

A Smell So Sweet to Die for...

My birthplace Grindstone, PA is about 12 miles south of Donora, PA which is 25 miles southeast of Pittsburgh **Attachment A**. Donora is the birthplace of baseballs' 1948 Triple Crown winner and H O F player Stan "the Man" Musial, another H O F Ken Griffey Jr and Dad Ken Griffey Sr who was part of the Big Red Machine that dominated major league baseball in the 1970's.

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I want to talk this evening about an event that occurred when I was very young living in Grindstone Pa. First, I'd like to tell you about Grindstone.

Grindstone was a coal mining town then with a population of about two thousand. In an era of men being the primary bread winners, about 60 percent of the men worked in the coal mines and 30 percent in the steel mills. The remaining 10 percent worked in support system as butchers, bakers, candlestick makers etc. The few women who worked did so as secretaries, clerks and school teachers.

Being a part of the Appalachian Mountains, every place in that area is either on a hill or in a valley. My home was half up a small hill that overlooked a coal mine. As a matter of fact, I could have thrown a baseball and hit the tops of cars of workers parked in front of the mine. **Attachment B** (1) Colonial 4 mineshaft, (2) slate/slag dump (3) my house.

On the other side of the coal mine were railroad tracks that a little coal burning train brought in work supplies and carried away the mined coal. **Attachment C** (map). On Mondays (wash days) the housewives were very savvy about the train's schedule. Because the coal burning engine would spew its foul smell and soot up the hillside and a rewash with the wringer washer machine would be required. Just beyond the railroad tracks was the Sulphur Creek created from the water being driven through the coal mine to wash the sulfur from the coal. About ten yards away were coke ovens **Attachment D** that when burning, cast an eerie glow that was both haunting and created the darndest odor over the area. By the way, my house was one road over from the horse lot that housed the animals that pulled the smaller rail cars. So, between the little engine that could, the sulfur creek and coke ovens and being a victim of having pulled my grandpa's finger I learned a lot about bad smells early in life.

## **A brief view of the DONORA SMOG OF 1948 that took 20 lives: A Smell So Sweet to Die for, or as Dr. Devra Davis titled her book: When Smoke Ran Like Water.**

In the 1940s, smoke in the air was considered to be a sign of progress and prosperity, whereas clear skies could signal economic depression and unemployment. However, the smoke or smog that began Tuesday October 26, 1948 was exceptional even by those standards. Donora was once known as "Horseshoe Bottom" because it is tucked in an inside bend of the Monongahela River **Attachment E**. Donora owed its financial success to the 20-block-long (or about a mile) mill works that brought jobs and dollars. Donorans relied on two major industrial plants for their livelihood, the American Steel and Wire plant **and** the Donora Zinc Works. Its workers smelted zinc and spun the stout suspension cables used to hold up the Golden Gate Bridge in San Francisco and the double-decked Verrazano-Narrows Bridge in New York City **Attachment F**. H O F baseballer Stan Musial, worked in the zinc mill after his first professional season. The whole of S-W PA was either high polluting mining towns or industrial mills. Remember, Pittsburgh was known for years as the "Smokey City".

At first, to the residents of Donora, the conditions weren't particularly unusual. In fact, the smog did not stop the annual Halloween parade on October 29, when children displayed their costumes on Main Street. The following afternoon, Saturday the thirtieth, the Donora Dragons played a high school football game against the Monongahela Wildcats despite extremely poor visibility. In the game between the Dragons and the Wildcats the two teams **ran** the football rather than throwing it because their vision was impaired by the fog.

[Lorraine Boissoneault's description in the](#) Smithsonian magazine

"The yellow fog arrived five days before Halloween in 1948, swaddling the Pennsylvania city of Donora and the nearby village of Webster in a nearly impenetrable haze. Citizens attending the Donora Halloween parade squinted into the streets at the ghostlike figures rendered nearly invisible by the smoke. "

The **first** major contributor to the fog was the pollution emitted by the Wire plant and the Zinc Works. These mills regularly emitted billowing plumes of smoke, and in particular, the Zinc Works had been identified as a major polluter because of its emissions of hydrogen fluoride, carbon monoxide, nitrogen dioxide, multiple sulfur compounds, and heavy metals within fine particulate matter. **Attachments G & H.**

The Public Health Service report also acknowledged the community contribution to the pollution by the high volume of barges on the river and the residential use of coal-burning furnaces. In future references I'll simply refer to carbon monoxide, hydrogen fluoride, sulfuric acid, nitrogen dioxide, fluorine and other poisonous gases as pollutants. It'll save me from tripping over my tongue.

**The second** major factor identified by the Public Health Service was an unusual weather system. The smog first settled throughout the town on Tuesday October 26 1948 when a temperature inversion occurred. A cold front moved in, after which there was very little wind. As the air stagnated, cold air became trapped below warmer air in the inversion layer, which, in turn, acted as **a lid** over the valley. The air entrapment was enhanced by the unique geography of Donora, which was **the third** major contributor to the smog. The region was surrounded by hills and cliffs that rose to about 400 feet. The community was **captured** within the confines of the horseshoe bend in the Monongahela River, and effluent from the local coke ovens, coal stoves, and plants' smokestacks that lingered for five days within this geographical bowl, trapped by the inversion at 150 feet. Many people lived below this altitude. **Attachment I**

The fog continued building in Donora on Wednesday. By then it was causing coughing and other signs of respiratory distress for many residents of the community in the Monon River valley. Many of the illnesses and deaths were initially attributed to asthma. The smog continued until it rained Sunday October 31st, by which time 20 Donorans had died and approximately one third to one half of the town's population of 14,000 residents had been sickened. Another **50** residents died of respiratory causes within a month after the incident; notable among the fatalities was Lukasz Musial, the father of baseballer Stan Musial.

Pollutants from Donora Zinc Works and the Steel & Wire plant were frequent occurrences in Donora. What made the 1948 event more severe was the temperature inversion. The warmer air aloft traps pollutants in a layer of colder air near the ground. The pollutants in the air mixed with fog to form the thick, yellowish, acrid smog that hungover Donora for five days. The pollutants that were usually dispersed into the atmosphere were caught in the inversion for nearly a week and accumulated until rain ended the weather pattern.

Despite the smoky, acrid haze, Dr. Charles Stacey, then a 16-year-old high school senior and still a resident of Donora, said he wasn't scared. "We didn't know this

was anything different," said Stacey, who was the Donora Dragon football team equipment manager at the time.

He'd smelled bad air before, many times. Perhaps he had a Grandfather also! However, Stacey had no way of knowing then that the **stew** of sulfuric acid, nitrogen dioxide, carbon monoxide and fluoride pollution pumped into the air by U.S. Steel Corp.'s zinc and steel mills and trapped over the valley by a weather inversion, would last **five** days and create its own haunting ghosts. That Halloween week, was in his words, like **hell** with the **lid** on.

Heroes began to emerge during the four-day smog. Chief John Volk of the Donora Fire Department and his assistant Russell Davis responded to calls from Friday until Sunday night. **Attachment J.** The smog was **so** intense that driving was nearly abandoned. Those who chose to continue driving were risky. "I drove on the left side of the street with my head out the window. Steering by scraping the curb." recalls Assistant Chief Davis. When terrified residents began calling doctors and hospitals to report difficulty breathing, Dr. William Rongaus carried a lantern and led the city ambulance by foot through the unnavigable streets.

The eight doctors in the town, made house calls much like the firefighters during the period of intense smog. Often visiting the houses of patients who had been treated by another doctor. This was a result of patients calling every doctor in town in the hope of getting treatment faster. It was not until mid-day Saturday the director of the American Red Cross, established with the Telephone company switchboard that all calls going to the doctors' offices would be switched to the emergency center established in the town hall. **Attachments K & L**

On Saturday, around 2 a.m., the first death occurred. In two days, 19 more people from Donora and Webster, the adjacent village, were dead. They depleted their supply of oxygen and borrowed more from nearby municipalities... McKeesport, Monessen, and Charleroi. The hospital ran out of beds, the funeral homes ran out of caskets and the florists; flowers. Hundreds flooded the hospitals, gasping for air, while hundreds more with respiratory or cardiac conditions were advised to evacuate the city. It wasn't until the rain arrived at midday on Sunday that the fog finally dissipated. If not for the fog lifting when it did, Rongaus and Dr. Clarence Mills, a researcher at the University of Cincinnati, believed, "The casualty list would have been 1,000 instead of 20."

In addition to Stan Musial and the Griffey's, Southwest PA is a Breeding Ground for the NCAA and NFL athletes...Leon Hart, Mike Ditka and some of the greatest quarterbacks ever John Unitas, Jim Kelly, Joe Montana, Joe Namath and Dan Marino. Also, there were many WWII heroes from this area. These men were so hardy that American Steel and Works Executive Harry Loftus stated "These guys stormed the beaches of Normandy, what's a little smoke to them." **By the way**, at the high school football game that Saturday afternoon, Dr. Stacey remembers the public address announcer telling one of the football players, Stan Sawa, **to go home** in the middle of the game. Stacey found out later that Stan's father had **died** from the pollution. *PPG*

"The air in the zinc mill was so bad", Dr. Stacey said that the Spanish workers brought into town by the company to do the dirty and dangerous jobs worked only four-hour shifts and were paid for eight. "The white smoke that came from the zinc smelting furnaces and smokestacks killed plants and trees on both sides of the river", Stacey said. Researchers analyzing the event have focused likely blame on pollutants from the zinc plant, whose emissions had killed almost all vegetation within a half-mile radius of the plant. Residents tried in vain to grow gardens, lawns, any type of vegetation without success due to the sulfate residue on the ground. **Attachment M.**

"Many claim the rain **caused** erosion so bad it exposed the tops of coffins up the hill from the zinc works in Gilmore Cemetery, and one of the coffins was even **washed** down onto Meldon Avenue," Dr. Stacey said. November 1, 1948 was the primary funeral and burial day. Neighbors said the traffic going to the cemetery was like a parade...as soon as one procession went, another came and another one followed, for several days." **Attachment N**

Dr. Devra L. Davis, director of the Center for Environmental Oncology at the University of Pittsburgh Cancer Institute, has pointed to autopsy results showing fluorine levels in victims in the lethal range, as much as 20 times higher than normal. Fluorine gas generated in the zinc smelting process became trapped by the stagnant air and was the primary cause of the deaths quoted in her book [\*"When Smoke Ran Like Water"\*](#)

In the ensuing months, an additional 50 people died over the number that would normally be expected. And the town's mortality rate remained

significantly higher than that of neighboring towns in the Monongahela Valley for a decade. It was not until Sunday morning, the 31st of October, that the operators of the plants and the town officials met to resolve the issue. Townspeople requested the plants temporarily cease operations. The superintendent of the plants, L.J. Westhaver, said the plants had already begun shutting down operation at around 6 a.m. that morning. However, the plants resumed normal operation as soon as the rain began alleviating the smog.

U.S. Steel still has not turned over to researchers its archival data related to the fatal smog. Lawsuits were filed against U.S. Steel, which never acknowledged responsibility for the incident, calling it "an act of God". The steel company did not accept blame, noting that the company was prepared to show at trial that the smog had been caused by a "freak weather condition" that trapped over Donora "all of the smog coming from the homes, railroads, the steamboats, and the exhaust from automobiles, as well as the effluents from its plants." U.S. Steel closed both plants by 1966. However, it reached a settlement 1951 in which it paid about \$235,000 to the 80 principals in the lawsuit. After legal expenses were factored in Donorans settled the 130 damage suits asking for \$4.6 million at about 5% of what had been sought. "No one got rich," said Dr. Stacey. "After the lawyers were paid, most people had enough to buy a television set." **PPG**

The 1948 Donora smog was the worst air pollution disaster in U.S. history. It jumpstarted the fields of environmental and public health, drew attention to the need for industrial regulation, and launched a national conversation about the effects of pollution. In doing so, pitted industry against the health of humans and their environment. That battle has continued throughout the 20th century and into the 21st, with short-term economic interests often trumping long-term consequences. Donora taught Americans a powerful lesson about the unpredictable price of industrial processes.

This event led to the first large-scale epidemiological investigation of an environmental health disaster in the United States. Questions remain about the

long-term effects of the smog, because higher rates of cardiovascular disease and cancer than were expected were observed in the region in the decade following the smog.

Donora much later accepted its tragically historic role as catalyst in the ongoing efforts to control air pollution. The incident was little spoken of until a historical marker was placed in the town in 1998, to commemorate the 50th anniversary of the incident. The 60th anniversary, in 2008, memorials for the families of the victims and other educational programs. The Donora Smog Museum was opened on October 20, 2008. Located in an old storefront that formerly housed a Chinese restaurant at 595 McKean Avenue near Sixth Street. The slogan "Clean Air Started Here" is their mantra.

"Clean Air Started Here." is not hyperbole. At the end of October 1948, the communities of Donora and Webster in Pennsylvania were visited by a smog that changed the face of environmental protection in the United States. Conservative estimates showed that 20 individuals died, while an additional 5900—43% of the population of Donora—were affected by the smog. Today, fewer than 6,000 people live in Donora.

*I would like to thank The Donora Smog Museum for their assistance in providing information for writing this paper. The Museum features a collection of archival materials documenting the Donora Smog of 1948, that killed 20 people in Donora, Pennsylvania. Their address is: 595 McKean Ave, Donora, PA 15033. Their normal hours are: 11AM Sat. The Museum is closed due to the pandemic. They may be reached by phone at (724) 823-0364.*

*The Museum graciously provides information including magazine, newspaper, radio articles, and pictures regarding the Smog. The expectation is to provide a computer thumb drive and a modest donation of twenty-five dollars or more as an indication of your support for the Museum.*

Inside the Smog Museum, Dr. Stacey, a leader of the Donora Historical Society and the museum committee, likes to take visitors on a tour that celebrates the smoky early 20th-century prosperity of Donora as it documents the darkest days of its dirty past.

Although the Public Health Service research team positively didn't identify a single contaminant that caused the illnesses during the smog nor the precise source. They were able to clarify the contributing factors. They suggested reducing plant

effluent and creating a system whereby weather alerts could be used to warn the region of conditions favorable to another smog.

## LONG-TERM EFFECTS OF THE SMOG

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Researchers conducted a study of cancer deaths in Donora from 1948 to 1957, as well as those in other nearby communities. There was a significantly higher proportion of cancer deaths in Donora in the decade prior to 1948. Also, in the decade following the smog, higher than expected CVD and cancer mortality rates were observed. It is possible that one of the central contributors to the smog—pollution by the Donora industrial plants—could affect environmental and public health even today, as addressed in a recent analysis of sediment in a lake in the region. Dr. Stacey said “the hills on both sides of the river are green today, and the air is much cleaner than it once was. I'm glad Donora played a role in that. I can see across the street now, but I know, too, there's still a long way to go.”

Paul Harvey

EPA Administrator (1970–1973) **William Ruckelshaus**

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Ruckelshaus became the [United States Environmental Protection Agency's](#) first [Administrator](#) when the agency was formed on December 2, 1970, by President Richard Nixon. Although many people were mentioned as possibilities for this new position, Ruckelshaus got the nod based upon the strong recommendation of the [U.S. attorney general John Mitchell](#). The idea was initially proposed in a [Newsweek](#) opinion column.

The burning of the [Cuyahoga River](#) had created a national outcry; the Justice Department under Mitchell filed a civil lawsuit against the Jones and Laughlin Steel Corporation "for discharging substantial quantities of [cyanide](#) into the river." Ruckelshaus' sought an injunction "to halt the discharge of these deleterious materials into the river."

Also during his first tenure at the EPA, Ruckelshaus advocated for and enacted a ban on the insecticide [DDT](#).<sup>[3]</sup>

Ruckelshaus laid the foundation for the EPA by hiring its leaders, defining its mission, deciding on priorities, and selecting an organizational structure. He also oversaw the implementation of the [Clean Air Act of 1970](#).

In April 1973, there was a major reshuffling of Nixon administration posts. Ruckelshaus's record of success at EPA and Justice and his reputation for integrity led to his being appointed acting [director of the F B I](#).

Later in the same year, Bill Ruckelshaus was promoted to [U.S. deputy attorney general](#), second in command of the [U.S. Department of Justice](#) in the midst of the growing [Watergate scandal](#)

On Saturday, October 20, 1973, [U.S. attorney general Elliot Richardson](#) and then Ruckelshaus resigned their positions rather than obey orders from President Nixon to fire the [Watergate](#) special prosecutor, [Archibald Cox](#). Ultimately, the President's resigned in August 1974. Speaking truth to power is an exemplary characteristic whether to Pharaoh, Caesar, Emperor, King or President.

In 1983, President [Ronald Reagan](#) appointed Ruckelshaus to serve as EPA Administrator again. On November 28, 1984, Ruckelshaus retired as EPA head, effective January 5, 1985, around the start of President Reagan's second term.

Of his two tenures at EPA, Ruckelshaus later reflected:<sup>[23]</sup> I've had an awful lot of jobs in my lifetime. I've concluded there are four important criteria: interest, excitement, challenge, and fulfillment. I've never worked anywhere where I could find all four to quite the same extent as at EPA. I can find interest, challenge, and excitement as [board chair of a company]. I do have an interesting job. But it is tough to find the same degree of fulfillment I found in the government. At EPA, you work for a cause that is beyond self-interest and larger than the goals people normally pursue. You're not there for the money, you're there for something beyond yourself.

**CONCLUSIONS** Nonetheless, work remains to be done as air pollution continues to threaten the health of the public. Thus, the specter of the 1948 smog incident and its precipitating causes remains to this day. The potential exists for weather

events that could again unleash contaminants that are part of the smog's legacy. In addition, developing countries in particular continue to face major public health threats from air pollution and smog. As with the warnings that took place after the Donora Smog disaster, we ignore these smog incidents at our peril.

Despite the efforts of industry to cast the tragedy as an "act of God," the fatalities in Donora received national attention. That event changed the way air pollution was viewed, moving it rapidly from an aesthetic issue to a public health concern, and spurred local, state and federal officials to control toxic air pollution.

Allegheny County adopted a smoke control ordinance in 1949, and the U.S. Air Pollution Control Act of 1955 was the first federal legislation to recognize pollution as a problem.

The 1970 Clean Air Act established regulations limiting unhealthy smog, sulfur dioxide, carbon monoxide, nitrogen dioxide and airborne particulates or soot.

**AIR POLLUTION** The Donora Smog was one of the incidents where Americans recognized that exposure to large amounts of pollution in a short period of time can result in injuries and fatalities. The event is often credited for helping to trigger the clean-air movement in the United States, whose crowning achievement was the Clean Air Act of 1963 which required the United States Environmental Protection Agency to develop and enforce regulations to protect the general public from exposure to hazardous airborne contaminants.

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While Grindstone may have been only peripherally affected by Donora's Smell So Sweet to Die for---- we had our own issues...Black Lung. A story coming soon in theaters near you.

Thank you!!! And if anyone would like to ask questions and pull my finger errr Shake my hand at a future meeting.