widawsky said: **"The bottom line here is that we should have a much better handle than we do today on where we really stand with benzene emissions from refineries. We remain very concerned by several signs that industry is under-reporting benzene pollution levels. We believe that further steps are needed to tighten monitoring to ensure that this carcinogen is under control in the manner in which the Clean Air Act intended. The good news is that the limited data we do have suggest a long-term decline in benzene emissions, thanks to Clean Air Act rules finally taking effect."**

Highlights of the report include:

- ***Evidence of inconsistent reporting by refineries.*** Some refineries have submitted conflicting reports on their emissions that undermine confidence in the quality of their data. For example, the Delek refinery in Texas reported releasing 40,920 pounds of benzene to the state's emissions inventory (EI) in 2007, but reported only 5,977 pounds to EPA's Toxics Release Inventory for the same year. And in Corpus Christi, Valero Refining's East refinery reported 27,366 pounds to EI and 38,561 pounds to TRI. These inconsistencies cast doubt on industry reports and may compromise the efforts of regulators who rely on that data for permitting and enforcement efforts.
- ***Remote measurements contradicting refinery-submitted reports.*** Remote sensing measurements have recorded much higher emissions of benzene and other pollutants than are typically reported by industry. For example, a 2006 report prepared by the Alberta Research Council monitored emissions at a Canadian refinery from fugitive sources such as leaking valves and fittings, vents, cooling towers, tanks, and the coker area. Refineries also frequently underestimate emissions from flares, using EPA approved methodologies that assume that nearly all of the volatile organic compounds (which include benzene) that are released to a flare are destroyed in the combustion process. However, a remote sensing study performed by the UK's National Physical Laboratory and conducted at BP's Texas City refinery identified a flare with combustion efficiencies

closer to 50 percent. That same study found that one flare released emissions of volatile organic compounds at a rate 25 times higher than the standard methods used to estimate emissions from this source. In 2006, a study by Houston-based Industrial Professionals for Clean Air (IPCA) further corroborated the underestimation of emissions from flares.

- **Apparent long-term progress.** The one-year jump in benzene emissions follows a period of recent decline. Benzene emissions from all refineries decreased by more than 18 percent from 2000/2001 compared to 2007/2008. Of particular note is the Conoco Wood River refinery in Illinois, which decreased its emissions by 400,277 pounds over the period – accounting for more than half the total reductions in benzene emissions.

The EIP report also points out that, while overall emissions have declined, reported benzene emissions at some refineries continue to increase. **“For example, combined fugitive and stack emissions at Citgo’s Westlake refinery in Louisiana increased by 129,112 pounds from 2000/2001 to 2007/2008. At BP’s Texas City refinery, emissions increased by 76,200 pounds from 2000/2001 to 2007/2008. In addition, Sunoco’s Philadelphia refinery increased emissions by 60,434 pounds from 2000/2001 to 2007/2008. The increase at Citgo’s Westlake refinery appears to be the result of an accident that leaked 92,578 pounds of benzene in December 2008. The leak occurred over a period of less than four hours, and nearly all of the benzene volatilized into the air.”**

Other major sources of benzene are not just poorly measured – often they are not measured at all. For example, refinery coker ponds represent a huge source of unregulated fugitive toxic pollutant emissions, including benzene, toluene, ethyl benzene, and xylene (BTEX). Coker units used in oil refining are cleaned out with water that is sometimes routed to wastewater settling ponds. Once discharged into the pond, toxic pollutants can volatilize into the air. A 1991 EPA study identified the coker pond area as the largest source of unregulated benzene emissions at Amoco’s refinery in Yorktown, Virginia. Despite these high toxic emissions, EPA has yet to set standards of performance to control emissions from the coker pond area.

RECOMMENDED ACTION STEPS

- Refineries should be required to use remote sensing technology to check and recalibrate emissions factors.
- Regulators should recalibrate emissions estimates to factor in variables such as wind speed. This should take place when EPA revisits emissions factors as promised in a recent Federal Register notice.
- Emissions from cokers and coker ponds need to be better measured, and EPA should develop standards to limit benzene releases from these sources.
- Toxic emissions reporting to EPA’s EI and TRI databases needs to be consistent and represent an accurate picture of refinery emissions.

To see the full text of the EIP report, go to <http://www.environmentalintegrity.org> on the Web.

ABOUT EIP

The Environmental Integrity Project (<http://www.environmentalintegrity.org>) is a nonpartisan, nonprofit organization established in March of 2002 by former EPA enforcement attorneys to advocate for effective enforcement of environmental laws. EIP has three goals: 1) to provide objective analyses of how the failure to enforce or implement environmental laws increases pollution and affects public health; 2) to hold federal and state agencies, as well as individual corporations, accountable for failing to enforce or comply with environmental laws; and 3) to help local communities obtain the protection of environmental laws.

CONTACT: Ailis Aaron Wolf, (703) 276-3265 or aawolf@hastingsgroup.com.