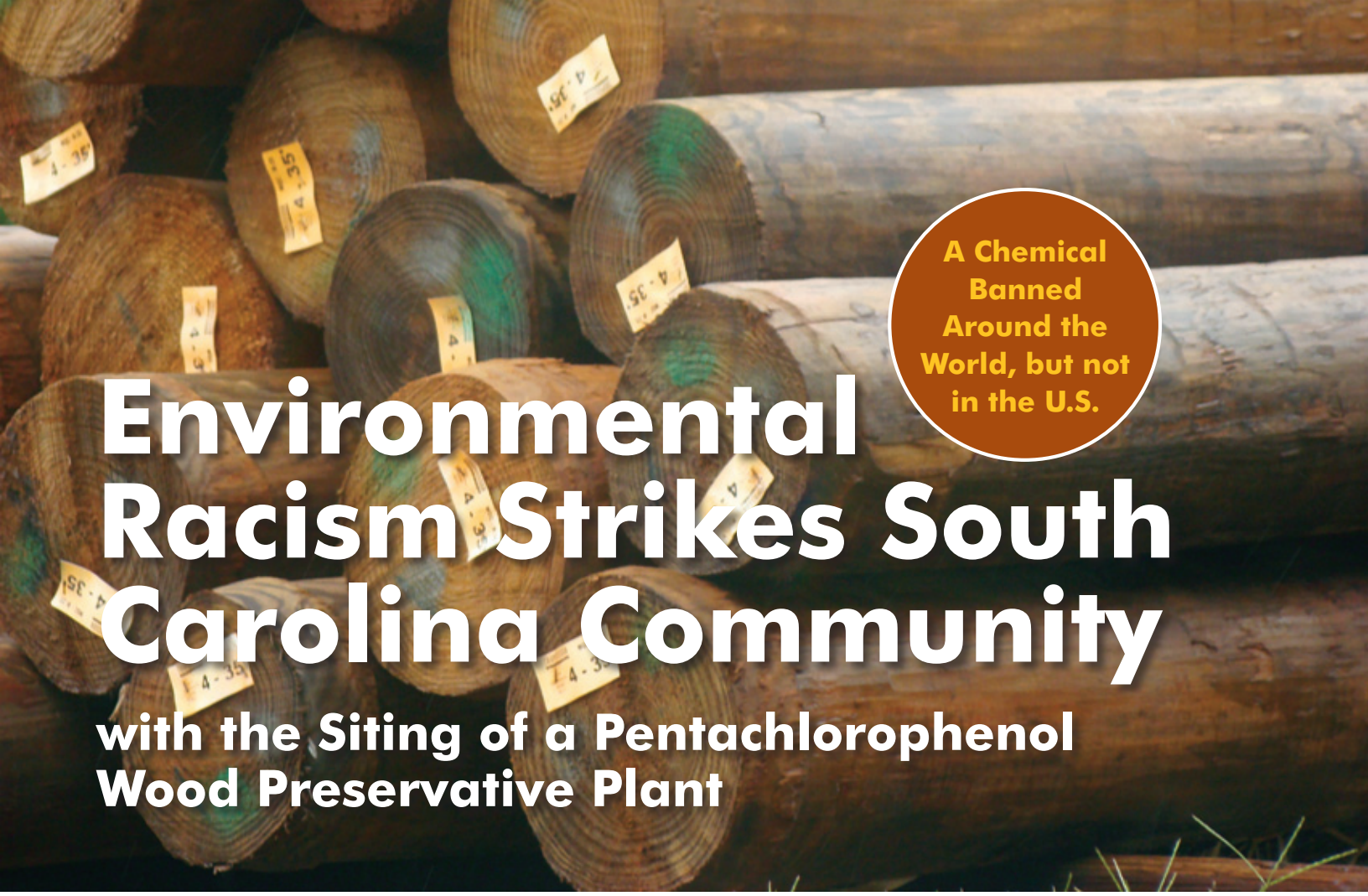

A Chemical Banned Around the World, but not in the U.S.

Environmental Racism Strikes South Carolina Community

with the Siting of a Pentachlorophenol Wood Preservative Plant

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The manufacturer of the most toxic chemical known to humankind slated to move from Mexico to a majority low-income African American community until local residents, a newspaper, and legislators stepped in to stop it.

DREW TOHER

Gulbrandsen Chemicals Inc. sought to make Orangeburg, South Carolina, a majority African American community with three times the United States poverty rate, the last place in the world to produce one of the most toxic pesticides known to humanity, pentachlorophenol (penta)—a wood preservative used to treat utility poles, railroad ties, and wharf pilings. That is, until residents found out about these plans.

The U.S. is one of the few countries on earth that continues to allow the use of this hazardous wood preservative.[1] One hundred and 86 nations, not including the U.S., signed on to a global treaty, the Stockholm Convention (2001), which banned penta in 2016—declaring the chemical a Persistent Organic Pollutant (POP). When Mexico announced that its last production plant would close by 2021, companies scrambled to fill in the market, and Gulbrandsen set its sights on Orangeburg. This set in motion a series of high-profile investigative reports, community advocacy, and political action that ultimately resulted in a major victory for environmental justice, as Gulbrandsen dropped its plans to poison Orangeburg's residents and environment.

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OVERVIEW AND HISTORY

Penta is used to pressure-treat wood as a method of prolonging its use in utility poles, railroad ties, and wharf pilings. Beyond Pesticides has been sounding the alarm on penta and other wood preservatives for over 30 years, highlighted in its reports *Poison Poles* (1997) and *Pole Pollution* (2000), which outline the science on the hazards and alternatives to preservative-treated utility poles.[2,3]

Penta is a particularly concerning wood preservative, as it is well known to be contaminated with hexachlorobenzene,

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polychlorinated dibenzo-p-dioxins, and furans. Acute exposure through inhalation or contact with penta-treated products can result in severe irritation. Chronic risks include damage to organ systems like the liver and kidney, as well as impacts on immune, nervous, and endocrine system functioning. EPA reviews previously classified penta as a probable carcinogen, however its Integrated Risk Information System recently classified it as "likely to be carcinogenic."[4] EPA estimates that at least 1 in 1,000 workers are likely to develop cancer during their career at a penta production plant.

Regulation of penta began in the late 1970s, when EPA identified extraordinarily high risks to human health. Penta, along with other wood preservatives, was subject to a Special Review, during which EPA considers product efficacy data (not considered during a standard registration review, which assumes product benefits), but does not adequately consider the availability of nontoxic alternatives. As a result of sustained industry pressure on the agency, EPA soft-pedaled its review to focus on "risk-reduction measures," rather than meaningful regulations. Prior to its review in the 1970's, penta was available to the general public for use as an insecticide, fungicide, herbicide, molluscicide, algicide, disinfectant, and as an ingredient in antifouling paint.[5] In 1984, EPA ultimately removed residential uses by classifying penta as "restricted use," and only available to certified pesticide applicators. But the agency allowed widespread community exposure through treated utility poles and railroad ties to continue.

Curtailment of uses and personal protective equipment requirements have not adequately addressed significant levels of dioxin contamination that occur during the manufacturing process and continue to pose threats to public health as a result of leaching from treated wood into groundwater and the wider environment. Instead of imposing stricter dioxin limits of one part per million, EPA in the late 1980s negotiated with the chemical's manufacturers to permit a phase down to two parts per million over several years. Despite decades to improve in production processes, current EPA documents show dioxin and other contaminants, such as hexachlorobenzene, remain at hazardous levels in penta treated wood (19.3ppm and .55ppm average in 2013).[6]

Beyond Pesticides (along with the Communication Workers of America, the Center for Environmental Health, and Joseph and Rosanne Prager) sued EPA in 2002 over its inaction on penta, urging the agency to cancel and suspend the registrations of all toxic wood preservatives on the market.[7] Although the court initially issued a preliminary injunction, the case was ultimately struck down by U.S. District Court Judge Richard Leon based on administrative issues rather than on the merits.[8] Since then, EPA has continued to skirt responsibility to address this highly hazardous chemical with changing risk assessment calculations. In one notable instance, penta review documents from EPA calculated a 2.2 in 10,000 cancer risk to children playing around treated poles. This rate was 200 times above EPA's acceptable cancer threshold. But rather than protect children, EPA simply removed the exposure scenario for children from its analysis and echoed a claim by the Penta Council, an industry group, that "play activities with or around pole structures would not normally occur."

DISPOSAL

Disposal of hazardous wastes is regulated under the *Resource Conservation and Recovery Act*. Under this law, hazardous wastes are defined by what is known as a "toxicity characteristic," which is based on assumptions such as the pH expected in landfill soils. Because penta levels on wood waste fall below EPA's defined hazard threshold,

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Penta's Regulatory Status in North America

While the vast majority of 152 countries that are signatories to the 2001 Stockholm Convention accept and implement listing decisions, new rules established under the treaty in 2018 allow individual countries to determine whether to ratify or accept bans on specific chemicals. The treaty, which the U.S. has never ratified, bans Persistent Organic Pollutants. In penta's case, 16 countries have not yet accepted the ban.[9] Despite receiving a 5-year exemption for the last penta production plant in North America, Mexico ultimately signed on to phaseout penta production and use by the end of 2021. To the frustration of many international advocates, Canada has not yet ratified a penta ban. But it may do so soon. A special review of the chemical, published in July 2020 by the country's Pest Management Regulatory Agency, proposes an outright ban that advocates are urging regulators to finalize.[10] Many are hopeful that if Canada and Mexico eliminate penta use, there will be sufficient pressure for the U.S. to follow suit. EPA is in the process of evaluating penta under a review required by federal law to occur every 15 years, but has not yet published a regulatory decision.

As EPA's lax regulation of penta continues, the quantity of wood preservatives used in the U.S. continues to be high. EPA's latest reports of pesticide use do not include wood preservatives as a category, but the agency's numbers lead to the conclusion that wood preservative use on the whole (including penta, creosote, copper chromated arsenate, and others) is equal to at least a quarter of all agricultural pesticide use.[11]

The Case for Alternatives to Pentachlorophenol

Steel, concrete, and composite alternatives to hazardous wood preservatives yield a lifespan of 80 to 100 years. Borates have been an effective alternative wood treatment as well. When considering alternatives, it is important to understand the differences in maintenance costs associated with different materials. Wood preservatives are likely to require re-treatment, which some utilities perform on a set cycle, while steel, concrete and fiberglass do not. In addition, disposal costs for chemicals used in wood treatment are high and continue to grow, while steel can be recycled. Communities may also choose to bury their utility lines if conditions are appropriate.

treated wood waste circumvents federal regulations that would require disposal in landfills. EPA's current guidance tells homeowners who find penta-treated wood on their property, "it can usually be disposed of by ordinary trash collection."[12] For non-households, the agency indicates it is the responsibility of the individual generating the waste to determine whether it is hazardous, indicating that state and local governments may have more specific instructions. This lackadaisical approach to regulating hazardous wastes permits widespread contamination of the environment and reuse of treated wood.

STORAGE

Storage yards for poison poles can also be a significant source of environmental pollution. In 2009, the Ecological Rights Foundation (ERF) sued California utility company Pacific Gas & Electric (PG&E) for contamination of waterways and wildlife caused by the placement and storage of penta-treated poles. The suit focused on the ability of dioxin to leach out of the poles and bioconcentrate throughout the food chain, harming fish, birds, sea lions, and people. After nearly a decade in the courts, a settlement was reached, requiring PG&E to identify all storage yards containing penta poles and implement technologies that reduce the runoff of dioxin. These technologies include storage improvements such as covering or bringing pole storage indoors, improving measures that treat stormwater, and further consideration for PG&E to utilize alternatives like concrete and steel.

STOCKHOLM CONVENTION BAN

While EPA continues to drag its feet, an international treaty, Stockholm Convention on Persistent Organic Pollutants, was brought into force. Signatories to the Stockholm Convention are committed to eliminate the production and use of hazardous chemicals voted on by member countries. The U.S. is glaringly absent from this treaty, signing it in 2001, yet never ratifying it in the Senate. According to the U.S. State Department, "The United States participates as an

observer in the meetings of the parties and in technical working groups."[13] Indeed, despite not signing the treaty, the U.S. was deeply involved in opposing a proposed ban on penta when discussions began at a United Nations committee in 2014.[14]

Despite opposition from the U.S. and India, which is a minor producer of the chemical, the Stockholm Convention voted to impose the strictest ban possible on penta, beginning in 2016.[15] This set a clock ticking on the last North American penta plant, located in Matamoros, Mexico. Mexico was granted a five-year exemption from the treaty in order to provide time to shift production.[16] With 2021 fast approaching, the plant's owner, Cabot Microelectronics, announced it would stop manufacturing the chemical in order to comply with the Stockholm Convention. Around the same time, Gulbrandsen Chemicals Inc., a company that lists its headquarters in South Carolina, but appears to have ties to India, announced it would bring a production plant to Orangeburg.

BRINGING MEDIA ATTENTION AND ACTIVISM TO ORANGEBURG'S FIGHT

The U.S. has long been the largest consumer of penta, and as a result has an extended history with the chemical's manufacturing process. Hundreds of Superfund sites (under the *Comprehensive Environmental Response, Compensation, and Liability Act* [CERCLA]) throughout the country are designated as such because they were contaminated by previous penta production. According to research Beyond Pesticides conducted in *Pole Pollution* in the late 1990s, roughly 250 sites on the Superfund National Priorities list were contaminated with penta.[17]

With this history and context in mind, Beyond Pesticides relayed this information to Sammy Fretwell, a reporter from *The State* newspaper in South Carolina. (Both Beyond Pesticides and Mr. Fretwell were tipped off about Gulbrandsen's plans by a concerned local resident.) Mr. Fretwell published an indepth article laying bare the hazards of penta, subsequently activating a grassroots network of health and environmental justice advocates in the community.[18] Other newspapers picked up the story, a change.org petition was started, and a website, *envjustice2020.org*, was created to organize against the plant.

This flurry of activism brought about a swift response from some South Carolina's lawmakers.[19] Shortly after *The State*'s piece was published, South Carolina Representatives Russell Ott and Gilda Cobb Hunter introduced a joint resolution to place a moratorium on penta production. "It gives us time to get a better understanding of what this is," said Representative Ott, a lawmaker whose district intersects with Orangeburg, to *The State*. He continued, "Clearly it has been banned in over 150 countries. We want to give everybody an opportunity to have their say, but in the meantime, this places a moratorium on the production."

Local politicians were rightfully concerned that the chemical would disproportionately affect the community's low-income and people of color residents. "I certainly am not interested in Orangeburg County being the home of manufacturing a chemical that has the kind of detrimental effects I've read about,'' said Representative Cobb-Hunter, in whose district the planned production site was to be located. Reports indicate the site was planned to be constructed near a retirement community and an assisted living facility.

When asked for comment, Beyond Pesticides emphasized that a delay was not enough. "It's encouraging to see state lawmakers step in to delay the opening of a new penta plant in South Carolina, but the fact is, it never should have been considered in the first place," the organization said in a statement to the paper. "Pentachlorophenol production in South Carolina would harm workers, poison the surrounding environment, and set Orangeburg up as a future Superfund site. The rest of the world has already moved to alternatives."

The flurry of local activity, from community leaders to regulators to politicians, put immense pressure on Gulbrandsen, which announced less than two weeks after *The State*'s first investigative report that it would drop its plans to move forward with penta production.[20] Edisto Riverkeeper Hugo Krispyn, whose group at the headwaters of the North Fork of the Edisto River fought against the plant due to concerns over contamination of recreational waterways, told *The State* that no official he spoke with supported penta production. "Everybody I spoke to, top to bottom, left and right, thought it was a hideous idea," Mr. Krispyn said. In announcing its withdrawal, Gulbrandsen cited delays in state regulatory approvals and community outcry as the primary drivers for the decision.

"After meeting with state regulators regarding the permitting process to produce penta, we have determined we will be unable to meet our business timeline needed to move forward with this project,'' the company said in a statement. "Given that fact, and the helpful feedback we have received from members of our community, we have decided to forgo plans to produce penta."

With Gulbrandsen's threat to Orangeburg officially eliminated, one concerning question remains; whether another company will make an attempt to continue producing this highly hazardous chemical. Without action from EPA to ban the chemical or the U.S. Senate to ratify the Stockholm Convention, the possibility looms large and will necessitate constant vigilance, particularly for low-income communities already subject to toxic insult. As Orangeburg's experience shows, penta has no place in the 21st century and it is abhorrent for the U.S to continue to embrace the use of this hazardous, dioxin-contaminated wood preservative. If the threat emerges in other communities, Orangeburg has provided the roadmap: factual reporting and strong community engagement with elected leaders can deliver environmental justice.

NOTES

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