Mountains & Marshes

South Carolina Environmental Law Project ~ P. O. Box 1380 ~ Pawleys Island, SC 29585 ~ 843-527-0078

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SCELP, Sierra Club Seek End to Leaking Radioactive Waste

On behalf of Sierra Club, the South Carolina Environmental Law Project (SCELP) is seeking to end the practice of burying radioactive waste in leaking containers.

Working with Columbia attorney Bob Guild, SCELP is appealing the renewal of the permit for the Chem-Nuclear Low Level Radioactive Waste Landfill at Barnwell. We are seeking improved landfill designs and operating procedures to prevent expansion of a long-standing problem with leaking radioactive waste. During a four-day hearing in February 2005, we presented evidence showing that the current landfill design is flawed and that better means of containing the wastes are readily available.

The Chem-Nuclear landfill has operated since the early 1970s as one of the nation's largest dumping grounds for "low level" radioactive wastes. "Low level" does not mean that these wastes are harmless. Some of these wastes will present dangers for thousands of years. The wastes at the site include everything from low hazard contaminated hospital clothing to high hazard uranium and old nuclear power plant reactor vessels. The wastes are buried in trenches at a site just outside the Town of Barnwell.

The present appeal represents the first time that the permit for the Chem-Nuclear facility has been challenged.

In early years, wastes were buried in cardboard boxes and other makeshift containers. Although it was initially predicted that any leaks from the landfill would take more than 424 years to result in radioactive contamination of nearby streams, in fact radioactive tritium was found in monitoring wells shortly after the landfill opened, and a nearby stream, Mary's Branch, was contaminated within 20 years. Mary's Branch flows into Lower Three Runs Creek on the Savannah River Site, and that creek runs to the Savannah River.

The Barnwell site has always been among a very small number of radioactive waste burial grounds in the United States. The unfairness of a few states bearing the entire burden of radioactive waste has been long recognized. During the 1980s, Congress passed a law stating that disposal of radioactive waste is the responsibility of the state where the waste is generated. The new law allowed groups of states to form waste compacts to limit import of radioactive wastes from other states. In 1982, South Carolina joined the Southeast Compact with seven other southeastern states. Under the compact agreement, the Chem-Nuclear site was to serve the seven states until 1992, when it would shut down. North Carolina was supposed to open a new disposal site in 1992 to serve the southeast region. But the North Carolina site ran into great public opposition and was never opened.

This is an aerial view of a portion of the Chem-Nuclear Radioactive Waste Landfill near Barnwell, SC.

Instead of shutting down, under Governor David Beasley, South Carolina withdrew from the Southeast Compact and the Chem-Nuclear site was again allowed to receive waste from the entire nation except North Carolina.

In 2000, under Gover-

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Reflections by Amy

Amy Armstrong, Staff Attorney

The summer of 1999 was my first introduction to the practice of environmental law and it started right here at SCELP. Spending that summer as a first year law student working alongside Jimmy Chandler cemented my desire to practice environmental law, but little did I know then that I would end up right where I started. Fortunately, my journey through law school brought me back to SCELP with the generosity of an Equal Justice Works fellowship grant. Almost three years later, thankfully, I'm still here doing what I love.

Three years. A fraction of SCELP's 18-year history as a ground-breaking, precedent-setting, force-to-be-reckoned-with fighting for the protection of South Carolina's forests and swamps, creeks and beaches, clean air and water, and overall quality of life. After three years, the painting that started as a blank canvas has slowly started showing some of its many varying hues and tones, shapes and colors revealing a tiny glimpse of how environmental laws are implemented and enforced, and cases won.

Learning to practice environmental law from Jimmy and working for a non-profit organization has been a life-enriching experience. It's been challenging, constantly requiring creativity, thorough analysis, and precision. It's been rewarding and downright fun to win cases and other protections for the environment. It's also been frustrating, even disappointing, at times. It's called me to stretch my brain in new directions. And it's helping me become the kind of lawyer that I dreamed of being even before law school – one demanding that the natural resources of our community be protected for current use, and for future generations.

Many of you may not know this, but I was in a car accident almost nine years ago that left me a paraplegic. At the time of my accident, I was doing field work for the S.C. Department of Natural Resources ("DNR"), helping manage a population of the federally endangered Red-cockaded Woodpecker at the Sandhills State Forest. It was hard for me to imagine more satisfying work – after all I was paid to watch, band, and follow birds around all day. But, with some encouragement from my father, William Armstrong, Tom Kohlsatt, then Wildlife Diversity director at DNR, and attorney Ralph McCullogh, I ventured to law school hoping to find new tools for environmental protection that did not require traipsing through the woods. I found that new set of tools – statutes, regulations and ordinances, researching and writing, trial and appellate advocacy, and of course support and encouragement from Jimmy and Kathy Taylor, our administrator.

I am thankful that I am able to continue learning to use these new tools at SCELP, and much of that thankfulness goes to you, our supporters. Your continued commitment to our mission has allowed us to make my position here permanent, so that we can continue fighting the good fight for protection of our beautiful outdoors, wildlife habitats, and healthy ecosystems.

South Carolina Environmental Law Project, Inc.
(a 501c3 tax-exempt non-profit corporation)

Mission Statement

To protect the natural environment of South Carolina by providing legal services and advice to environmental organizations and concerned citizens and by improving the state's system of environmental regulation.

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End to Leaking Radioactive Waste (continued)

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nor Jim Hodges, South Carolina joined with New Jersey and Connecticut to form the Atlantic Compact. Current laws still allow some wastes from non-Compact states to be buried at Barnwell, but by 2008 the Chem-Nuclear site will be limited to wastes from the three compact states.

When North Carolina was trying to create a new waste disposal site, Chem-Nuclear was the successful bidder in a competition to design the new facility. The design Chem-Nuclear proposed for North Carolina was significantly different, and more protective of the environment and human health, than the design used at Barnwell. The North Carolina facility would place the wastes above ground, on a thick layer of reinforced concrete forming the floor of burial units. Within these units, wastes would be put into concrete vaults in addition to the "high integrity containers" used for shipping the wastes to the site. All waste disposal activities would be conducted under roofs, to prevent contact with water. The waste vaults would be grouted and sealed to prevent infiltration of water.

During the 1990s, Chem-Nuclear began using concrete vaults at the Barnwell site. These vaults differ, however, from those proposed in North Carolina. The Barnwell vaults have holes in the bottom of them to allow water that enters the vault to drain off into the surrounding soil. Water enters the vaults during normal operations, as operations are not conducted under roofs. The Barnwell vaults are not sealed to prevent water infiltration and their concrete walls are simply designed to support the soil that is placed over the vaults.

As noted earlier, Chem-Nuclear uses trenches dug into the ground at Barnwell. The bottoms of the trenches are supposed to be at least five feet above the highest groundwater table. However, Chem-Nuclear has admitted that it has detected high groundwater levels that rose up into closed trenches. The holes in the bottoms of the Barnwell vaults will allow water from rising groundwaters to enter the vaults.

A dry disposal operation is superior to one in which water is allowed to make contact with the waste. Water serves as the primary factor in both the breakdown of vaults, as well as other containment barriers, and the transportation of radioactive materials into groundwater aquifers and later into surface streams. Surface stream infiltration could then lead to human contamination.

Since the early 1990s, members of the DHEC Board and others have raised questions about improvements in the Barnwell design. In 2001, as part of DHEC's review of the permit renewal, the DHEC staff directed Chem-Nuclear to investigate alternative designs related to water intrusion. Chem-Nuclear provided DHEC with several conceptual design changes and predicted a two-year time frame for final design, DHEC approval and implementation. Yet in 2004, DHEC issued the renewal permit without requiring any follow-up by Chem-Nuclear on the new designs.

At the appeal hearing, conducted in February 2005, Chem-Nuclear and DHEC conceded that simple design changes would significantly reduce the risk of water intrusion into landfill vaults. DHEC said it "could have" required the changes, but provided no explanation of why it did not require Chem-Nuclear to adopt better designs. Although DHEC touted a lengthy "Technical Evaluation Report" as evidence of the DHEC staff's thorough review of the Chem-Nuclear facility, on cross-examination, DHEC's Henry Porter admitted that the report had been entirely written by Chem-Nuclear. When asked whether contamination from the Chem-Nuclear landfill had failed to meet the goal of "isolation of wastes from the biosphere inhabited by man and his food chains," Porter said he was unfamiliar with that phrase. He later admitted that the phrase is part of the DHEC regulation's definition of the term "disposal."

Given that the contamination of groundwater at the landfill boundary currently exceeds state standards, DHEC and Chem-Nuclear have agreed to change the "compliance point" to Mary's Branch, about 3,000 feet from the site boundary. In the late 1990s, landfill operations involving the pumping of accumulated

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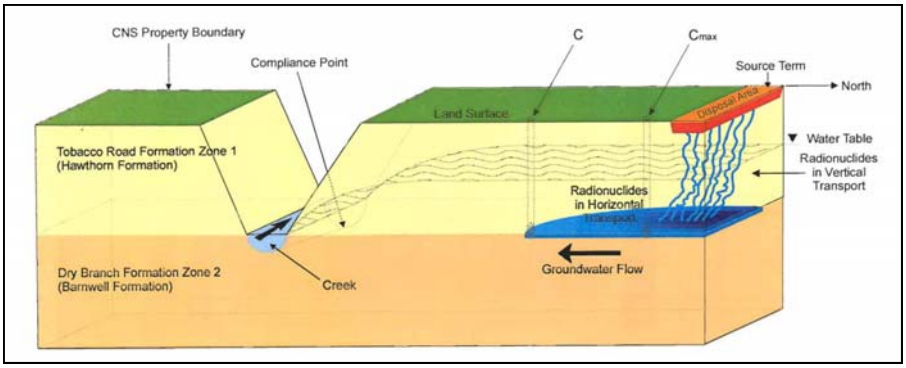

This diagram was used by Chem-Nuclear during the appeal hearing to show how wastes move from the landfill to nearby surface waters.

SCELP and Winyah Rivers Foundation Working Together

SCELP is pleased to be representing the Winyah Rivers Foundation ("WRF") in its first permit appeal. Through the Waccamaw Riverkeeper program, WRF works to protect and preserve the lands and waters of the Greater Winyah Watershed.

The appeal challenges Central Electric Power Cooperative's proposal to construct a new power line through mature forested wetlands and across the pristine and scenic Black River and Lane's Creek in Georgetown and Williamsburg Counties. We seek to avoid environmental harm by having the power line run along one of two existing right-of-ways that have already been cleared and impacted.

Central Electric wants to spoil this scenic vista on Lane's Creek with a high-voltage power line when other alternatives are available.

A Win for the Murrells Inlet Estuary

Our Creekside Cottages case, involving proposed wetland destruction for a residential development, has ended with better protection of the Murrells Inlet estuary.

At the time of our last newsletter, we had won a preliminary ruling from the Administrative Law Court that DHEC was required to consider all wetlands on the development site, even if some of the wetlands had not been delineated by the Army Corps of Engineers. The developer later agreed that there were in fact more wetlands on the site that would be affected. The case was sent back to the DHEC staff for a new review. We submitted lengthy written comments on the destruction of a natural stream system and the financial feasibility of alternative designs.

On the day of the public hearing during the new agency review process, the developer revised his plan so that nearly all wetland impacts were avoided. The impacts will now be limited to a road crossing - the outcome we advocated all along.

Now the stream system that carries drainage waters from the development and surrounding property will be preserved. This compromise will provide natural filtration of stormwater runoff before it reaches Parsonage Creek in Murrells Inlet.

More SCELP Cases

The cases described here are just a small sample of our work. Please check our website **www.scelp.org** for more information and updates on our other cases.

Leaking Waste

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rainwater from a landfill trench resulted in the contamination of the lands of an adjoining church. Chem-Nuclear excavated and replaced several thousand cubic yards of soil from the church property to reduce the contamination to the level of drinking water standards. Both DHEC and Chem-Nuclear said they were unsure of how the contamination occurred.

Chem-Nuclear presented testimony about a study done by its hydrogeologist that concluded that even if all containment fails, the landfill wastes will not exceed safe radioactivity levels for 2000 years. The actual study was not placed into evidence and was protected as a "trade secret" by Chem-Nuclear. Sierra Club's expert on radiation testified that significant amounts of waste in this landfill will be dangerous for far more than 2000 years.

DHEC and Chem-Nuclear jointly filed their own proposed order, plus a memorandum of law, urging the judge to affirm the permit as-is to allow the facility to continue to operate under the existing design.

State Administrative Law Judge John Geathers has the matter under advisement and is expected to issue his ruling soon.

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