



Children in Port Arthur play in the shadow of refineries

REFINERY REFORM CAMPAIGN

thirty six states, 125 cities and up to 67 million people

- **Too much pollution creates “hot spots”**
- **Health symptoms match known chemical health effects**
- **Lax enforcement**
- **Concentrated in low income areas**
- **No real air monitoring**
- **No buffer zones**



www.refineryreform.org

Upset Emissions

March 2002

ExxonMobil Corp. — Beaumont

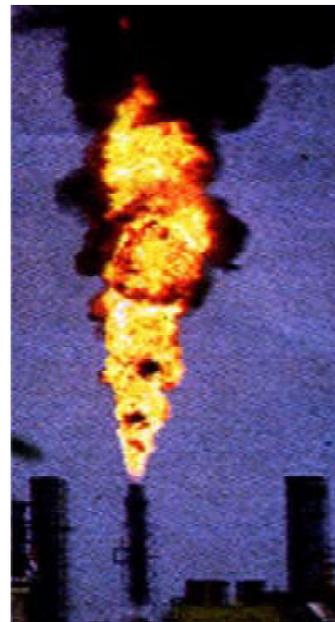
Approximate March releases: **208 tons** of carbon monoxide; 2,403 pounds of NH₃

Mobil Chemical Co. — Beaumont

Approximate March releases: **1,142 pounds of benzene**, 1,433 pounds of toluene, 230 pounds of paraxylene, 1,834 pounds of VOCs, 23,486 pounds of carbon monoxide, 555 pounds of methane, 910 pounds of ethane, 1,815 pounds of ethylene, 19 pounds of acetylene, 4,609 pounds of nitrogen oxide.

Premcor Refining — Port Arthur

Approximate March releases: **80,000 pounds** of propane/butane mix, 7,704 pounds of VOCs per hour, 207,112 pounds of sulfur dioxide, 2,218 pounds of hydrogen sulfide, 163 pounds of nitrogen oxides.



February –2002

Premcor Refining - Port Arthur

-Feb. 8, 2002, a fire occurred within the battery limits of DCU-843. **Opacity was at 100 percent** during the 42 minute upset.

-Feb. 12, 2002, a stripper feed pump tripped and caused a **23-hour upset**. About 343 pounds of VOCs, 11 pounds of nitrogen oxides and 64 pounds of carbon monoxides were released.

-Feb. 19, 2002, the Debutanizer Overhead Exchanger was leaking. About 5,650 pounds of propane and 143 pounds of hydrogen sulfide were released during the **219-hour upset**.

-Feb. 25, 2002, maintenance and repairs began on several units. The repairs were expected to take about 16 days and result in the emission of about 1,725 pounds of VOCs, 3,725 pounds of sulfur dioxide, 46 pounds of hydrogen sulfide, 535 pounds of carbon monoxide and 100 pounds of nitrogen oxides.

January-2002

BASF Corp. - Port Arthur

On Jan. 21, 2002, surging of flow tripped out the C2/C3 compressor at the Ethylene Cracker. About **57,000 pounds of benzene**, 1,055,000 pounds of ethylene, 675,000 pounds of propylene, 462,000 pounds of butylenes, 2,200 pounds of butadiene and 2,200 pounds of toluene were estimated to be released.

Mobil Chemical Co. Olefins/Aromatics Plant - Beaumont

-Jan. 1, 2002, an upset occurred due to the loss of ethylene and propylene refrigeration compressors because of compressor surges. Emissions included 1,301 pounds of hydrogen, **28,387 pounds of carbon monoxide**, 1,013 pounds of ethane, 2,317 pounds ethylene, 1,054 pounds of butadiene, 1,336 pounds of cyclopentadiene, 765 pounds of benzene, and 5,571 pounds of nitrogen oxides.

Premcor Refining - Port Arthur

-Jan. 26, 2002, an upset at DCU 843 increased the amount of spill gas to 1242 overloading the system. About **9,670 pounds per hour** of sulfur dioxide and 967 pounds per hour of nitrous oxide were released during the **9.67-hour upset**.



Hilton Kelley discusses air pollution and breathing problems with a local refinery neighbor. Port Arthur, Texas.



Hilton Kelley returns to his birthplace to help local residents.
Carver Terrace Housing Project, Port Arthur, Texas.



School is out at Lincoln High School, located within a mile of Port Arthur's petrochemical cluster. In Port Arthur's Jefferson County, nearly 25,000 children attend school near one or more petro-chemical plants.



Port Arthur neighborhood offers clear view of refinery pollution.



Carver Terrace Housing Project adjacent to Premcor Refinery
Port Arthur, Texas

Upset Emissions Jefferson County, Texas

as reported to TNRCC

March 2002

Air Products & Chemicals — Port Arthur

Approximate March releases: 169.7 pounds of carbon monoxide, 93.2 pounds of nitrogen oxides.

Ameripol-Synpol Corp. — Port Neches

Approximate March releases: 303.5 pounds of butadiene.

Arch Chemicals — Beaumont

Approximate March releases: 9 pounds of vinyl acetate.

Atofina — Port Arthur

Approximate March releases: 411 pounds of nitrogen oxides, 872 pounds of VOCs, 1,938 pounds of sulfur dioxide, 21 pounds of hydrogen sulfide, 987 pounds of carbon monoxide, 90 pounds of benzene.

BASF Corp. — Port Arthur

Approximate March releases: 5,968 pounds of ethylene.

Bayer Corporation — Orange

Approximate March releases: 1,000 pounds of rubber, 0.3 pounds of cyclohexane, 211 pounds of chlorobenzene.

Chevron Phillips Chemical Co. — Port Arthur

Approximate March releases: 32.3 pounds of benzene, 39.9 pounds of butadiene, 3.6 pound of nitrogen dioxide, 89 pounds of nitric oxide, 9 pounds of butane, 342 pounds of ethylene, 2 pounds of acetylene, 11 pounds of pentane, 9 pounds of propane, 21 pounds of propylene.

DuPont — Beaumont Industrial Park

Approximate March releases: 865 pounds of acrylonitrile, 21 pounds of acetonitrile and 10 pounds of hydrocyanic acid.

DuPont — Sabine River Works, Orange

Approximate March releases: 181 pounds of particulate matter, 4,425 pounds of nitrous oxides, 23,240 pounds of carbon monoxide, 449 pounds of butadiene, 307 pounds of benzene, 12,850 pounds of ethylene, 54 pounds of propylene, 7,254 pounds of VOCs, 27 pounds of sulfur dioxide.

Equistar/PD Glycol — Beaumont

Approximate March releases: more than 10 pounds of ethylene oxide, less than 5,000 pounds of ethylene.

ExxonMobil Corp. — Beaumont

Approximate March releases: 208 tons of carbon monoxide, 2,403 pounds of NH₃.

Goodyear Tire & Rubber Co. — Beaumont

Approximate March releases: 174 pounds of butadiene, 193 pounds of hexane, 66 pounds of butene, 46 pounds of isobutane, 4 pounds of isoprene, 16 pounds of hydrocarbons.

Huntsman Petrochemical Corp. Aromatics & Olefins Plant — Port Arthur

Approximate March releases: more than 10 pounds of nitrogen oxides and benzene.

Huntsman Petrochemical Corp. C4 Plant — Port Neches

Approximate March releases: 238 pounds of butadiene, 34 pounds of butene, 8 pounds of isobutane, 22 pounds of butane, more than 1,000 pounds of MTBE.

Huntsman Petrochemical Corp. Oxides & Olefins Plant — Port Neches

Approximate March releases: 100 pounds of morpholine.

Huntsman Petrochemical Corp. Propylene Oxide/MTBE Plant — Port Neches

Approximate March releases: 245 pounds of tert butyl alcohol, 65 pounds of DTBP, 7 pounds of methanol, 634 pounds of acetone, 2,336 pounds of isobutane, 245 pounds of methyl formate, 29 pounds of MEK.

Mobil Chemical Co. — Beaumont

Approximate March releases: 1,142 pounds of benzene, 1,433 pounds of toluene, 230 pounds of paraxylene, 1,834 pounds of VOCs, 23,486 pounds of carbon monoxide, 555 pounds of methane, 910 pounds of ethane, 1,815 pounds of ethylene, 19 pounds of acetylene, 4,609 pounds of nitrogen oxide.

Motiva Enterprises — Port Arthur

Approximate March releases: 44 pounds of nitrogen oxide, 756 gallons of DBSLR, 3,029 pounds of sulfur dioxide, 17 pounds of hydrogen sulfide, 3 pounds of carbon monoxide.

Onyx Environmental Services — Port Arthur

Approximate March releases: 1,075 pounds of particulate matter, 63 pounds of sulfur dioxide, 14 pounds of nitrogen oxide.

Premcor Refining — Port Arthur

Approximate March releases: 80,000 pounds of propane/butane mix, 7,704 pounds of VOCs per hour, 207,112 pounds of sulfur dioxide, 2,218 pounds of hydrogen sulfide, 163 pounds of nitrogen oxides.

South Hampton Refining Co. — Jasper

Approximate March releases: 5 pounds of sulfur dioxide.

February –2002

Atofina - Port Arthur

On Feb. 11, 2002, a hole developed in the tube sheet of the reactor effluent condenser on the main fin-fan. The root cause of the event was related to corrosion resulting from the corrosive nature of the material flowing through the exchanger. About 1,301 pounds of sulfur dioxide, 1,980 pounds of hydrogen sulfide, 420 pounds of methyl mercaptan, and 2.4 pounds of carbon disulfide was released as a result.

On Feb. 12, 2002, an upset occurred involving the Vessel V-14 Process Safety Valve within the Alkylation Unit. The root cause was not specified. About 125 pounds of nitrogen oxides was thought to be released as a result.

On Feb. 13, 2002, a 15-hour upset occurred due to a leak in the ISO "B" Contactor Recycle Line, which had to be shut down for repairs. About 1,333 pounds of VOCs, 130 pounds of nitrogen oxides and 942 pounds of carbon monoxide were estimated to be released as a result of the event.

On Feb. 19, 2002, a 12-hour upset occurred due to a tripped solenoid on PC-614. Approximately 2,301 pounds of sulfur dioxide and 402 pounds of nitrogen oxides were released.

On Feb. 24, 2002, the SCOT Unit was shutdown to repair a crack in the internal refractory in order to avoid a potential unplanned unit shutdown. The result was the release of about 24,000 pounds of sulfur dioxide and 200 pounds of nitrogen oxides.

On Feb. 26, 2002, a 48 hour upset occurred due to sub-freezing temperatures. About 244 pounds of benzene were released.

On Feb. 5, 2002, the acetylene converters were not working properly. This resulted in the release of about 15,956 pounds of ethylene.

On Feb. 6, 2002, an upset occurred due to the same reason. Another 12,152 pounds of ethylene were released.

On Feb. 13, 2002, a primary inhibitor pump failed. This nine-hour event resulted in the release of an estimated 37,369 pounds of propylene.

On Feb. 20, 2002, a high acetylene concentration in the Ethylene Fractionator made it necessary to flare. About 29,325 pounds of ethylene were released.

Chevron Phillips Chemical Co. — Port Arthur

On Feb. 8, 2002, start-up of the FCC Processing Section began and was expected to last for 380 hours. About 257 pounds of nitric oxide was estimated to be released as a result.

On Feb. 14, 2002, a computer control system was being replaced. During the 25 minute period about 38 pounds of butadiene, 30 pounds of benzene, 38 pounds of butane, 325 pounds of ethylene, 8 pounds of acetylene, 117 pounds of nitric oxide and one pound of nitrogen dioxide were released.

On Feb. 18, 2002, a 43-minute upset occurred due to a problem with the depropanizer tower pressure controller. About 124 pounds of butadiene, 18,248 pounds of propane, 39,261 pounds of propylene and 11 pounds of nitric oxide were released.

On Feb. 23, 2002, the plant experienced a two-hour upset due to maintenance on an exchanger. About 15 pounds of nitric oxide were released as a result.

DuPont - Beaumont Industrial Park

On Feb. 5, 2002, the purification building flare pilots went out. During the two-hour period about 100 pounds of hydro cyanic acid and 30 pounds of acrylonitrile were released.

DuPont - Sabine River Works, Orange

On Feb. 3, 2002, a three-hour upset occurred due to a level transmitter problem. About 1,336 pounds of pentene nitriles were released.

On Feb. 8, 2002, a relief valve relieved early causing a five-minute upset. About 311 pounds of carbon monoxide, 57 pounds of nitrogen oxides and 111 pounds of ethylene were released.

On Feb. 11, 2002, the NOx steam tripped out at the CoGen Unit due to high temperature. About 228 pounds of nitrogen oxides were released.

On Feb. 28, 2002, a 12-hour upset occurred due to a problem with a relief valve. An unknown amount of benzene was released.

Goodyear Tire & Rubber Co. - Beaumont

On Jan. 30, 2002, a leak in a natural gas line was discovered. About 3,630 pounds of butadiene, 706 pounds of hexane, 201 pounds of butene, 62 pounds of isobutane and 50 pounds of propane were released.

On Feb. 13, 2002, a weak reaction during production startup caused low conversion of monomer in the reactor. About three pounds of butene, 35 pounds of butadiene, 16 pounds of hexane, 7 pounds of methyl pentane and 3 pounds of methylcyclopentane were released.

Huntsman Petrochemical Corp. Oxides & Olefins Plant - Port Neches

On Feb. 2, 2002, a leak developed on a flange below the relief valve. About 17.68 pounds of ammonia were released during the four-hour event.

On Feb. 4, 2002, a spill occurred which resulted in the release of 24 pounds of textherm oil.

On Feb. 22, 2002, a low-pressure vent gas line developed a hole. About 245 pounds of tert butyl alcohol were released. Later in the day, a line over pressured and a relief valve opened as a result of failure of instrumentation. About 10 pounds of ammonia were released as a result.

Inland Paperboard and Packaging, Inc. - Orange

On Feb. 3, 2002, the Lime Kiln was shutdown. About 137 pounds of terpenes were released.

On Feb. 11, 2002, start up sequence of the No. 1 Recovery Furnace began. For 30 minutes, opacity was at 90 percent.

Mobil Chemical Co. Olefins/Aromatics Plant - Beaumont

On Feb. 13, 2002, an upset occurred due a voltage surge. Hydrocarbons were sent to the flare for approximately 96 hours.

On Feb. 26, 2002, a leak occurred in the Paraxylene Cooling Tower. The upset, which resulted in the release of about 144 pounds of benzene per day, lasted around 81 hours.

On Feb. 27, 2002, an instrument malfunction caused an upset. Hydrocarbons were sent to the flare for about 24 hours.

Motiva Enterprises - Port Arthur

On Feb. 5, 2002, hydrogen sulfide was found in the fuel gas. About 590 pounds of sulfur dioxide were released as a result. Later that day, a problem with a pressure controller caused another upset. About 761 pounds of sulfur dioxide, 9 pounds of nitrogen oxide, 2 pounds of nitrogen dioxide, 79 pounds of carbon monoxide, 8 pounds of hydrogen sulfide, 32 pounds of propane, 151 pounds of isobutane, and 49 pounds of N-butane were released.

On Feb. 12, 2002, over pressuring of settlers occurred due to an excess of propane in the Alkylation Unit. About 16 pounds of nitrogen oxide, two pounds of nitrogen dioxide, 126 pounds of carbon monoxide, 7 pounds of propane, 222 pounds of isobutane, 106 pounds of N-butane, and 10 pounds of isopentane were released.

On Feb. 27, 2002, a line froze causing a flaring incident. About 1,076 pounds of sulfur dioxide were released. Later in the day, the Delayed Coker Unit was in the process of shutting down when the heaters lost heat faster than anticipated. During the upset about 88 pounds of nitrogen oxide, 10 pounds of nitrogen dioxide and 7,379 pounds of sulfur dioxide were released.

PD Glycol Equistar- Beaumont

On Feb. 26, 2002, a Programmable Logic Controller Card went bad. Ethylene Oxide was released at an unknown rate.

Premcor Refining - Port Arthur

On Feb. 8, 2002, a fire occurred within the battery limits of DCU-843. Opacity was at 100 percent during the 42 minute upset.

On Feb. 12, 2002, a stripper feed pump tripped and caused a 23-hour upset. About 343 pounds of VOCs, 11 pounds of nitrogen oxides and 64 pounds of carbon monoxides were released.

On Feb. 19, 2002, the Debutanizer Overhead Exchanger was leaking. About 5,650 pounds of propane and 143 pounds of hydrogen sulfide were released during the 219-hour upset.

On Feb. 25, 2002, maintenance and repairs began on several units. The repairs were expected to take about 16 days and result in the emission of about 1,725 pounds of VOCs, 3,725 pounds of sulfur dioxide, 46 pounds of hydrogen sulfide, 535 pounds of carbon monoxide and 100 pounds of nitrogen oxides.

January-2002

Ameripol-Synpol Corporation - Port Neches

On Jan. 9, 2002, the plant experienced a flash fire in the 7D Recovery Unit. The root cause of the fire is thought to be rapid decomposition of a form of butadiene peroxide. Approximately 340 pounds of butadiene, four pounds of nitrous oxides, 23 pounds of carbon monoxide, nine pounds of VOCs and six pounds of particulate matter were released as a result.

On Jan. 15, 2002, due to operator error, the plant had an upset that resulted in the release of an estimated 600 pounds of styrene into the soil. An estimated 100 pounds of styrene were released into the air.

Atofina - Port Arthur

On Jan. 3, 2002, the plant had a 291-hour upset due to equipment problems caused by sub-freezing temperatures. This resulted in the release of approximately 338 pounds of VOCs, 2,445 pounds of sulfur dioxide, 49 pounds of hydrogen sulfide, 384 pounds of nitrous oxides and 1,957 pounds of carbon monoxide.

On Jan. 4, 2002, the plant experienced a problem with the Co-gen. The root cause is still under investigation. The two-hour event resulted in the release of about 460 pounds of carbon monoxide.

On Jan. 4, 2002, a frozen line from an ice plug caused diversion of C-200 2nd Stage Discharge Drum Sour Gas. The event lasted about two hours and resulted in the release of about 22 pounds of VOCs, 608 pounds

of sulfur dioxide, six pounds of hydrogen sulfide, two pounds nitrous oxides and 11 pounds of carbon monoxide.

On Jan. 5, 2002, the plant had an upset because of a loose wire on the high temperature switch. This event resulted in the release of about 192 pounds of sulfur dioxide and 2 pounds of hydrogen sulfide.

On Jan. 9, 2002, the PLC Processor program at SRU-1 failed causing a shutdown. About 70,447 pounds of sulfur dioxide, 763 pounds of hydrogen sulfide, 18 pounds of nitrous oxides and 87 pounds of carbon monoxide.

On Jan. 22, 2002, a compressor knock-drum drum high level alarm shutdown the C-200 compressor. The root cause is under investigation. About 2,975 pounds of sulfur dioxide were thought to be released as a result.

BASF Corp. - Port Arthur

On Jan. 3, 2002, the condensation of liquids in inlet lines caused low temperature shutdown of the Thermal Oxidizer. During the six-hour upset, an estimated 572 pounds of benzene were released.

On Jan. 15, 2002, high propane concentrations in the propylene made it necessary to flare. About 7,866 pounds of propylene were released.

On Jan. 21, 2002, the plant experienced an upset due to surging of flow that tripped out the C2/C3 compressor. During a 14-hour period, about 57,000 pounds of benzene, 1,055,000 pounds of ethylene, 675,000 pounds of propylene, 462,000 pounds of butylene, 2,200 pounds of butadiene and 2,200 pounds of toluene were released.

On Jan. 25, 2002, mechanical problems with core exchangers led to a shutdown at the plant. Emissions were unknown at the time of the report.

Chevron Phillips Chemical Co. – Port Arthur

On Jan. 6, 2002, the Ethylene Unit was started back up. About 809 pounds of butadiene, 673 pounds of benzene, 1,073 pounds of butane, 23,295 pounds of ethylene, 151 pounds of acetylene, 326 pounds of pentane, 393 pounds of propane, 1,273 pounds of propylene, 8,562 pounds of nitric oxide and 70 pounds of nitrogen dioxide were released.

On Jan. 12, 2002, an upset occurred due to a compressor that was tripped due to low lube oil pressure. About 39 pounds of butadiene, 32 pounds of benzene, 39 pounds of butane, 1,415 pounds of ethylene, 13 pounds of acetylene, 27 pounds of propane, 67 pounds of propylene, 59 pounds of nitric oxide and one pound of nitrogen dioxide were released.

On Jan. 19, 2002, the Cyclohexane Unit was shut down to change catalyst on vessels in reactors. This event resulted in the release of about 8.5 pounds of nitric oxide and 0.093 pounds of nitrogen dioxide.

DuPont - Beaumont Industrial Park

On Jan. 2, 2002, the AOP unit in aniline started emitting smoke from the stack. Exact emissions were not specified.

On Jan. 17, 2002, repairs to the thermal oxidizer were needed so the unit was shut down. Releases included 14 pounds of acetone, 34 pounds of acrylonitrile, 550 pounds of ethylene, 52 pounds of propane and 1,500 pounds of propylene.

On Jan. 28, 2002, work on the propylene vaporizer level transmitter caused a surge of propylene. Visible emissions were a result.

DuPont - Sabine River Works, Orange

On Jan. 3, 2002, a relief valve on the ethylene fractioner relieved early and caused a four-hour upset. Emissions included 2,837 pounds of carbon monoxide, 521 pounds of nitrous oxides, 37,668 pounds of ethylene and 864 pounds of ethylene.

Goodyear Tire & Rubber Co. - Beaumont

On Jan. 30, 2002, a leak in a natural gas line was discovered. The pipe was blocked in for repairs, which cut fuel to the down-stream flare pilot light. Releases included about 3,594 pounds of butadiene, 699 pounds of hexane, 370 pounds of butene, 62 pounds of isobutane and 50 pounds of propane.

Huntsman Petrochemical Corp. Aromatics and Olefins Plant - Port Arthur

On Jan. 31, 2002, a Dynamic Matrix Control failure caused flaring. Releases included an indeterminate amount of nitrous oxides.

Huntsman Petrochemical Corp. C4 plant - Nederland

On Jan. 8, 2002, oil from a tank got into the wastewater system, causing an upset. Releases included 52 pounds of butadiene, 17 pounds of nitrous oxides, 125 pounds of carbon monoxide, 23 pounds of butane and nine pounds of methylbutene.

On Jan. 9, 2002, a problem with the flare occurred while polyblend oil/hydrocarbon from a tank was being pumped to the wastewater stripper. Releases include 16 pounds of butadiene, 39 pounds of carbon monoxide and seven pounds of butane.

On Jan. 9, 2002, Tank 77 has an accumulation of oil/hydrocarbon in it. As the day heated up, pressure built up in the tank caused the hatch to lift to the atmosphere. Releases included 231 pounds of butadiene, 106 pounds of butane, 32 pounds of butylene, 105 pounds of pentane and 119 pounds of dimethylbutene.

On Jan. 23, 2002, an upset occurred due to a drop in the level in the tank that feeds a wastewater stripper. Estimated releases included butadiene and benzene at quantities greater than 10 pounds.

On Jan. 27, 2002, the low-flow switch malfunctioned on a pump. Estimated releases included more than 10 pounds of butadiene

Huntsman Petrochemical Corp. Oxides & Olefins Plant - Port Neches

On Jan. 1, 2002, while installing a clamp on a leak about 108 pounds of ethylene oxide were released.

On Jan. 7, 2002, the F6 unit was shut down. The event was estimated to last until Feb. 15 and result in the release of about 10,000 pounds of ethylene.

Huntsman Petrochemical Corp. Propylene Oxide/MTBE Plant - Port Neches

On Jan. 7, 2002, the unit was shut down for maintenance. Estimated emissions included 100 pounds of nitrous oxides, 500 pounds of carbon monoxide, 20 pounds of propane and 2,500 pounds of propylene.

On Jan. 21, 2002, a peroxidation section upset caused a loss of vacuum systems and shut down of the vent gas recovery system. This resulted in the release of more than 10 pounds of nitrogen oxides.

Mobil Chemical Co. Olefins/Aromatics Plant - Beaumont

On Jan. 1, 2002, an upset occurred due to the loss of ethylene and propylene refrigeration compressors because of compressor surges. Emissions included 1,301 pounds of hydrogen, 28,387 pounds of carbon monoxide, 1,013 pounds of ethane, 2,317 pounds ethylene, 1,054 pounds of butadiene, 1,336 pounds of cyclopentadiene, 765 pounds of benzene, and 5,571 pounds of nitrogen oxides.

On Jan. 23, 2002, a problem draining water from sphere #2. Releases included 63 pounds of carbon monoxide, 35 pounds of butane, 106 pounds of butadiene and 0.34 pounds of benzene.

On Jan. 24, 2002, a stabilizer re-boiler tripped due to a malfunction of the feed electrical switch. Releases included 129 pounds of carbon monoxide, 31 pounds of butane and 25 pounds of nitrogen oxides.

Motiva Enterprises - Port Arthur

On Jan. 2, 2002, the pressure relief valve on the Propane Caustic Scrubber relieved to the flare. About 19 pounds of nitrogen oxide were released.

On Jan. 7, 2002, a chlorine cylinder had a malfunctioning valve that caused an upset. About 12 pounds of chlorine were released.

On Jan. 11, 2002, an upset occurred. The cause was unknown. About 3,669 pounds of sulfur dioxide were released.

On Jan. 21, 2002, an analyzer on a boiler malfunctioned. More than 500 pounds of sulfur dioxide were released.

Premcor Refining - Port Arthur

On Jan. 1, 2002, differential problems at the DCU 843 unit caused an upset. About 243 pounds of hydrogen sulfide per hour, 3,098 pounds of sulfur dioxide per hour and 2,001 pounds of VOCs per hour were released during the event. The upset lasted 7.83 hours.

On Jan. 2, 2002, an unexpected inability to transfer sour fuel gas caused an upset. About 26 pounds of hydrogen sulfide per hour, 2,479 pounds of sulfur dioxide per hour, 295 pounds of VOCs per hour and six pounds of nitrogen oxides per hour were released. The upset lasted 168 hours.

On Jan. 3, 2002, high differential pressure resulted in an operational upset of the fuel gas scrubber. About 443 pounds of hydrogen sulfide per hour, 40,905 pounds of sulfur dioxide per hour and 3,644 pounds of VOCs per hour were released during the 2.47-hour upset.

On Jan. 4, 2002, a leak that had to be bypassed temporarily caused a change in the feed composition to the DCU 843. About 1,032 pounds of sulfur dioxide were released during the 58-minute event.

On Jan. 26, 2002, an upset at DCU 843 increased the amount of spill gas to 1242 overloading the system. About 9,670 pounds per hour of sulfur dioxide and 967 pounds per hour of nitrous oxide were released during the 9.67-hour upset.



Gasoline Alley

The rest of the country needs what Port Arthur makes. The neighbors live with the fallout

By Don Wall / WFAA

 **Click to watch video**

Texas is home to America's largest oil refineries and chemical plants. While the state produces the energy the nation needs, it also produces more industrial pollution than any other state. One neighborhood, where Texas and Louisiana meet, pays the highest price.

In Port Arthur many live in the shadow of industrial pollution. Sometimes it can take your breath away.

People in West Port Arthur call it Gasoline Alley. The poor, rundown, forgotten community exists in the shadows of the nation's busiest and most productive oil refineries and petrochemical plants. They operate 24 hours a day, 365 days a year.

Every one of those days, ten-year-old Cullen Como gets a breathing treatment for asthma. The illness causes him to miss school often. His mother and sister also have trouble breathing. The family lives right across the street from the refineries. Cullen's sister, Kendra Prince, says, "I don't think anyone should have to live so close to these refineries. Because it's dangerous, and everybody around here is sick, everybody. It's just killing off people."

Cullen's mother, Shaza Prince laments, "I wish I had the money to move away. That's about it. I wish I'd never stayed in this place, period."

Scientists who study the impact of the environment on public health say West Port Arthur is one of America's sickest



Ten-year-old Cullen Como gets a breathing treatment for asthma. The illness causes him to miss school often. The family lives right across the street from the refineries.

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Links

TNRCC: Air Pollution Trends in Texas <http://www.tnrcc.state.tx.us/air/monops/polltrend.html>

TNRCC: Beaumont / Port Arthur Nonattainment Area <http://www.tnrcc.state.tx.us/air/aqp/ei/rsumbp.htm>

communities. They blame the refineries. The plants emit a toxic soup of chemicals -- millions of pounds per year, according to the toxic release inventory compiled by the Environmental Protection Agency. These chemicals are known to cause cancer, affect brain functions, and hurt organ development and reproduction.

Environmentalist Denny Larson says, "Arguably, Port Arthur is probably one of the ten worst toxic hot spots in the country, and probably in the top five." Larson is lobbying Congress to raise awareness about refinery pollution. He has teamed up with local activist Hilton Kelley to form a local bucket brigade for Port Arthur.

Refinery Reform Campaign <http://www.toxictwostep.org/>

Port Arthur Blues: A native son returns to revitalize his pollution-plagued neighborhood http://www.refineryreform.org/downloads/News_TXOB_30102.pdf

Environmental Protection Agency <http://www.epa.gov/>

Sierra Club Lone Star Chapter <http://texas.sierraclub.org/>

Texas Environmental Profiles <http://www.texasep.org>

The bucket is a simple, but effective air **sampler. It uses a plastic bag and vacuum pump.** Air samples taken during **toxic releases have shown unhealthy levels of hydrogen sulfide, benzene and other dangerous chemicals.**

Hilton Kelley grew up here, moved away, **and has now returned.** He's on a crusade to empower local citizens to fight **for their health.** Kelley asked Anna Edwards, who suffers from breathing problems, how she reacts to the neighborhood atmosphere. "Like I panic," she replied, "and I can't catch enough air, and if I go outside, it's worse."

Kelly believes these problems are widespread. "Too many people are dying from cancer," he said. "Too many people **have thyroid problems. We have two dialysis clinics in this small town, and it's time for the citizens to say, 'Enough is enough,' and it's time to do something about it. We want to work with industry. We want them to put the necessary controls on their stacks, put the necessary controls on their valves, so they will quit emitting so much fugitive emissions in the community.**"

Most people would say, "Not in my backyard," **when it comes to the refineries.** But the people who live in Gasoline Alley say they don't have a choice; they live and work here.

Some of them work inside the refineries, **which produce the gasoline, fuel oil and industrial chemicals that power America.** Industry officials say pollution controls have improved dramatically over the past twenty-five years. But in order to meet America's growing fuel needs, **the refineries continue to expand.** That means more emissions, more pollution coming into the neighborhoods."

Refinery manager Tom Purves chairs the Port Arthur Industrial and Community Advisory Group. He says the plants **continue to reduce emissions as they address community concerns.**

Asked whether nearby residents might **live too close to the plants,** Purves says, "It's not my place to say how close or not close they should live. Our main issue has been to try to educate folks in the community about our operations, and they need to make the decision for themselves if they are too close or not. Really, the reality is that **education, and having folks understand that those of us who work here spend most of our day and a lot of our nights in these plants, and we feel like they are very safe places to work. And they**

are also environmentally very good places to work."

But breathing the air inside the plants is not as dangerous as breathing the toxic fumes coming out of the stacks, according to scientists. A recent health survey done by University of Texas toxicologist Marvin Legator reported that 75 percent of the people from Port Arthur he questioned complained of headaches and muscle aches. Eighty percent of those questioned had heart conditions and respiratory problems. Another study showed that emergency room visits increase when there is a spill or unexpected release from the plants.

Glenn Alexander, a pediatric nurse practitioner, has been treating local children for ten years. His waiting room is nearly always full. He sees an unusually large number of upper respiratory infections, allergies and asthma.

"I'm not here to bad-mouth the refineries, or anything like that," Alexander explains, "because the refineries are what our livelihood here is. But I do see things because I am a health care provider. The air is not always clear here. Sometimes it's hard for them to breathe."

Alfred Dominic has an even tougher viewpoint. "Many of my friends have died of cancer, and many of them are sick at the present time, because of the emissions."

Dominic was born in Port Arthur in 1928. He believes people should have been moved away from refineries long ago. But there are no such plans. "It is apparent by living in close proximity that it is a genocidal effect, because you are not doing anything for those people, you're just doing one particular thing, putting them closer to the emissions and they are dying."

Refinery Manager Tom Purves counters, "We take the concerns of all of our community members very seriously. Our aim as an industrial advisory group is to educate the community on what we are really doing. I think that goes a long way towards allaying their fears. I think it makes us better neighbors and it makes them feel a lot better about living near us."

The refineries and the people of Gasoline Alley have been neighbors for decades. Activist Hilton Kelley sounded a warning cry. "We need to come together as a community at this time. We are at an epidemic proportion of infant mortality deaths here. We are at an epidemic rate of cancer here, and it's time that we stand up for ourselves and save ourselves."

While community relations are improving, public health is not.

Back

Port Arthur Odor/Symptom Logs

<u>Date</u>	<u>Number of Logs</u>
1/2/00	13
1/12/00	3
1/14/00	1
1/15/00	63
1/17/00	13
1/20/00	4
1/24/00	2
1/28/00	5
Mid Jan 00	<u>77</u>
Total	<u>181</u>
2/1/00	2
2/2/00	1
2/4/00	2
2/5/00	1
2/6/00	1
2/7/00	3
2/8/00	3
2/9/00	3
2/10/00	9
2/11/00	34
2/12/00	2
2/13/00	5
2/14/00	2
2/15/00	17
2/16/00	15
2/17/00	65
2/18/00	1
2/19/00	3
2/20/00	5
2/21/00	14
2/22/00	43
2/23/00	14

2/24/00	14
2/27/00	1
2/28/00	32
2/29/00	<u>6</u>
Total	<u>298</u>

Port Arthur Odor/Symptom Logs

<u>Date</u>	<u>Number of Logs</u>
3/1/00	4
3/2/00	1
3/3/00	1
3/13/00	7
3/23/00	3
3/30/00	1
3/31/00	<u>2</u>
Total	<u>19</u>
4/1/00	18
4/2/00	1
4/3/00	5
JANUARY, FEBRUARY & MARCH	9
JANUARY & FEBRUARY	16
FEBRUARY & MARCH	1
NO DATE	22
TOTAL	<u>570</u>

UPSET/MAINTENANCE CONDITIONS
REPORTED TO TNRCC IN FEBRUARY 2000

Emission	Hydrogen Sulfide	Sulfur Dioxide	Nitrogen Oxide	Carbon Monoxide	Particulates	Hydrocarbons	Fire Training	Benzene	Ethylbenzene
February									
1*		M	M	M		M	M		
2*	M	M	M,M	M,M		M,M	M		
3		M	M	M		M,M			
4*		M	M	M		M			
5*		M	M	M		M			
6*		M	M	M		M			
7*	C	M,C	M	M	C	M	M		
8*		M	M	M		M			
9*	M	M,M	M,M	M,M		M,M		H	
10*	M	M,M,F	M,M,M	M,M,M		M,M,M		H	
11*								H	
12*									
13*									
14*							M		
15*							M		
16*	M	M	M			M	M		
17*	M	M	M		CW	M			
18*		M	M						
19*									H
20*									

* ODOR/SYMPTOM LOG SUBMITTED

C - CLARK
M - MOTIVA
H - HUNTSMAN
F - FINA

CW = Chemical waste

UPSET/MAINTENANCE CONDITIONS
 REPORTED TO TNRCC IN FEBRUARY 2000

Hydrogen Sulfide Emission	Sulfur Dioxide	Nitrogen Oxide	Carbon Monoxide	Particulates	Hydrocarbons	Fire Training	Benzene	Ethylbenzene
February								
21*							M	
22*								
23*								
24*								
25								
26								
27*								
28*		M	M	M			M	
29*		M	M	M				

* ODOR/SYMPTOM LOG SUBMITTED

C - CLARK
 M - MOTIVA
 H - HUNTSMAN
 F - FINA
 CW - CHEM WASTE

PORT ARTHUR FACILITIES NOTIFICATIONS TO TNRCC OF MAJOR
UPSET/MAINTENANCE
JANUARY & FEBRUARY 2000

Clark Refining & Marketing Inc.

6 Notifications to TNRCC

January 7, 8, 11, 12*, 18, 19, 20*, 21, 22, 23, 24, 25, 26, 27, 28*

February 7*

Huntsman Petrochemical Corp.

4 Notifications to TNRCC

January 15*, 26

February 9*, 10*, 11*, 18*, 19*

Motiva Enterprises

13 Notifications to TNRCC

January 12*, 21, 22, 23, 24*, 25, 26, 27, 28*, 29, 30, 31

February 1*, 2*, 3, 4*, 5*, 6*, 7*, 8*, 9*, 10*, 14*, 15*, 16*,
17*, 18*, 21*, 22*, 27*, 28*, 29*

Chevron

0 Notifications to TNRCC

* Odor/Symptom Log Submitted



Refineries are a national problem, contributing smog-forming and other pollutants to our major cities. This is the Sun Refinery in Philadelphia, PA.



Denny Larson of the Refinery Reform Campaign shows refinery neighbor how to take air samples using a sampling bucket

Port Arthur Blues

A Native Son Returns to Revitalize His Pollution-Plagued Neighborhood

The Texas Observer

Feature: 31/2002

BY MICHAEL MAY

After 20 years in Oakland, California, Hilton Kelley returned home to Port Arthur two years ago. He purchased a small house in his old neighborhood, the Westside, smack against the fenceline of the Premcor oil refinery, an industrial monstrosity of spherical tanks and smoking concrete spires that dwarfs the ranch-style dwellings only a few hundred yards away. Two other refineries encircle the Westside and several times a month one or the other erupts like an industrial Vesuvius, shooting flames high into the sky, jolting Kelley awake, forcing him to gasp for breath, as the whole house shakes. These are “upsets,” unplanned releases that are part of a steady stream of toxic air pollutants emitted not only from the towering smokestacks, but also from thousands of flanges and gaskets at ground level. Not surprisingly, most residents just want to escape the Westside and the toxic fumes that seem to spread sickness in their wake. Kelley knew all this before he came back, and indeed, an asthmatic cough that never bothered him in Oakland has returned. Yet the 41-year-old native chose to live here, among neighbors too poor or old to leave.

His new house is in need of work, but Kelley, who owns a construction company, can easily fix the rotting foundation and peeling paint. A more daunting task is his goal of building a solid foundation for social change in the neighborhood. When he left in 1980, this was a thriving black community, full of locally-owned stores, restaurants, and nightclubs. Now, much of the business on the Westside is conducted after hours by groups of teenagers selling drugs on dark street corners. Most legitimate commerce in Port Arthur fled to malls alongside the highway, leaving an urban core where abandoned lots predominate.

Kelley was lucky to escape, but he didn't leave willingly. Tragedy forced him out. In 1979, then a 19-year-old college student with no plans of going anywhere, he arrived home one night with his brother to find their mother lying in bed, bleeding from a gunshot wound to the head. It was clear to them that their stepfather, who later pulled a gun on Kelley, had committed the crime, but the police never bothered to question the boys. No one was ever charged with the murder. “It was a black-on-black crime,” Kelley offers in explanation. He left Port Arthur within a few months of her death, and quickly joined the Navy. He worked as an electrician in the service, and then juggled two careers as an actor and small business owner in the Bay Area. Despite achieving a small degree of prosperity, he never stopped thinking about the Westside. “Every time I came home to visit, the neighborhood looked worse and

worse,” he recalls. “And another young person I knew was in jail. It started to keep me up at night. I thought about it and figured that someone has to do something, and it might as well be me. So I came back.”

Kelley is walking on Texas Avenue, once the bustling heart of the Westside. These days it's nothing but a concrete desert, with a bar and liquor store for the lost and thirsty. He strides purposefully through this wasteland, a black leather jacket draped over broad shoulders. His shaved head is uncovered. He talks with a deep, resonant voice, his words well-practiced and full of conviction.

Arriving at his destination, what appears to be a vacant building, he stops and opens



Illustration by Michael Krone

the door. Inside group of kids in karate uniforms, led by Kelley's younger brother, Warren, practice their moves. Kick. Exhale. Kick. Exhale. This is a community center that Kelley opened a year ago. "When I first got here, I was entirely focused on opening the center," Kelley says. "I figured the most important thing was for kids to have an alternative to the streets."

He quickly realized there wasn't going to be much of a community left to save without confronting the pollution problem. This is a difficult task in an area struggling with high unemployment and a political system that has favored industrial development over people for more than half a century. Most activists in Port Arthur are passive in the face of these obstacles. Others have grown so full of rage at the injustice around them that their confrontational style has alienated potential allies.

While Kelley does not retreat from confrontation, he is seeking a third way. For example, he urges people at the center to contact the Texas Natural Resource Conservation Commission (TNRCC) whenever they notice a smell like rotten eggs or paint thinner. Since the TNRCC can't afford to monitor the air at all times, Kelley believes the more complaints they receive, the more likely they are to enforce the law. "I am not trying to put the refineries out of business," he says. "We need oil. But oil can be processed more cleanly and efficiently."

At times, air pollution regulation in the Lone Star state can seem like a Texas two-step: Industry takes a step back with its right foot, while leading with its left. The Texas Legislature has finally closed the infamous "grandfather" loophole that allowed refineries and power plants built before 1971 to avoid federal clean air standards. But George W. Bush, who left the loophole open when he was Governor, is pushing to weaken the federal laws that govern grandfathered facilities. And in 2001, just as the EPA was on the verge of forcing Texas to make significant reductions in the levels of ozone in the Beaumont/Port Arthur area or lose federal highway funds, the TNRCC saved industry by insisting that ozone drift from Houston is partly to blame. The EPA agreed, and excused Beaumont/Port Arthur from further regulation until 2007. One step forward. One step back.

Kelley takes a visitor to Carver Terrace, the housing project where he grew up. Carver Terrace could be mistaken for part of the Premcor refinery yard (its neat rows of standard-issue brick townhouses are surrounded on three sides by the complex). One side was, until recently, home to a "tank farm," where crude oil, jet fuel, and other petroleum by-products sat in rows of squat holding tanks waiting to be transported. A recent court ruling forced the refinery to move the tanks away from the neighborhood, and the field now sits barren and quarantined, with crop circle-like markings where the tanks once sat. On the other side of the field is Lincoln High School. "When I was growing up, the school band used to practice right there," Kelley says, pointing to a grassy area adjacent to the former tank farm. "It's a good thing there was never any accident, because the whole school and housing project could have been incinerated. We would smell the sour odor wafting from the tanks, but my ma would just tell us, "'That's the smell of people making money,' We never even thought it could have an effect on our lives."

Hydrogen sulfide smells like rotten eggs. Sulfur dioxide smells like a burnt match. Benzene, a carcinogen, smells like paint thinner. Through the years, Kelley and his neighbors breathed a spectrum of foul fumes, the toxic bouquet ranging from rotten to acrid, until many simply became immune to the odors. That didn't mean their bodies escaped

the effects. A recently completed health survey of Carver Terrace residents by Dr. Marvin Legator, professor of environmental toxicology at the University of Texas Medical Branch at Galveston shows the effect of the fumes on the community's health. Residents of Carver Terrace, and a separate sample from a housing project in Beaumont, were asked about symptoms of 12 diseases, and their answers were compared to a control group in Galveston. "Without question," says Legator, "the people in Beaumont and Port Arthur are suffering from many more health problems, especially neurological and respiratory diseases, than those in Galveston. The concentration of heavy industry there is having an enormous impact on their lives, and this study proves that to be the case."



Hilton Kelley

Photos by Michael May

Kelley stops at the apartment of his girlfriend, Darlene Ford, for lunch. She moves purposefully around the kitchen fixing the meal, while her five-year-old daughter, Shay, plays nearby. After lunch, Ford comes into the living room carrying a jumble of bottles, tubes, and pill containers which she spreads out over a coffee table. All of these medicines, she explains, are what it takes for Shay to cope with the air in Port Arthur. “This cream is for rashes, this is for nausea, this is for nose bleeds, this is for cough and congestion,” Ford lists. “The doctor told me that this is too much medicine for her to take just to stay in this town. I am not financially able to leave right now, but as soon as I can, I am moving far away from the refineries.”

She sighs, holds Shay close, and adds: “Somewhere without pollution.”

Even though Shay’s situation is not uncommon, it can be difficult to find people in Port Arthur willing to stand up to the refineries. That’s because there is a fear, perhaps justified, that resistance will cost a family member a good paying job. With unemployment in Port Arthur at 14 percent, few are willing to risk losing a breadwinner. Kelley thinks he has a distinct advantage. “I’m entirely self-employed, and doing fine. So I am immune to the pressure most folks around here face,” he believes.

In some ways, though, it is the perfect time to inspire people to fight pollution. With unemployment as high as it is, residents are losing faith in the long-held belief that industry is good for the local economy, no matter what. Michael Sinegal, a high school teacher in the Westside, comes from a family of refinery workers. His father worked at one until he died an early death from asbestos poisoning. A brother still works there. Sinegal says what frustrates him the most is that some refineries are excused from paying a large portion of their taxes in return for jobs, which, he says, never appear. “These days, the Westside is like a strip mine for the refineries,” he says. “They just take and take, and don’t give anything back. We breathe the poisonous air, and can’t even afford to put our kids through college. I spend thousands of dollars on asthma medication for my son, and, right across the fence, the refinery that caused his problems isn’t even paying their full taxes. It’s like they’re robbing us.”

Kelley’s activism often takes him to city hall, where he lobbies the city council and the mayor, Oscar Ortiz, on behalf of the Westside. Has Ortiz been sympathetic to such concerns? Kelley smiles, mutters something polite about “mutual respect,” and says ask the mayor.

Mayor Ortiz sits at a large polished desk at the end of a long empty room. His face is deeply lined and topped by graying black hair swept to the back. He speaks with a trace of a Texas twang in a practiced tone of dispassionate reassurance. Ortiz is Port Arthur’s first Hispanic mayor, but his only true allegiance seems to be to pragmatism. Although he is a Democrat, he voted for George W. Bush for governor and president. In the time it takes to walk across the room, he is on the phone finding the exact percentage of the tax base the refineries contribute to the town—64 percent. The petrochemical companies pay for most of the city’s services, he relates dutifully.

Ortiz doesn’t see a problem with being out of compliance with ozone standards. It would only be an issue if the air got so bad that refineries were forced to stop expansion. “Then we would be in serious trouble,” he says. “Our economy would suffer immensely.”

“I tell people, if you want jobs, you have to put up with pollution,” he continues expansively. “If we had pollution that was harmful to the human body, the EPA and the TNRCC wouldn’t allow them to keep expanding. You know, there is pollution from everything—people burning grass—everything. I am not going to sit here and blame the refineries.”

Ortiz explains that Port Arthur’s high unemployment rate is not the fault of the refineries—nor apparently does the blame rest with his administration. He says that refineries promise to hire locals, but that the city lacks an adequate pool of applicants. “There are three reasons that the labor hasn’t been provided,” he



Darlene Ford and her daughter Shay

explains in a resigned tone. “Our people can’t pass drug tests. They don’t have a college degree. They don’t have skills. It’s kind of hard to hire drug addicts without skills.

“You have to want to achieve something in life and become an asset, not a burden, to society,” he continues. “We encourage people to get their GED, to go into drug rehabilitation. But as the old saying goes, ‘You can bring a horse to water, but you can’t make him drink.’ We have 14 percent unemployment, which is ridiculous for our city. It shows me that our people aren’t ready for the job opportunities, and that is kind of sad.”

Kelley scrunches up his face when he hears what the mayor said. “Everyone in the Westside is a drug addict? Come on,” he counters. “And as for advanced training, tell me, whatever happened to OJT (On the Job Training)?”

Kelley’s house, with the kitchen and back room blocked off for repair, feels more like an outpost than a home, and in some ways, that is exactly what it is. Kelley keeps a video camera and air sampling device on hand at all times to record releases which occur at the refineries. He picks up the camera and presses play. Inside the viewfinder, a roaring smokestack sends a bright flame and thick plume of black smoke pouring across a clear blue sky. He presses fast forward, the flame flickers and dances as the time marker moves from minutes into hours.

Daytime releases are uncommon, he says. At night, when the TNRCC office isn’t open is when they most often occur. It is not unusual for the lawn to be covered with soot in the morning. “Last August, a valve blew open and a particularly noxious smell wafted through the neighborhood,” he recalls. “I got really sick. I felt a cool sensation deep in my lungs, like breathing ammonia. My heart rate kicked up. I broke out in chills. I went to the hospital, but they are largely funded by the refineries and they just told me it was something I ate.”

Texas law is not at all ambiguous about air pollution standards. The law not only specifies that every state citizen is entitled to air that will not “adversely affect human health,” but allows for the “aesthetic enjoyment of air resources” as well. It would seem, then, that causing serious harm to Port Arthur residents by enveloping them in stinky, toxic air would be against the law. But, alas, it is not so simple. Texas law is interpreted through the TNRCC’s general air quality rules, which, critics contend, are riddled with loopholes.

The largest loophole is the upset clause. Ostensibly, refineries must methodically quantify and control all emissions. However, petrochemical facilities are allowed an unlimited number of “upsets,” which, in theory, are unplanned releases of pent-up pressure that, if left unchecked, could result in devastating explosions. These are allowable as long as the facility makes a report within 24 hours. Such accidents are assumed to be a rare phenomenon; if they occur regularly, the refineries are theoretically required to fix the problem.

In reality, these toxic eruptions have become an integral part of doing business. Refineries and adjacent chemical plants use the upset clause to dispose of badly mixed batches of chemicals (instead of investing in the means to recycle them). This practice is so commonplace that one refinery worker described burning bad product as a matter of protocol. “We have to enter in all the data for a particular mixture,” said a Mobil worker who asked that his name not be mentioned for fear of retaliation. “After it’s all mixed up, we take a sample. If it’s not perfect then whoosh we send that whole brew of chemicals right up the stack to burn off. Happens all the time.”

The chemicals are burned at the top of tall smokestacks, with a pilot light just like a stove, and they produce an open flame called a flare. In theory, all of the toxic gases are thoroughly incinerated and converted into carbon dioxide and water vapor. However, the material is rarely burned properly, contends Neil Carman, clean-air program director of the Lone Star Chapter of the Sierra Club. “If you see a column of black smoke rising hundreds of feet from a flare,” says Carman, “that is not a clean burn. Those chemicals are escaping into the atmosphere intact. If there is no wind blowing, the gases can sink right down onto the neighborhoods to be inhaled.”

In January 2000, Wilma Subra, a MacArthur “genius” award-winning chemist came to Port Arthur to document the health effects of upsets. Before Subra’s visit, it had been easy for individual plants to raise doubts about whether the releases that made people sick were really from their stacks, or from some other complex (or all the way from Houston). Subra asked the community to keep logs of when they experienced certain symptoms and smells, and matched them with the chemicals that industry admitted releasing to the TNRCC. She proved that the chemicals being released could be linked to symptoms and odors that people nearby were experiencing.

Subra also armed residents with bucket samplers, devices that trap air inside a sterile container to be analyzed later at her lab. The bucket samples provided a chemical fingerprint that pointed to the guilty party (certain facilities produce certain chemicals), and showed that air quality standards were being exceeded at ground level. “This is the first time communities have been able to take a simple snapshot of what goes into their lungs,” says Denny Larson, refinery reform coordinator of the Sustainable Energy and Economic Development Coalition (SEED), an Austin-based group that works closely with Kelley. “With just a few samples we can collapse the house of cards erected by industry that the air is safe to breathe.”

In 2000, thanks to a bill passed by the Legislature, the TNRCC initiated a program to reduce upsets. While some accidents are unavoidable, new TNRCC regulations force companies to prove releases were not preventable, and, if so, how they will fix the problem. The new law also requires TNRCC to consider for the first time a company’s compliance history when granting new permits. “We are putting a lot of pressure on facilities that have repeated upsets,” insists Virgil Fernandez, a spokesperson for the TNRCC. “We are sending out investigators to make sure the necessary maintenance is completed.”

There is one drawback to increasing the punishment—it might simply minimize reporting. In the past, the TNRCC has relied on the good faith of the plant managers to report releases accurately. In practice, some have done so, and many have not. It is particularly hard to tell what actually went into the air, because, previously, the TNRCC did not require managers to provide accurate measurements of what the flare burned—making it impossible to know whether the chemicals were pumped into the air for a few minutes or a few hours. New reporting rules changed this, but refineries still may simply decide not to report upsets since the possibility of getting caught is slim.

A TNRCC employee reached by phone whispered conspiratorially from his cubicle that he had examined the data from a number of facilities that purported to have clean records. “They just weren’t reporting them,” he claimed, and then begged for anonymity. However, this same employee was optimistic that the new laws will change the culture at TNRCC. “Upsets are finally being prioritized by the top brass here, which will at last allow us to do our job,” he said.

The Subra study helped focus the community’s attention on the pollution issue, but it also provided Kelley with a challenge. While MODEL, the community group that had brought Subra to Port Arthur, advocated a conciliatory approach, others were angrier than ever. “I really didn’t know who to lean on,” Kelley recalls. “There is so much tension between different activists. I finally decided I had to do things on my own.”

The divisions emerged after a meeting MODEL held to release the findings of the Subra study. The meeting was designed to spark a dialogue between the community and industry, which, it was presumed, would no longer be able to deny that their emissions were a problem. But after the initial meeting, the petrochemical facilities declined to negotiate directly with MODEL. Instead, they decided to form their own organization and invited select community members to join. The group, officially known as the Port Arthur Industry and Community Leaders Advisory Group, has now been meeting for more than a year, presumably ushering in a new era of cooperation.

Sue Parsley, Public Affairs Manager at the Motiva refinery and member of the advisory group, thinks this is the case. Over the phone, she maintains the cheerful optimism that is the hallmark of her profession. She lists all the wonderful things that industry and the community can accomplish by working together: improve the schools, set up an emergency line to warn about industrial accidents and bad weather, etc. She fails to mention emissions or unplanned releases. When pressed, Parsley tersely says that they have always done their best to control pollution. “We are preparing a presentation, so we can show how our technology is, and has been, state of the art,” she says.

Kelley was working with MODEL when he first arrived in town, but in time, he came to believe industry had gotten the better of the group. “The folks at MODEL have done a lot for the community,” he says. “But, lately, they seem satisfied just to be sitting across the table from industry. I don’t believe that’s going to change anything. The only thing that will make them change is legal action.”

Others agree. In Corpus Christi, for example, a group of residents has filed a class action suit against Valero Energy Corporation over upset emissions. After hundreds of hours of research, the group’s lawyers were able to document that the refinery’s upset emissions in 1995 were more than ten times larger than normal permitted emissions. (The company was never fined by the TNRCC for those upsets.)

Some in Port Arthur have lost faith in the system. One such industry critic is Reverend Roy Malveaux, who advocates a more drastic solution. "It is in everyone's best interest to create a mile and a half buffer zone around the refineries," says Malveaux. "It's good for industry, because they are free from liability from both emissions and accidents. It would provide more security if a terrorist decided to target a refinery. And it would finally put an end to the legacy of environmental racism we have here in Beaumont and Port Arthur."

Such a solution would mean moving entire neighborhoods at tremendous cost to industry. Although Kelley agrees that a buffer zone would be ideal (it has been done elsewhere), he thinks the simple enforcement of existing laws could also make a huge difference in people's lives.

In a narrow, barren room at the community center, Kelley outlines his plans. "I am going to set up a computer lab with Internet access in here," he says. And the kitchen, just a sink now, will one day be able to feed groups that come for training and educational seminars. Every month he turns the center over for long meetings about the pollution that plagues Port Arthur. In the days before the gatherings, Kelley takes a stack of flyers and stands in front of the local grocery store, hoping to find folks willing to help him document what upsets are doing to the community. Most seem interested, he says. And at each meeting, one or two new people participate. It's a start, albeit a slow one. Kelley hopes that with a little luck and a lot of activism, his story will become a trend, and others will return to Port Arthur. "I want to be right here when the businesses and families start coming back to the Westside," he says.

Michael May is a freelance writer living in Austin.

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Pollution Problems and TNRCC Enforcement Failures at the ExxonMobil Baytown Refinery

Overview of the Texas SEED Coalition Report on the ExxonMobil Baytown Refinery

Download the report overview as PDF for printing

This report is the first of its kind in the United States - an in-depth investigation of the operations of a single, massive refinery in Texas. Focused on the largest refinery in the United States (based on crude oil capacity) ExxonMobil's Baytown refinery, this analysis exposes how Texas industrial polluters can repeatedly flaunt the law, contaminate the air and threaten public health, while the Texas Natural Resource Conservation Commission sits back and lets them do it.

This study examines the dirtiest plant in Harris County, which is the center of the Houston, Texas area - the worst ozone non-attainment area in the United States. The region is currently struggling to develop a plan to meet national air quality standards for hourly ozone.

This struggle is particularly significant in light of the gross enforcement failures at the ExxonMobil plant. Many of these enforcement failures can be traced back to the Bush Administration - including the administration's work to relax permitting requirements and promote voluntary compliance efforts.

The study is also significant because refineries are enormous sources of air toxics and fine particulates. It should also be pointed out that ExxonMobil is party to a lawsuit opposing the current air plan for Texas and is seeking a weakening of the clean air plan.

The study finds a number of serious problems both with refinery operations as well as the failure of the state environmental agency, the Texas Natural Resource Conservation Commission (TNRCC) to adequately monitor operations and enforce existing laws.

As the study is a highly technical one, this overview has been developed to help readers digest the information contained therein. This overview divides the report into several sections - context of study, problems at ExxonMobil Baytown, problems with TNRCC enforcement, and problems with EPA enforcement. Each statement includes a page reference so the reader can refer to the original report for more detail.

Context of Study

- ExxonMobil Baytown Refinery ("the refinery") is the largest refinery in the United States.
- The refinery is the largest source of smog-precursors nitrogen oxides and volatile organic compounds in Harris county. (p. 3)
- The refinery is the largest source of sulfur dioxide and particulate matter in Harris County. (p. 3)

- The refinery is located to the east of Houston, a location that allows afternoon breezes to send the plant's emissions directly into central locations of high ozone potential and formation. (p. 3)

ExxonMobil Baytown Refinery problems

1. Repeated and persistent accidental release (upset) and related problems

- In 1998, the plant released more sulfur dioxide during maintenance and upset events than it did for all its normal operations. (p. 19)
- Last year was the worst for ExxonMobil's releases for upsets and maintenance in the last ten years. (p. 19)
- From 1998-2000, 116 separate emissions episodes (upsets and maintenance related) came from just five processes - a very high number of incidents for so few sources. This is indicative of ongoing problems that the plant is failing to correct. (p. 20)
- ExxonMobil repeatedly fails to maintain crucial backup equipment so it is available when needed and does not have backup equipment on processes where they should to avoid high emissions. (p. 28-31)
- The record of upsets shows that ExxonMobil repeatedly fails to maintain process equipment, backup equipment, fails to test and inspect process integrity, or puts production on hold while key equipment is maintained. (p. 27)
- Emissions from planned maintenance have exceeded emissions from upsets. This indicates that plant management is routinely failing to schedule and conduct maintenance properly. Work that is planned for should create fewer excess emissions than incidents that are unexpected. (p. 19)
- Long periods of accidental releases, with some cases extending for weeks at a time. (p. 28)

2. Failure to report problems and emissions

- In just the year 2000, nearly half of the plant's upset reports failed (in violation of TNRCC rules) to identify the equipment that had problems. (p. 21)
- The company also frequently failed to identify how the pollution resulting from the accident was actually emitted to the atmosphere - key information for officials to know to understand how the plant may be affecting air quality and public health. (p. 21-22)
- From 1998-2000, the plant also frequently neglected to submit "actual" emissions reports following the filing of a "potential" emissions report, which is a violation of TNRCC rules (but never enforced in ExxonMobil's case). (p. 23)
- The company frequently fails to provide emissions calculations to justify its estimate of emissions releases during upset events. Thus, there is no way for the TNRCC to check whether or not these estimates are realistic. (p. 25)

3. Under-estimation of problems and emissions

- The plant appears to be under-reporting its toxic emissions by not reporting to EPA all emissions it has told the TNRCC are emitted. (p. 13-14)
- ExxonMobil appears to be failing to identify all of the specific chemicals found in the petroleum hydrocarbons that it is emitting to the air (p. 12-14)
- The records indicate that ExxonMobil has an overwhelming tendency to revise its reports of upset emissions downward in subsequent reports to the TNRCC. (p. 24)
- The company often underestimates emissions from leaks by limiting the time frame reported. For instance, emissions from leaks are reported as though pollution began to escape at the time the leak was noticed, as opposed to when the leak might actually have begun or from the time of the last inspection. (p. 25)
- The plant incorrectly reported its upsets for hydrogen sulfide in 1999. (p. 19)
- The plant follows inconsistent reporting protocols with flaring of VOCs. (p. 24-25)

4. Failure to properly maintain emissions monitors

Three of ExxonMobil's Continuous Emissions Monitors were frequently off-line for months at a time, essentially obliterating the emissions records during these periods. (p. 42).

5. Possible Violations of Federal Law on Reporting and Modifications

- The records indicate the plant has failed make Emergency Planning and Community Right to Know Act reports for several toxic compounds - including hydrogen cyanide, cresols and others. There is no way to understand the toxic effect of the refinery unless the company is clear on what toxicants it emits. (p. 12)

- ExxonMobil may have violated New Source Review requirements by making substantial investments in its carbon monoxide boilers without first obtaining a permit required by the Clean Air Act. (p. 47)

TNRCC problems

The record shows that the TNRCC's monitoring and enforcement at the plant is frequently superficial and undemanding of performance or compliance. Specifically,

- 1. Failure to issue Notices of Violations when violations have occurred**
 - ExxonMobil violated 72 TNRCC rules from 1984 through the present, but the TNRCC only issued 6 legally binding orders to abate those violations and only imposed \$64,000 in penalties in total over that period.
 - Despite dozens and dozens of events which could merit Notices of Violations and penalties for violations of the law, the TNRCC failed to act in most cases. These violations include actions that caused upsets that were avoidable, there were reporting violations, failure to properly report upsets, failures to identify the cause of upsets.
 - This failure to seek enforcement is especially startling in light of the fact that the same pieces of equipment consistently fail or have problems. (p. 20)
- 2. Failure to pursue discrepancies or violations regarding improper reporting**
 - Despite the high number of upset reports which failed to specifically identify which equipment failed or where the emission occurred, there was not a single instance in which the record shows the TNRCC took action for this kind of defective reporting. (p. 23)
- 3. Failure to use common sense procedures to enforce the law**
 - Despite a history of problems, the TNRCC gave the plant advance notice prior to conducting its annual inspection in 2000. (p. 37)
- 4. Failure to conduct independent review of emissions and other reporting**
 - The TNRCC routinely accepts ExxonMobil's estimates of emissions incidents with no independent check or investigation. (p. 24). This is part of a pattern where the agency accepts ExxonMobil's word on an event, then writes in the report "no problems noted" for the plant.
 - Batches of reports have waited for months for review by the agency and then are signed in a single day, sometimes months after the events in question (p. 26).
 - Despite the fact that the ExxonMobil refinery is currently in violation of state and federal clean air laws, the TNRCC is moving forward with consideration of new construction permits for new operations - one to modify the coking process and another for a purpose which was not specified in the record. (p. 50)
- 5. Failure to maintain complete and accurate records**
 - TNRCC data for 1990 and 1992 particulate emissions are missing. (p. 2)
 - TNRCC files on the plant do not appear to be complete. The Houston and Austin offices each contain records not found at the other, so a survey and compilation of records from both offices was necessary to achieve what could be considered a complete record. The local office is supposed to contain a complete record on the plant; citizens and public interest groups are not supposed to be required to travel back and forth to put together a complete record on their own. (p. 17)
 - The TNRCC's public information specialist in Austin provided incorrect assurances that the record in Austin is a complete record of compliance and enforcement. This was found to be extremely untrue when the files in Houston were compared to the Austin files. (Author communication)
- 6. Failure to provide plans for improvement**
 - Despite repeated requests, the TNRCC did not provide ExxonMobil's plans to limit emissions from startups, shutdowns and malfunctions (p.26).

EPA Problems

- EPA's national web site on industrial emissions yields the wrong result on emissions for ExxonMobil's refinery. Data for 1996 emissions conflicts with the TNRCC's, which is supposed to be the primary source of the information. (p. 1)

About the Study

The study is based on an exhaustive analysis of tens of thousands of records on the plant found in the Houston and Austin offices of the TNRCC, as well as subsequent information requests and communications with the TNRCC and the Environmental Protection Agency (EPA). The study included an intensive review conducted for years 1995 through 2000 when records contain the most detail.

The study was conducted over a three month period from February through April of 2001, by Alex Sagady, Environmental Consultant.

Many thanks to Dr. Neil Carman of the Lone Star Chapter of the Sierra Club, for his thoughtful guidance, review and editing of this report and overview.

The complete report is available from the SEED Coalition. Contact us at 512 479-7744 or download the report from www.seedcoalition.org.

Go back to ExxonMobil: Out of Control

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