

Not in My Lifetime

The Fight for
Clean Water in
Town of Pines,
Indiana



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Clean Air Task Force

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The Clean Air Task Force is a non-profit organization dedicated to restoring clean air and healthy environments through scientific research, public education and legal advocacy.

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CLEAN AIR TASK FORCE

Executive Summary

This is the story of Town of Pines, Indiana, an ordinary American town where hard-working people live and raise their families. In recent years however, the residents have discovered that their drinking water has been contaminated by coal combustion waste generated at a nearby coal-fired power plant. For at least the past 19 years the Northern Indiana Public Service Corporation (NIPSCO) has disposed of its coal combustion waste at a nearby landfill, in contact with the shallow aquifer that provides the drinking water for Town of Pines. The coal combustion waste has also been used to build roads and fill low-lying areas throughout the town. These wastes contain a variety of metals, including aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, molybdenum, nickel, selenium, strontium, thallium, vanadium, and zinc.

Official records show that the landfill was known to have the potential to cause groundwater and surface water pollution and that this contamination would pose a danger to nearby residential well users. The Agency for Toxic Substances and Disease Registry (ATSDR — an organization within the Centers for Disease Control) reviewed the drinking water data for Town of Pines and issued the following statement. “The groundwater in Town of Pines poses a significant threat to children’s health because they could be, or currently are being exposed to potentially high levels of metals in residential drinking water.”

As a last recourse, the residents of Town of Pines have resorted to legal action. The Hoosier Environmental Council, an Indiana environmental organization that has been active on power plant waste issues for over a decade, and citizen activists have brought a citizen suit against NIPSCO under the Resource Conservation and Recovery Act. The purpose of the suit is to obtain comprehensive testing of the town’s water and provision of municipal water to all affected households. In addition, about 90 residents in Town of Pines have come together to file a multi-party civil lawsuit against NIPSCO and Brown, Inc. (owners of the coal combustion waste landfill). They hope for compensation for property damage and personal injury resulting from decades of groundwater contamination.

The story of Town of Pines teaches us the lesson of failed environmental policies at both the state and federal level. It is a story of a community of citizens, deeply harmed, whose public officials offered only indifference, arrogance and ignorance, but who did not passively accept their fate. It is a story meant to inspire action, not just in Town of Pines, but nationally, to ensure responsible and environmentally safe disposal practices, particularly for toxic coal combustion wastes.

Recommendations

To deal with power plant waste, EPA must:

- **Reverse** its regulatory determination and characterize coal combustion waste as a contingent hazardous waste.
- **Issue** an immediate prohibition on disposal of coal combustion waste in surface water and groundwater, unless or until federally enforceable regulations are promulgated.
- **Apply** consistent federal rules to coal combustion waste disposal across the U.S. to end the “subsidy” to coal-fired power plants wherein unregulated and thus cheap waste disposal hides the real environmental costs of unsafe dumping and poor management practices.
- **Require** state of the art controls for all coal combustion waste disposal units, both new and existing, to ensure protection of public health and the environment. These measures include liners and covers, leachate collection, siting requirements, groundwater monitoring, and cleanup requirements to ensure protection of groundwater and surface water;
- **Ensure** there are federal standards governing the placement of coal combustion waste in mines for specific beneficial purposes that are sufficient to protect groundwater and surface water;
- **Ensure** that federal regulations prohibit reuses of coal combustion waste that pose dangers to human health or the environment and that legitimate beneficial uses, such as cement and wallboard manufacturing, do not contaminate the environment or jeopardize public health;
- **Eliminate** uses of coal combustion waste that are likely to contaminate the environment and affect public health, such as agricultural applications and the dumping of coal combustion waste in mines.
- **Guarantee** that improved emission controls on power plant stacks that capture pollutants, such as mercury, do not simply transfer the hazardous pollutants to an unregulated waste stream.

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The Fight for Clean Water in Town of Pines, Indiana

This is a story about the people who live in a small town in Indiana called Town of Pines. Town of Pines is home to about 800 people, including 350 families. Most folks have lived in Town of Pines for years — worked, raised their families and grandkids. It's a quiet, affordable town, shaded by tall white pine trees. Modest houses with neat lawns line the narrow streets. The natural beauty of Lake Michigan and the Indiana Dunes National Lakeshore are only two miles away. But just outside the town loom the tall smokestacks of the Michigan City Generating Station — a coal-fired power plant owned by the Northern Indiana Public Service Corporation (NIPSCO). The power plant and a nearby steel mill mark the start of the industrial alley that runs from Michigan City west to the Illinois border and north to Chicago along Lake Michigan.

To an outsider, Town of Pines seems like thousands of other small communities across the nation — except in this town there is more than meets the eye. It's underground, actually. There is a shallow aquifer under the town and the groundwater in the aquifer is contaminated. The townspeople have been drinking it, probably for over a decade. Imagine living in the same town, in the same house for 30 years and then one day finding out that your water isn't safe to drink. That's what happened to Gordon Tharp. Gordon, and hundreds of other residents of Town of Pines, used to drink well water. Now Gordon buys drinking water for his household because his well is contaminated with high concentrations of boron and manganese. Tharp's greatest concern is for the health of his four children and his grandchildren who grew up drinking this water.

“What have I done to my children?” Tharp asks. “I may have hurt them and I don't even know it. The not knowing bothers you. And no one seems to want to give you the answer.”

Answers have been slow in coming for residents of Town of Pines. In fact, one wonders how they got to this unenviable place — where their hometown now qualifies as a national Superfund site. The answer to this question goes back nearly 25 years when a landfill for industrial waste was first proposed for the town. The landfill was to receive fly ash waste from the nearby coal-fired power plant. Even then it didn't seem right — why put ash in contact with groundwater when everyone knew the shallow aquifer provided the drinking water for Town of Pines residents?

Fast forward to April 2000 when Phyllis DaMota started smelling and tasting something unusual in her water. This discovery put into motion a chain of events that should have stopped the contamination of Town of Pines, that should have led to cleanup of the waste and actions to make certain this wouldn't happen again — not in Town of Pines, not anywhere.



“A magical thing happens in this great nation every day. People turn on the faucet and out comes clean, safe water. But not in Town of Pines, not ever again in my lifetime.”

*—Gordon Tharp,
resident*

Gordon Tharp says “A magical thing happens in millions of homes across this great nation everyday. People turn on the faucet and out comes clean safe water. But not in Town of Pines, not ever again in my lifetime.”

The story of Town of Pines is that of an ordinary American town, of hard-working people who trusted in their government to protect their homes, their property, their health and most of all, their families. It teaches us the lesson of failed environmental policies at both the state and federal level. It is a story of a community of citizens, deeply harmed, whose public officials offered only indifference, arrogance and ignorance, but who did not passively accept their fate. It is a story meant to inspire action, not just in Town of Pines, but nationally, to ensure responsible and environmentally safe disposal practices, particularly for toxic coal combustion wastes.

There’s Something in the Water

Since April 2000, when Phyllis DaMota reported to the Indiana Department of Environmental Management (IDEM) that there was something wrong with her water, over 63 homes in Town of Pines have been found to have contaminated wells. About another 100 wells have been placed in what the U.S. EPA (EPA) calls the “buffer zone” where EPA suspects that wells may be contaminated.

- Initial tests in 2000 revealed that Phyllis DaMota’s well was contaminated with benzene, a known human carcinogen. Other wells in the neighborhood were contaminated with benzene, arsenic, lead, selenium and manganese.
- Tests conducted in July 2001 showed extremely high levels of lead in additional wells. Residents with contaminated wells were supplied with filters. Tests also revealed high levels of arsenic and selenium.
- In September 2001, IDEM sampled water in residential wells and in monitoring wells near an area landfill. Elevated levels of boron, molybdenum, and manganese were detected.
- Continued testing in 2002 revealed that the levels of boron, molybdenum and manganese were so high in some residential wells that the EPA immediately invoked its authority to supply bottled water to affected homes.⁽¹⁾

- In 2002, in response to the widespread drinking water contamination in Town of Pines, the State of Indiana asked EPA to list the site on the National Priority List of federal Superfund sites.

The level of contamination in Town of Pines' water is disturbing. The table below shows that the contamination in residential wells far exceeds federal drinking water standards. And, because Indiana has adopted all of the federal standards, these levels violate state standards as well.

What's Contaminating the Water in Town of Pines?

Much evidence as to the source of contamination of Town of Pines' wells points to the partially unlined Yard 520 Landfill owned by Brown, Inc. Over the years, Yard 520 has received over one million tons — over two billion pounds — of coal combustion waste from the Bailly and Michigan City coal-fired power plants owned by the Northern Indiana Public Service Corporation (NIPSCO). The presence of boron, manganese, arsenic, lead, molybdenum and calcium sulfate in downgradient monitoring wells is consistent with contamination caused by coal combustion waste at dozens of waste sites across the U.S. At numerous sites, ash has contaminated groundwater and surface water and caused severe and potentially irreversible ecological damage.^(7,8)

Despite this logical deduction, state officials, “informed” by reports submitted by the landfill owner, nonetheless claimed that Yard 520 was not the likely source of contamination and initially suggested that the groundwater flowed from the residential areas towards the landfill, rather than from the landfill towards the residential wells. Because state



Photograph: NIPSCO, Richard Fearr.

NIPSCO Michigan City generating station

“Fly ash was dumped there in vast quantities and it makes sense that it is the cause of the well problems.”

—Ken Theisen,
U.S. E.P.A., to Jan Nona
of P.I.N.E.S.

Town of Pines Water Violates Federal and State Water Standards			
Pollutant	Highest concentration detected in well water (ug/L) ⁽²⁾	EPA standard (ug/L) ⁽³⁾	How many times higher than federal standards is the contaminant level in Town of Pines water
Benzene	180	5	36
Arsenic	1,180	10	118
Barium	375	200	~ 2
Boron	14,400	900 ⁽⁴⁾	16
Copper	436	130	3
Lead	199	15	13
Manganese	15,100	300 ⁽⁵⁾	50
Molybdenum	929	10 ⁽⁶⁾	93

Note: ug/L is equivalent to parts per billion (ppb).



Approximately 1 million tons of fly ash from NIPSCO's Michigan City generating plant was deposited in Yard 520.

"Agencies that are supposed to protect the public interest didn't"

—Phyllis DaMota, resident whose home is within sight of Yard 520

regulators accepted, without question, the landfill owner's assertion that the groundwater flow was towards the landfill, precious time was lost (years) and exposure to dangerous chemicals continued. Finally, additional testing by the EPA confirmed not only that the groundwater did indeed flow from the landfill to the residential areas, but that leaching from the unlined northwest corner of Yard 520 was the source of the contamination in residential wells northeast of the landfill.⁽⁹⁾

According to IDEM records, for at least the past 19 years NIPSCO has disposed of its coal combustion waste at the Yard 520 Landfill. The coal combustion waste from the NIPSCO power plants was primarily fly ash.⁽¹⁰⁾ This waste contains a variety of metals, including aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, molybdenum, nickel, selenium, strontium, thallium, vanadium, and zinc.

For at least the past 25 years, officials from the Porter and Laporte County Health Departments, the National Park Service, the U.S. Geological Survey, U.S. EPA, the Indiana Board of Health and IDEM have expressed concern over the suitability of Yard 520 as a disposal site for a toxic industrial waste like coal combustion waste. Official records show that this site was known to have the potential to cause groundwater contamination and surface water pollution and that this contamination would pose a danger to nearby residential well users.

The Yard 520 Landfill is located in what was originally a swampy area. The sandy soil of the area and the shallowness of the aquifer promote the rapid movement of contaminants to the groundwater. The nearest drinking water well is only 300 feet from the landfill. Despite explicit warnings from environmental and public health officials, IDEM did not require Brown, Inc. to line the northern portion of the landfill to prevent toxic waste from contaminating the groundwater or a nearby creek. In spite of documented contamination of groundwater and surface water and significant concerns expressed by local residents and public officials since the late 1970s, NIPSCO continued to dispose of its waste in Yard 520. Large volumes of NIPSCO's coal combustion wastes were dumped in the northern half of the landfill in direct contact with the shallow aquifer from which the entire town pumps its drinking water. Not all the contamination plaguing Town of Pines is flowing from the ash landfill. Coal combustion waste was used to construct many of the town's roads. The waste was also dumped in wet, low-lying areas for use as fill. Because much of this waste was placed in contact with

groundwater and because several of the coal ash roads were never paved and the fill areas never covered, the hazardous chemicals in the waste materials that were spread throughout the town leached, over the course of decades, into the drinking water.

In addition to contaminating the groundwater in Town of Pines, the Yard 520 Landfill also threatens protected streams in the Indiana Dunes National Lakeshore. Contaminated groundwater from Yard 520 flows into Brown Ditch, a creek that flows along the edge of the landfill and eventually into the park. Downstream of the landfill, the creek carries high levels of boron and molybdenum. Indiana Dunes National Lakeshore is an especially important feeding and resting area for migrating land and water birds. Fish, birds and mammals can be harmed by exposure to the contaminants in coal combustion waste.

According to EPA's comparison of upstream and downstream water samples from Brown Ditch, the downstream levels of boron and molybdenum are 116 and 90 times, respectively, the levels found upstream.⁽¹¹⁾ Levels of boron and manganese exceed Indiana's minimum water quality standards and also violate the anti-degradation requirements of Indiana's water quality standards. Degradation of water quality continues in Brown Ditch as it enters the Indiana Dunes National Lakeshore. Highly contaminated water flows into Kintzel Ditch, a stream that has been designated by the Indiana Department of Natural Resources as a rearing or imprinting area for native salmon, thus requiring protection. Brown Ditch also provides sanctuary at its lower reaches for migrating Coho and Chinook salmon and Steelhead trout.

Wondering and Worried About Health Effects

The most pressing concern for Town of Pines residents is how their contaminated groundwater has affected their health and the health of their children. Cathi Murray, a mother of two and preschool teacher, wonders if the rare bowel disorder her 10-year old daughter was born with and the hearing impairment her 8-year old daughter has developed have something to do with the water she drank during her pregnancy.

"To think I drank a lot of water when I was pregnant. Did all that water have something to do with the way my children were created? I don't know."

Sixty-one-year old Gordon Tharp wonders whether the joint problems



The Indiana Dunes National Lakeshore lies only a few miles from the coal combustion waste in the Town of Pines, next to the smokestacks and cooling towers of the NIPSCO plant.

"We... are concerned that [Yard 520] has or may affect park resources, including public water supplies in the park."

*—Dale Enquist,
Superintendent,
Indiana Dunes
National Lakeshore*



“The groundwater in Town of Pines poses a significant threat to children’s health.”

—Agency for Toxic Substances and Disease Registry, July 14, 2002

he experiences are the result of drinking the water or simply his age. He just doesn’t know.

Sadly, Cathi’s and Gordon’s fears are legitimate. The contaminants found in Town of Pines groundwater cause a variety of health effects (*see table*). At the request of the U.S. EPA, the Agency for Toxic Substances and Disease Registry (ATSDR) (an agency of the Centers for Disease Control and Prevention) has evaluated whether the contamination of residential well water in Town of Pines poses an immediate health threat to residents.⁽¹²⁾ ATSDR selected four pollutants (“contaminants of concern”) for their investigation: arsenic, boron, lead and manganese. Their findings, documented in a July 14, 2002 report, were:

- **For arsenic:** ATSDR concludes that potential elevations (in arsenic) such as those observed in the residential wells constitute a threat to human health.
- **For boron:** ATSDR concludes that boron could pose a threat to human health.
- **For manganese:** ATSDR concludes that manganese could pose a threat to human health.
- **For lead:** ATSDR concludes that exposure to the highest lead concentrations in residential wells presents a potential threat to human health in this community.

In addition, ATSDR addressed the combined effects of exposure to these contaminants and other toxic chemicals known to be present in the drinking water, but that weren’t identified by ATSDR as “contaminants of concern” in this study. The agency stated that there are other pollutants in Town of Pines groundwater that create a complex mixture of contaminants. Consequently, they admit that they may have underestimated the impact of exposure to this mixture because there is scientific uncertainty about the combined health impact of this chemical cocktail. ATSDR states, “Thus, even chemicals present at lower levels that were **NOT** selected as a contaminant of concern in this investigation may be of concern in this community because they may add to the toxicity of the identified contaminants of concern.” [*Emphasis in the original.*]

The ATSDR also issued a statement on the special risks to infants and children

in Town of Pines: “The groundwater in the Town of Pines poses a significant threat to children’s health because they could be, or currently are being exposed to potentially high levels of metals in residential drinking water.”

Groundwater isn’t the only potential source of exposure to power plant waste. People can also be exposed to toxics in power plant wastes through dust or from discharges into lakes and streams. Years ago, uncovered trucks hauled power plant waste to the landfill leaving streets and buildings covered in black ash. Toxic chemicals in soil can accumulate in crops and in the livestock that feed on the contaminated plants. Fish in water polluted by power plant waste also frequently contain high levels of toxics. Eating these plants and animals exposes humans to the chemicals found in coal combustion waste.^(13,14)

Federal and State Agencies: A Tale of Indifference, Ignorance and Inaction

Once it became clear that the Yard 520 Landfill and the numerous roads and fill areas throughout the town were the sources of contamination, EPA identified NIPSCO and Brown, Inc. as “potentially responsible parties” (legally liable under Superfund for cleanup of the contamination).⁽¹⁸⁾

In January 2003, the companies, while not admitting liability, entered into an administrative order with EPA and agreed to extend a municipal water line from Michigan City to selected homes within Town of Pines.

Yet the agreement was fatally flawed. A chief complaint by residents was that not enough wells had been tested. Only about one-third of the town’s residential wells had been sampled. Even then, in some cases, wells were only tested once and then declared “safe,” even if a nearby well was contaminated. One-time testing could not account for seasonal fluctuation of the water table and the potential changes in the levels of contaminants found in the groundwater. As a result, only a fraction of the homes in town were provided with municipal drinking water under the EPA order. Complaints and requests to EPA for more testing were soundly rejected by the agency.

Town of Pines residents realized that they’d need to organize to combat the indifference shown by state and federal agencies and to fight for the health of their community. Residents could no longer sell their homes because of the contamination. Many could not afford the thousands of dollars (up to \$20,000 per home) to pay for municipal water on their

Pollutant	Adverse Health Effects
Boron	High levels of boron can damage the stomach, intestines, liver and brain. High dosages can cause miscarriage. Animal studies show that boron can damage male reproductive organs and irritates the skin and eyes. At high doses, boron is toxic to plant life.
Manganese	Neurological toxin linked to Parkinson's disease and learning impairments in children. Suspected reproductive toxicant.
Molybdenum	High levels of molybdenum cause gout-like symptoms in humans (inflammation and deformities of joints) and liver and kidney ailments. Also associated with potential mineral imbalance placing individuals at risk for hypochronic microcytic anemia.
Arsenic	Prolonged exposure to arsenic at high levels causes lung, skin, liver and bladder cancer as well as skin damage and circulatory system problems.
Lead	Known neurotoxin that affects the physical and mental development of children and causes kidney disease and high blood pressure in adults. Lead crosses the placenta and damages the developing fetal nervous system and can induce miscarriage.



Photograph: Lisa Evans.

Alan, Cathi, Jessica Ann and Alana Murray.

“We didn’t pick a hazardous waste site to live in — it happened to us.”

—*Cathi Murray, resident*

own. And most were afraid that their water was toxic. As a result, the citizens group People In Need of Environmental Safety (P.I.N.E.S.) was formed in 2001 and fueled by the energy of citizens fighting for the health and economic well-being of their community.

Far from feeling safe with the limited sampling, P.I.N.E.S. applied for grants to finance their own testing of residential wells. Their limited testing in the fall of 2003 found highly contaminated wells in areas that EPA claimed were safe. Taking samples from only 18 residences, three were found to be above federal health standards for boron; one exceeded the safe level by a factor of eight. Numerous others indicated elevated levels of boron, molybdenum and manganese, a sign that coal combustion waste chemicals were contaminating the water.

“For over a year we’ve been asking EPA to test the whole town. They repeatedly refused, so we decided to take the matter into our own hands. I’m glad we did. They were dead wrong to tell us the water was safe,” says Jan Nona, a founding member of P.I.N.E.S.

In fact, EPA’s method of testing selected wells flies in the face of the recommendations made to EPA by ATSDR in June 2002. ATSDR stated that contaminant concentrations fluctuate widely in Town of Pines groundwater, likely due to groundwater dynamics. This variability means that the

Children at Risk from Manganese Exposure

The children of Town of Pines are substantially more at risk than their parents when exposed to toxicants in their drinking water.⁽¹⁵⁾ This is particularly true with respect to the neurotoxin manganese.⁽¹⁶⁾

At low doses, manganese is an essential nutrient, but exposure to high levels is especially dangerous for pregnant mothers, infants and young children. This is because an infant’s immature liver cannot handle the manganese load by excreting the excess. In newborns, ingested manganese rises to high levels in the blood, then permeates the liver, kidneys and other soft tissues, including the brain. Studies have shown a correlation between high levels of manganese ingestion and learning dis-



abilities and hyperactivity in children.⁽¹⁷⁾ If water containing high levels of manganese is used to make infant formula or is given to infants to drink, an infant can be put at risk. At 15,000 ppb, a level that was found in drinking water in the Town of Pines, the amount greatly exceeds the six ppb found naturally in breast milk or the 70-100 ppb found in some baby formulas. “An infant drinking this water [containing 15,000 ppb of manganese] will be overexposed,” commented Dr. Ted Schettler, a specialist on the impact of hazardous chemicals on child development at Boston Medical Center and author of the book *“In Harm’s Way, Toxic Threats to Child Development.”*

Photograph: Daniel Timm

areas that are most impacted cannot be accurately predicted. ATSDR stated “Because current data are not complete in characterizing the extent of the contaminant plume in groundwater, selectively choosing homes for an alternate water supply will not be protective of human health. Providing an alternate water supply for the entire impacted area is more appropriate.”⁽¹⁹⁾ EPA blatantly ignored this recommendation.

The Last Straw for Residents of Town of Pines

In May 2003, members of P.I.N.E.S. banded together with other concerned citizens from across the U.S. to travel to Washington, D.C., to meet with Marianne Horinko, the EPA Assistant Administrator for the Office of Solid Waste and Emergency Response. P.I.N.E.S. members also met with the staffs of their senators, Richard Lugar and Evan Bayh. They brought with them bottles of toxic brown water that they had filled from their homes in anticipation that someone would finally understand what they were going through.

Gordon Tharp explained to the officials that for nearly a year EPA maintained that his water was “safe” and he was refused municipal water despite the muddy-looking water that flows from his tap. Gordon’s water contains elevated levels of boron and levels of manganese above health-based standards (almost five times the secondary Maximum Contaminant Level set by the Safe Drinking Water Act). At a public meeting in January 2003, Gordon had asked a panel of four public officials and a NIPSCO executive if they would drink his water — all admitted that they wouldn’t.

“I don’t understand why it’s OK for my family but not theirs,” said Tharp to Assistant Administrator Horinko, “That sounds like two standards, them and us, and that’s not what our forefathers had in mind when they founded this great nation.”

Their efforts were to no avail. Assistant Administrator Horinko refused to order more testing within Town of Pines. She instead supported the EPA regional office, maintaining, in direct conflict with the ATSDR assessment, that representative sampling can identify the “hot spots” needing action. Thus, NIPSCO and Brown were required only to construct a municipal water line to serve the approximately 147 homes that EPA identified as “at risk”. This is less than one-third of the homes in Town of Pines. In the end, EPA added about 17 homes as a result of the P.I.N.E.S. testing, but refused



Photograph: Lisa Evans.

P.I.N.E.S printed “Water” and “No Water” lawn signs to illustrate that two-thirds of Pines residents would not receive safe water under the EPA agreement.

**“If someone
thinks ash can’t
cause problems,
I’ve got a bridge
to sell them in
San Francisco.”**

*—Jan Nona,
resident*



Indiana Dunes National Lakeshore and NIPSCO generating plant.

“I thought the ‘P’ in EPA stood for protection”

—Gordon Tharp,
resident

to test the areas adjacent to the newly-found contaminated residences. As a last recourse, the residents of Town of Pines resorted to legal action. First, the Hoosier Environmental Council, an Indiana environmental organization that has been active on power plant waste issues for over a decade, and P.I.N.E.S. activists Jan Nona and Cathi Murray, brought a citizen suit against NIPSCO under the Resource Conservation and Recovery Act.⁽²⁰⁾ The purpose of the suit was to obtain comprehensive testing of the town’s water and provision of municipal water to all affected households.⁽²¹⁾

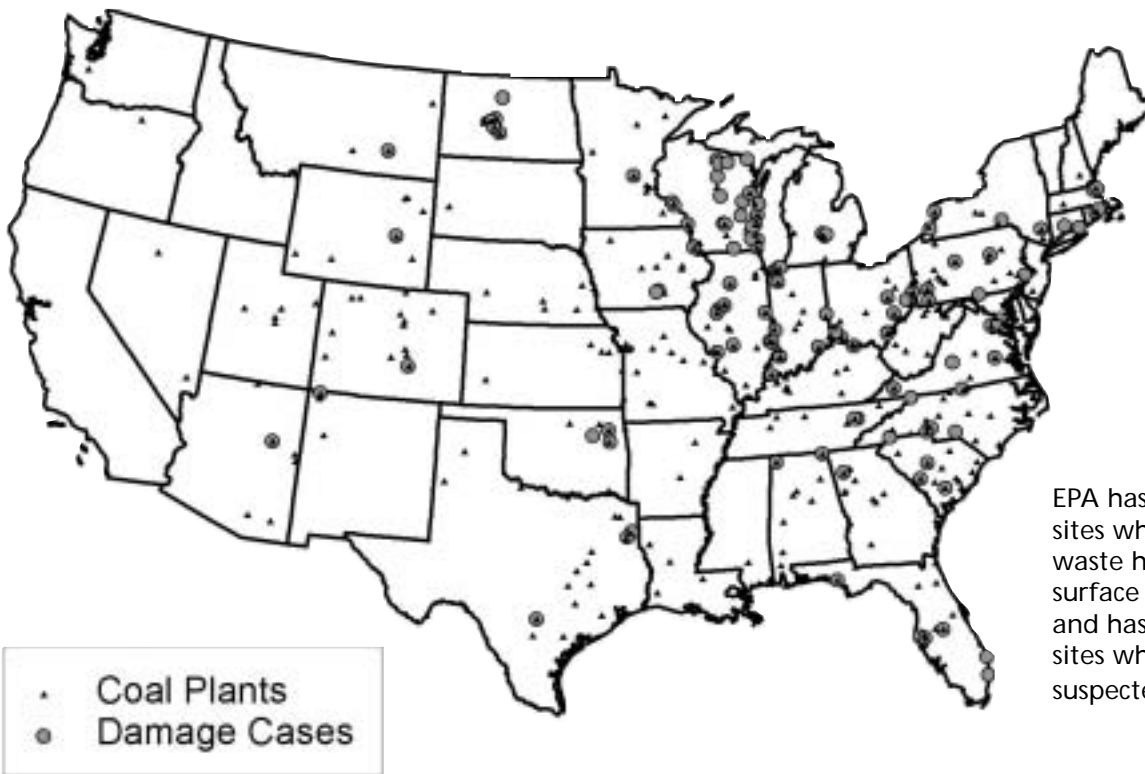
In addition, about 90 residents in Town of Pines came together to file a multi-party civil lawsuit against NIPSCO and Brown, Inc. They hope for compensation for property damage and personal injury resulting from decades of groundwater contamination. But the decision to file a lawsuit was a difficult decision for some to make.

“I’ve never sued anyone in my life,” said Jan Nona.

Town of Pines Is Not Alone

Unfortunately, the situation in Town of Pines is not an isolated incident. In

Coal-Burning Power Plants and Potential and Proven Damage Cases



EPA has identified over 70 sites where power plant waste has contaminated surface and groundwater, and has identified over 50 sites where damage is suspected.⁽²²⁾

the United States, the electric power industry is our biggest polluter, and coal, which generates 60 percent of our electricity, is the dirtiest fuel. When coal is burned, metals and other compounds within the coal (e.g., sulfur and mercury) are released. More than 900 million tons of coal are burned in the U.S. each year by approximately 426 power plants. These plants release over 700 million pounds of chemicals into our air and nearly one billion pounds of chemicals into our air, land and water combined – every year!

Once the approximately 900 million tons of coal are burned, nearly 130 million tons of power plant combustion waste remain. Receiving the wastes from these power plants are over 800 landfills, waste lagoons and/or surface mines⁽²²⁾ where this waste, contaminated with metals and other toxic compounds, is being dumped. In the 2001 Toxics Release Inventory, coal-burning power plants reported that they release more than 250 million pounds of toxic chemicals in the form of ash each year. Given that the typical coal-fired plant operates for about 50 years, the cumulative impact of these emissions makes coal-fired power plants one of the most widespread, large-scale and long-lived generators of toxic releases in the nation. The residents of Town of Pines are not alone. More than half of all Americans — over 156 million people — live within 30 miles of a coal-fired power plant.

Coal power plant combustion wastes are typically disposed of in either landfills (for dry wastes) or surface impoundments (for liquid wastes).⁽²³⁾ Most power plant waste landfills and impoundments are located at the same site as the power plant. Ideally, these disposal units would prevent the wastes from entering the environment.

Unfortunately, the level of protection afforded by these disposal methods varies greatly. About 40 percent of the coal waste landfills and 80 percent of the coal waste surface impoundments are not lined, and less than half the landfills and only one percent of impoundments have leachate collection systems.⁽²⁴⁾ In some states, liquids from impoundments not only are allowed to percolate to the groundwater, but the disposal units are actually designed to allow this. There are also direct discharges to surface waters, overflow drainage from impoundments and surface water runoff.

Large quantities of coal combustion waste is also “reused.” Some reuses are environmentally beneficial, like use of fly ash in concrete. Other “beneficial reuses,” however, can be problematic and even dangerous. Examples include use of power plant waste as fill, road base, road embankments and minefill



Photograph © The Courier-Journal, Durrell Hall, Jr.

Phyllis DaMota, Pines resident, whose water was the first to be determined unsafe to drink.

“This is your water, your town and you have to fight for it.”

*—Jeff Stant,
Clean Air Task Force*

where care is not taken to isolate the waste and prevent its contact with water.

Cleaning Up Coal Combustion Waste

Disposal of toxic coal combustion waste should be regulated under the Resource Recovery and Conservation Act (RCRA). The reality is that EPA has exempted these wastes from hazardous waste disposal requirements.⁽²⁵⁾ In May 2000, EPA issued a final Regulatory Determination in which the Agency determined that coal combustion wastes should continue to be exempted from federal rules for hazardous wastes. Although EPA committed in 2000 to promulgate federal standards governing the disposal of these wastes under subtitle D of RCRA, there is no assurance that EPA will ever issue these rules. EPA's track record for promulgating rules for the management and disposal of non-hazardous wastes is dismal.⁽²⁶⁾ Federal regulations are necessary because it is clear from current disposal practices that state rules are inadequate to control or mitigate the public health and environmental risks of coal combustion waste disposal.

Coal combustion waste should be characterized as a contingent hazardous waste and be federally regulated under subtitle C of RCRA based on the risks it poses to human health and the environment. State solid waste programs are too variable and applied too unevenly to deal with these toxic materials. Unless EPA regulates these wastes as hazardous when mismanaged, we can expect more and more contamination of our environment.

What Can Your Town Do About Coal Combustion Waste?

It's too late for the residents of Town of Pines, but other communities can act now to protect their groundwater, drinking water and surface waters. Here is some advice for citizens living near a power plant waste disposal site:

- Make sure that the records documenting the type and amount of waste placed in the dump, and all monitoring records are available to the public. (You may have to check with the Department of Public Health, Department of Water Quality, and/or the Department of Solid Waste Management before you find the department with jurisdiction over this type of facility.)
- Make sure that the state is inspecting the site regularly and that compliance records are available for public review and that the state is doing what it should to keep the site in compliance.
- Check with the state Department of Solid Waste to find out if the landfill (or minefill or surface impoundment) has an operating permit. If so, check the compliance record of the facility to see if it is complying with its permit or if there have been chronic problems. Find out when the permit expires — this is often a time when the state would be willing to address problems at the dump site.
- Make sure that there are groundwater monitoring wells placed around the disposal site and request the monitoring results. If there are no groundwater monitors, seek help from your state agency to require monitors.
- Seek expert advice on the placement of groundwater monitors and seek expert advice if there is any contamination in any monitoring well.

- Find out if the facility has a National Pollution Discharge Elimination System (NPDES) permit, and if so make sure it has permit limits for metals, such as arsenic, chromium, lead, boron, etc. Make sure the disposal facility is complying with the permit.

- If there is surface water flowing by or through the dump site, ask your state to test the water for power plant waste constituents.

- Find out if the disposal site is lined. If unlined, look more closely at the groundwater data and, in any event, seek closure of the facility.

- When a disposal facility is closing, ask for an opportunity to review the closure plan. Make sure monitoring of the site continues 30 years after closure and that provisions are made for an impermeable cap. If the landfill or waste pond has caused water contamination, make sure there is a corrective action plan in place. Lastly, make sure there is adequate financial assurance (e.g., a bond) to cover cleanup costs should the site require cleanup after closure.

- If power plant waste is deposited on the ground for a “beneficial use,” such as roads or fill, make sure the waste is isolated from groundwater and surface water and that an impermeable surface, such as concrete, is placed on top of the waste as soon as possible.

- If power plant waste is transported through your town, make sure the trucks are properly covered to prevent the escape of ash. Inhalation of ash can be harmful to your health.

- If the disposal site is a surface or deep mine, know the quantity of waste being placed in the mine and whether other industrial wastes will be mixed with the ash. Require sampling of all waste being disposed in the mine, and make sure there is adequate groundwater monitoring, a leachate collection system, corrective action

standards, 30 years of post-closure monitoring, post-closure land use restriction, and a bond that can cover cleanup costs if the waste contaminates water. Make sure that the permit accurately depicts the direction of groundwater flow from the dump and identifies possible receptor wells to make sure they are monitored.

To deal with power plant waste, EPA must:

- Reverse its regulatory determination and characterize coal combustion waste as a contingent hazardous waste.
- Issue an immediate prohibition on disposal of coal combustion waste in surface water and groundwater, unless or until federally enforceable regulations are promulgated.
- Apply consistent federal rules to coal combustion waste disposal across the U.S. to end the “subsidy” to coal-fired power plants wherein unregulated and thus cheap waste disposal hides the real environmental costs of unsafe dumping and poor management practices.
- Require state of the art controls for all coal combustion waste disposal units, both new and existing, to ensure protection of public health and the environment. These measures include liners and covers, leachate collection, siting requirements, groundwater monitoring, and cleanup requirements to ensure protection of groundwater and surface water;
- Ensure there are federal standards governing the placement of coal combustion waste in mines for specific beneficial purposes that are sufficient to protect groundwater and surface water;
- Ensure that federal regulations prohibit reuses of coal combustion waste that pose dangers to human health or the environment and that legitimate beneficial uses, such as cement and wallboard manufacturing, do not contaminate the environment or jeopardize public health;
- Eliminate uses of coal combustion waste that are likely to contaminate the environment and affect public health, such as agricultural applications and the dumping of coal combustion waste in mines.
- Guarantee that improved emission controls on power plant stacks that capture pollutants, such as mercury, do not simply transfer the hazardous pollutants to an unregulated waste stream.

Endnotes

1. EPA invoked its authority under Superfund, the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) 42 U.S.C. § 9606.
2. Agency for Toxic Substances and Disease Registry. Health Consultation, Town of Pines groundwater plume. Town of Pines, Porter County, Indiana. June 14, 2002. http://www.atsdr.cdc.gov/HAC/PHA/townpines/top_p1.html
3. <http://www.epa.gov/safewater/mcl.html>
4. 10 ppb is the Removal Action Level (RAL) for boron used at all Superfund sites. RALs are drinking water concentrations of contaminants that are considered by EPA, along with other factors, in determining whether to provide alternate water supplies under Superfund removal authority. Generally when EPA finds that a source of drinking water contains a contaminant exceeding its RAL, an alternate source of water is provided. US EPA. "Numeric Removal Action Levels for Contaminated Drinking Water Sites," November 10, 1998. OSWER Memorandum 9360.1-028-P, EPA-540-F99-044.
5. U.S. EPA, Health Effects Support Document for Manganese. EPA #882R03003, February 2003, www.epa.gov/safewater/ccl/pdf/hedoc-manganese-final.pdf. EPA has derived a Health Reference Level (HRL) for manganese of 300 ppb. A HRL is the concentration of a contaminant in drinking water what can be safely consumed for a lifetime.
6. 10 ppb is the Removal Action Level (RAL) for molybdenum. U.S. EPA, "Numeric Removal Action Levels for Contaminated Drinking Water Sites," November 10, 1998. OSWER Memorandum 9360.1-028-P, EPA-540-F99-044.
7. Hopkins, W.A., C.L. Rowe, J.H. Roe, D.E. Scott, M.T. Mendonta and J.D. Congdon. 1999. Ecotoxicological impact of coal combustion byproducts on amphibians and reptiles. Savannah River Ecology Laboratory, presented at the Society for Environmental Toxicology and Chemistry, 20th Annual Meeting, Philadelphia, PA. November 14-18. Abstract # PMP009.
8. U.S. EPA, 1999b. Technical background document for the report to Congress on remaining wastes from fossil fuel combustion: waste characterization. March 15, 1999.
9. U.S. EPA. Final Site Investigation Report, Groundwater Contamination, Township of Pines, Porter County, IN, Technical Direction Document No. S05-0204-013. December 30, 2002.
10. Coal combustion waste is usually comprised of fly ash, bottom ash, scrubber sludge and a variety of low volume wastes resulting from the combustion of coal, including coal pile runoff, coal ash runoff, boiler blowdown, cleaning wastes and plant wastewater.
11. U.S. EPA. Final Site Investigation Report, Groundwater Contamination, Township of Pines, Porter County, IN, Technical Direction Document No. S05-0204-013. December 30, 2002.
12. Agency for Toxic Substances and Disease Registry. Health Consultation, Town of Pines groundwater plume. Town of Pines, Porter County, Indiana. June 14, 2002. http://www.atsdr.cdc.gov/HAC/PHA/townpines/top_p1.html
13. U.S. EPA, 1998c. Technical Background Document for the Report to Congress on Remaining Wastes from Fossil Fuel Combustion: Groundwater Pathway Human Health Risk Assessment. June 1998.
14. Research Triangle Institute, 1998. Draft final report. Non-Groundwater Pathways, Human Health and Ecological Risk Analysis for Fossil Fuel Combustion Phase 2 (FFC2). Prepared for U.S. EPA, Office of Solid Waste, Washington, D.C. June 5, 1998.
15. Statement of Dr. Peter Orris, MPH Professor of Occupational and Environmental Health Sciences, University of Illinois School of Public Health. Statement at Town of Pines Press Conference, January 8, 2004.
16. Agency for Toxic Substances and Disease Registry, 2000, Toxicological Profile for Manganese. September 20, 2000.
17. Woofl, A., R. Wright, C. Amarasiriwardena and D. Bellinger, 2002. A child with chronic manganese exposure from drinking water. Environmental Health Perspectives, Volume 110, Number 6, June 2002.
18. The Administrative Consent Agreement also included the owner of Yard 520, Ddalt Corporation, and the transporter of the waste, Bulk Transport Company.
19. Agency for Toxic Substances and Disease Registry. Health Consultation, Town of Pines groundwater plume. Town of Pines, Porter County, Indiana. June 14, 2002. http://www.atsdr.cdc.gov/HAC/PHA/townpines/top_p1.html
20. The plaintiffs brought suit under Section 7002 of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6942.
21. HEC, et al. v. Northern Indiana Public Service Company, U.S. Dist. Ct. N.D. Ind. No. 3:04CV017RM.
22. U.S. EPA, Office of Solid Waste, Damage Case List, June 2003
23. U.S. EPA, 1999. Report to Congress, Wastes from the combustion of fossil fuels. Volume 2 – Methods, findings and recommendations. Office of Solid Waste and Emergency Response, Washington, DC. EPA 530-R-99-010. March 1999.
24. U.S. EPA, 1999. Report to Congress, Wastes from the combustion of fossil fuels. Volume 2 – Methods, findings and recommendations. Office of Solid Waste and Emergency Response, Washington, DC. EPA 530-R-99-010. March 1999.
25. Ibid.
26. Federal Register, Volume 65, number 99, page 32213. Regulatory determination on wastes from the combustion of fossil fuels. Final rule. May 22, 2000.
27. EPA promised in 1986 and 1991 to promulgate regulations for mining wastes and has never done so.



CLEAN AIR TASK FORCE

