FACT SHEET

PROPOSED SETTLEMENT AGREEMENT BETWEEN ENVIRONMENT TEXAS, SIERRA CLUB AND SHELL OIL COMPANY

Since 2003, Shell Oil Company's oil refinery and chemical plant in Deer Park, Texas, have emitted approximately **five million pounds of air pollutants** during hundreds of so-called **"upsets" or "emission events"** – equipment breakdowns, malfunctions, and other non-routine occurrences. Environment Texas and Sierra Club sued Shell in January 2008 for approximately **a thousand separate violations** of the federal Clean Air Act since 2003 related to these emission events. The **Texas Commission on Environmental Quality** has issued fines and violation notices to Shell, but **failed to solve the problem**.

This settlement has been agreed upon by the parties and filed in court, but requires the approval of U.S. District Judge David Hittner before it can take effect.

HIGHLIGHTS OF PROPOSED SETTLEMENT AGREEMENT

Reduction Of Upset Emissions

- Within three years, Shell must **reduce its emissions from upset events by nearly three-quarter of a million pounds per year** compared to its recent performance; it must reduce its upset emissions by approximately 60% in year one, 75% in year two, and more than 80% in year three and succeeding years.
- Failure to meet these ratcheted-down annual emission caps – for total pollutants and for individual chemicals – will subject Shell to **automatic monetary penalties for each pound of pollutants above the caps**.
- Shell will face **enhanced monetary penalties** for each pound of excess benzene and 1,3-butadiene emissions, and for large exceedances of the overall caps.

This unique approach to upset events – a "hard cap" on emissions, regardless of cause – creates a powerful incentive for Shell to prevent upsets and minimize pollution releases.

Physical And Operational Upgrades to Further Reduce Emissions

- Olefins Unit Ground Flare: This flare handles an enormous load of emissions and frequently operates at combustion efficiency levels below EPA requirements. Shell must upgrade the flare and operate it at 98% efficiency – which could **reduce emissions of VOCs by hundreds or thousands of tons per year.**

- Coker Unit: Shell must make several major upgrades to the wet gas compressor at the refinery's Coker Unit, which has been responsible for significant upset events.

- Flare Minimization Plan: Shell must create and implement a facility-wide plan to reduce flaring, along the lines of California's toughest-in-the-nation guidelines.

- Tank Emissions: Shell must implement new emission controls on tanks within three years, rather than the ten years allowed by new EPA regulations for hazardous air pollutants.

- Hurricane Preparedness: Shell must implement and continuously update a facility-wide plan to minimize emissions during plant-wide emergency shutdowns.

- Steam Supply: Shell must make further upgrades to its steam supply system if steam supply failures continue to cause pollution releases.

Enhanced Monitoring of Emissions

- Infrared Scanning for Leak Detection: Shell must conduct real-time infrared scanning, focusing on the pollutants of greatest concern (such as benzene) in the areas of the plant most likely to generate unmonitored emissions (such as storage tanks).

- Flare Mapping: Shell must, for the first time, create and continuously update complete and accurate maps of all connections and flows to its flares.

- Emission Event Tracking and Prevention System: Shell must implement a facility-wide system to track and prevent upset events and "near-miss" events that could have resulted in unauthorized emissions.

The cost of all upgrades and monitoring may be in the tens of millions of dollars.

Civil Penalty and Local Environmental Projects

Shell must pay a **civil penalty of $5.8 million** for its past violations. Plaintiffs believe this is the **largest environmental citizen suit penalty in Texas history and nationally one of the largest ever against a single facility**.

The entire penalty payment will be used to fund local environmental, health and education projects:

- **$3,600,000** to the Houston-Galveston Area Council for disbursal to local school districts **to retrofit or replace polluting diesel school buses** with cleaner or alternative-fueled models, with priority given to projects in eastern Harris County.
- **$2,000,000** to the Houston Advanced Research Center **to fund the East Harris County Solar Energy Pilot Program**, a project to install and test commercially available solar energy systems on public buildings.
- **$200,000** to the Galveston-Houston Association for Smog Prevention (GHASP) and Mothers for Clean Air **to fund the Ozone Theater Project**, an award-winning interactive program to educate elementary- and middle-school students in Harris County about air pollution.

BACKGROUND: AIR POLLUTION FROM "EMISSION EVENTS" AT SHELL DEER PARK

AIR POLLUTANTS EMITTED DURING SHELL'S EMISSION EVENTS [1] (in pounds)

POLLUTANT	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*Total*
SO_2	501,840	742,378	329,876	95,187	519,562	194,196	**2,383,039**
VOCs [2]	63,625	325,208	380,449	116,471	421,172	172,466	**1,479,391**
Carbon monoxide	12,236	143,714	266,116	49,660	205,850	173,171	**850,747**
NOx [3]	11,299	20,780	85,036	5,978	132,969	24,025	**280,087**
Benzene	28,674	1,620	44,470	13,077	3,752	6,114	**97,707**
1,3-Butadiene	180	34,475	22,497	2,725	3,283	3,472	**66,632**
Hydrogen sulfide	4,848	11,266	3,807	982	6,639	2,028	**29,570**
TOTAL	**593,848**	**1,243,346**	**1,065,284**	**268,278**	**1,286,192**	**575,472**	**5,032,420**

(1) Emission data is calculated from Shell's own emission event reports to TCEQ; only emissions that violated a permit limit (even if not all of the amount emitted was above the limit) are included here.
(2) VOC totals include benzene and butadiene.
(3) NOx includes NO_2, NO and nitric oxide.

SHELL'S UPSET EMISSIONS AND AIR QUALITY IN HARRIS COUNTY

Air quality in Harris County is consistently ranked as among the worst in the nation, particularly for ground-level ozone, or smog. On more than 50 separate occasions beginning in 2003, Shell Deer Park emitted nitrogen oxides (NOx) and/or volatile organic compounds (VOCs) – both of which contribute to the formation of ground-level ozone – during upset events that occurred within 24 hours of an ozone exceedance day in the Houston Ozone Non-Attainment Area.

Air toxics are also of great concern. Certain VOCs emitted during upset events at Shell Deer Park are hazardous air pollutants, and some – such as benzene and 1,3-butadiene – are carcinogens.

Shell has also emitted illegal levels of sulfur dioxide (SO_2), which can cause respiratory problems and acid rain; carbon monoxide (CO), which also contributes to ozone formation; and hydrogen sulfide (H_2S), which smells like rotten eggs and can irritate the eyes, nose and throat.