



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

## Compliance and Enforcement Division

# INCIDENT REPORT

**ConocoPhillips Refinery (Site #A0016)  
1380 San Pablo Avenue  
Rodeo, California  
October 22, 2010**

On October 22, 2010 at approximately 11:11 hours, ConocoPhillips Refinery released heavy black smoke and excess gasses from the facility's flare due an unplanned shutdown of the hydrogen plant that is owned and operated by Air Liquide. A Hydrogen Plant produces hydrogen for use in the Hydrocracker and other hydrotreating units to help produce finished products in the refinery. The Air Liquide facility is co-located on the ConocoPhillips refinery property.

The wind direction during this incident was from SSW at approximately 2 MPH. The plume from the flare travelled to the Northeast in the direction of the Carquinez Straits and was held aloft by the significant heat from the flaring. No significant odors were detected in the downwind area by District staff. Ambient air samples were collected downwind and upwind of the refinery by District and Contra Costa County Hazardous Materials unit staff. The District received a total of nineteen air pollution complaints.

District staff conducted an initial investigation of the Air Liquide plant shutdown and determined the cause to be an electrical problem that tripped a major electrical breaker shutting down most of the equipment at the plant. The sudden shutdown of the Air Liquide hydrogen plant caused a refinery fuel gas imbalance at the ConocoPhillips Refinery. ConocoPhillips was unable to provide sufficient volumes of steam from their cogeneration plant for smokeless operations of the steam assisted flares. ConocoPhillips proceeded to shut down the refinery but black smoke and large flames from the flares were present until approximately 17:00 hours.

The cause of the Air Liquide hydrogen plant shutdown and the inadequate steam supply from the ConocoPhillips refinery is under investigation.

**ConocoPhillips Refinery  
Ambient Cannister Sampling Results  
Friday, October 22, 2010**

Typical Laboratory Data from Analyses of Ambient Air for Toxic and Non-methane Organic Compounds

compound	TYPICAL VALUES FOR COMPARISON						
			24 hr integrated	24 hr integrated	24hr integrated	2002 Toxic	3 hr integrated
	Conoco Phillips Refinery Upwind Flaring sample Cannister # 1091 (ppb)	Conoco Phillips Refinery Downwind flaring sample Cannister # ENF 59 (ppb)	sample	sample	sample	Network	sample- commute
			typical day	hot summer day	cold inversion day	min/ max/ mean	Caldecott Tunnel
			(ppb range)	(ppb range)	(ppb range)	(ppb)	(ppb range)
methylene chloride	0.5	0.13	<0.5	<0.5 to 2	<0.5 to 2	<0.5/ 3.3/ <0.5	<0.5 to 2
chloroform	<MDL	0.03	<0.02 to 0.05	0.02 to 0.1	0.02 to 0.1	<0.02/ 0.12 / 0.02	0.02 to 0.1
111 TCA	<MDL	<MDL	<0.05 to 0.5	<0.05 to 0.5	<0.05 to 1	<0.05/ 4.19 / 0.11	<0.05 to 1
carbon tetrachloride	0.07	0.09	0.1	0.1	0.1	0.09/ 0.36 / 0.11	0.1
Trichloroethylene	<MDL	<MDL	<0.05 to 0.1	<0.05 to 0.2	<0.05 to 0.3	<0.05/ 0.84 / <0.08	<0.05 to 0.3
perchloroethylene	0.043	0.007	<0.01 to 0.05	0.01 to 0.2	0.01 to 0.5	<0.01/ 0.30 / 0.04	0.01 to 0.5
12 dichloroethane	<MDL	<MDL	<0.1	<0.1	<0.1	<0.1/ <0.1/ <0.1	<0.2
F11	0.12	0.14	0.2 to 0.3	0.2 to 0.4	0.2 to 0.4	*	0.2 to 0.4
F113	0.07	0.06	0.05 to 0.12	0.05 to 0.15	0.05 to 0.2	*	0.05 to 0.2
vinyl chloride	<MDL	<MDL	<0.3	<0.3	<0.3	<0.3/ <0.3/ <0.3	<0.3
1.3 butadiene	<MDL	<MDL	<0.15 to 0.3	<0.15 to 0.5	<0.15 to 1	<0.3/ 0.5 / <0.3	1 to 20
acetone	0.81	0.97	2 to 20	2 to 20	over 20	*	10 to 40
MEK	<MDL	0.26	0.2 to 1	0.2 to 2	over 20	*	0.5 to 4
benzene	0.06	0.08	0.1 to 1	0.5 to 2	0.5 to 10	0.1/ 2.2/ 0.4	5 to 50
Toluene	0.06	0.25	0.1 to 2	0.5 to 4	1 to 20	0.1/ 24.9 / 1.2	10 to 100
ethylbenzene	<MDL	<MDL	0.1 to 0.5	0.1 to 1	1 to 10	*	5 to 30
m/p xylene	<MDL	0.08	0.1 to 1	0.1 to 2	1 to 20	*	5 to 50
o xylene	<MDL	0.08	0.1 0.5	0.1 to 1	1 to 10	*	5 to 30

Compounds analyzed as part of the Toxics Program

\* These compounds not officially reported until 1/1/2003