

BLUE RIDGE PAPER PRODUCTS & THE MYTH OF A CLEAN PIGEON RIVER

Still Toxic After all These Years



Photo by Mefford Williams

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INTRODUCTION:

A Fish Story—The Myth of a Clean Pigeon River

On January 9th, 2007, North Carolina's State Health Director announced the lifting of the last part of a long-standing fish consumption advisory on western North Carolina's Pigeon River, long blighted by discharges from the enormous Canton pulp and paper mill 30 miles upstream of where the River crosses the border into Tennessee. This was a small germ of real good news: average dioxin levels in fish have now declined to levels that the NC Health Director has determined are below the need for an "advisory." But the River still has a long way to go to be a healthy resource for aquatic life, recreation, or potential drinking water downstream of the state's second largest paper mill on one of its smallest rivers.

The announcement included a quote from Health Director Dr. Leah Devlin, describing the lifting of the fish consumption advisory as an "environmental success story" about an "industry addressing a public health problem," and even expressed pleasure that "we can close the book on this one." This statement ignores a host of toxic and physical problems facing the Pigeon after 100 years of serving as the extended sewer for a large paper mill, and helped to create a flood of glowing editorials about the recovery of the River, with little investigation of its current overall health.

In media reports following the lifting of the fish consumption advisory, it was frequently cited that Blue Ridge Paper had spent about \$22 million to clean up the Pigeon River. However, this appears to be at best misleading, perhaps representing an approximation of all spending on environmental improvements, including air, during nearly 8 years of Blue Ridge ownership. Based on 2001 estimates from the U. S. Environmental Protection Agency (EPA) for the cost of improvements that the mill would carry out during the 2001-2006 period, the authors of this report contend that closer to \$2 million were invested for water related improvements at the mill during the last five years..

In any case, it is not investments by Blue Ridge Paper that have brought about the decline in dioxin levels, contrary to some reports. Dioxin levels in fish have undergone a long, slow decline, resulting from process changes made over 15 years ago by the Canton Mill's previous owner, Champion International. The dioxin was an accidental by-product of chlorine pulping and bleaching, and chemical reactions with the dark, sticky lignin that holds together the cellulose fibers needed for making paper. The early 1990s "Canton Modernization Project," a \$300 million dollar overhaul of the mill, added a single stage of oxygen-based treatment of wood chips (instead of chlorine) for "delignification." Dioxin levels dropped by more than a hundred-fold. All of this happened long before the 1999 purchase of the mill by New York investors and employees to form Blue Ridge Paper Products.

The gradual covering of old, dioxin-laced river sediments through the 1990s to the present has undoubtedly been an important factor in the decline of dioxin levels in river-dwelling creatures. River-bottom insects and other organisms that eat bits of sediment and algae, and are eaten in turn by the fish, would also have had reduced dioxin levels as the old toxic sediments became buried. It is possible that some of the old sediments even washed downstream in the two devastating floods that hit the Southern Appalachian Region in September of 2004.

While the River saw remarkable progress since the increased grassroots activism of the late 1980s, the progress in cleaning up the Pigeon has actually stalled in recent years. When public officials use regulatory announcements to give credit for progress to industry, rather than to the citizens and groups whose efforts created the political pressure for agency actions and provide "cherry-picked" information about environmental conditions, it only delays further progress toward a healthy environment. When media sources fail to consider all toxic impacts, and uncritically use industry numbers for spending on clean up of the River, it adds to the myth of a healthy River, thus making the call for renewed progress seem unreasonable. The Pigeon has been the subject of one of the nation's longest Clean Water Act struggles, largely due to the interstate flow of pollution into Tennessee, while the economic benefits of mill operations belong mostly to North Carolina. It's time to take a closer look at the River and the performance of the region's largest toxic air and water polluter.

This report presents actual data, available from regulatory agencies, to show that progress in reducing "color" in the River has stalled during the recent discharge permit, and that operations at the Canton Mill have not significantly reduced toxic releases to water since the change in ownership. In addition to the highly controversial color "variance" (or exemption from water quality standards), granted repeatedly for almost two decades, we will discuss the impacts of a "thermal variance" that has allowed hot discharges to prevent re-establishing a "native and indigenous" fish population below the mill. We also briefly discuss air quality issues caused by the Canton Mill, the region's largest toxic emitter and major source of greenhouse gases.

100 YEARS OF POLLUTION OF THE PIGEON

...a Decade of Progress in the 90s

When the Canton Mill started operations in 1908, the River turned dark and foamy and fish died quickly. Instead of reducing the impact of a mill which Champion admitted was too large for a tiny mountain river, and which Tennessee officials protested as a threat to downstream health and economy in its first years of operation, North Carolina officials allowed the mill's operations to grow even larger and more damaging.

It wasn't until the River's struggle drew national attention in the 1980's that the EPA recognized that there hadn't been progress consistent with the 1972 Clean Water Act, which called for the elimination of pollution, and restoration of "fishable, swimmable" rivers. In 1985, the EPA took control of the wastewater permit away from NC and attempted to establish a regime for clean up on the River. The EPA set an in-stream "color" standard of 50 "color units" and demanded rapid progress toward that goal. The permit was returned to North Carolina after a court battle, but today, nearly 22 years later, the Pigeon has still not met that standard.

"Color," resulting from the dark pigments in lignin and bleaching fluids removed from the cellulose fibers used to make paper, has been dismissed by many regulators as only an "aesthetic" problem. However, color is only the most visible component of a very complex mixture resulting from chemical treatment of over a thousand tons of wood fiber each day. Daily discharge of more than 20 million gallons of industrial wastewater containing this mixture, even after secondary sewage treatment, releases large quantities of toxic chemicals. It also causes major changes in "oxygen demand" in the river, higher salt concentrations, increased temperature, odor and color in the river, when compared to its pristine condition above the mill.

Downstream communities and environmental activists got increased traction in the late 1980s for cleaning up the River when the danger of dioxin, a highly toxic by-product of kraft papermill pulping and bleaching and other industrial processes, became recognized as a growing environmental health threat. Analytical methods developed rapidly in the 1980s, until dioxin could be detected down to "parts per quadrillion" level (or one part in a "billion, billion" in water or soil). Using these new methods, dioxin was found to be deposited in dangerous quantities downstream and downwind of paper mills, which raised public health concerns, particularly for the fish and neighbors of the tiny Pigeon River.

Frustrated with the slow progress in the clean up, grassroots activists with Greenpeace and east Tennessee-based Americans for a Clean Environment, began posting home-made signs warning people of the danger of dioxins in the River. These actions, coupled with studies by EPA and universities, helped to pressure North Carolina health officials to establish a "fish consumption advisory" and begin officially posting warnings along the River.

With the involvement of downstream and environmental activists, as well as Tennessee state and local officials, the River improved dramatically in the years from 1992-1999. An official challenge to the 1996 wastewater permit, in which the Division of Water Quality (DWQ) allowed even more pollution than the mill was currently producing, brought the EPA back into the fray to negotiate a detailed and rigorous Settlement Agreement in 1997. Under that Settlement, Champion was required to pursue an aggressive set of "best management practices" and process changes to clean up their wastewater discharge. Color dropped from nearly 80,000 pounds per day to under 50,000 lb/day in just over two years—something DWQ officials had claimed would not be feasible. With water quality improving after 1997, the river rafting business in downstream Tennessee grew, but with continuing complaints of odor and itching, especially during periods of low flow. The very best rapids for rafting and kayaking on the Pigeon are in the North Carolina stretch of the river, downstream of Canton. Water quality conditions and odor still cause whitewater aficionados to avoid the area, who say that even in 2007 the Pigeon is "still a Dirty Bird."

More than 1,000 jobs would have been lost if Champion International had shut the mill down in the late 1990s as threatened. So when workers at the mill told downstream residents and environmental groups that they believed they could make a profit AND be good environmental stewards, hopes were raised. Several environmental groups supported a 1999 "Buyout," hoping worker governance would make a big difference for the environment and downstream residents. Because only 40% of the Mill ended up in the worker-owners' hands, the mostly investor-owned (KPS Special Situations Fund of New York) company's goals predictably shifted away from any environmental

improvements not required by regulation. Some employees recognized the importance of building trust and improving workplace and environmental conditions, but management and investor controlled seats on the Board prevented progress. A US EPA with substantially reduced funding and the hostility of the George W. Bush administration towards environmental accountability made progress even more difficult in recent years.

***A Wasted Opportunity for Cleaner Water and Reduced Operating Costs:
The 2001 “Joint Study” and the EPA Tech Team Recommendations***

Just months before the 2001 renewal of the Blue Ridge Paper’s wastewater permit for the mill, a coalition of environmental groups engaged an international mill expert, along with the new company, to study the potential for improving Pigeon River water quality by changing from chlorine- to oxygen-based bleaching and pulping. Environmental groups were impressed by the potential for cleaner water and reduced operating costs. Blue Ridge’s main products, paperboard for containers as well as stationery papers, are made from a mixture of pine pulp (long fibers for strength) and hardwood pulp (short fibers for smoothness). Each type of fiber is processed separately in a “fiber line” in the mill, so all process changes needed to be studied for the two production lines separately. In an effort to improve communication with regulators, environmental groups invited representatives of the NC Division of Water Quality to join them in the mill during the three days of the Joint Study, but they did not attend.

The table below shows a summary of the expected reductions in “pounds of color” per day and the expected cost range of each process change. The two processes marked with a * were judged by mill expert Dr. Norman Leiberhoff to be the ones most readily feasible for the mill to implement. Dr. Leiberhoff identified these processes because they would be relatively small investments for such a large mill, and were expected to produce significant reductions in color and chemical usage, resulting in reduced operating costs for the company. Note that other technologies, such as a hydrogen peroxide bleaching stage for both the softwood and hardwood lines, were expected to be even cheaper to implement and might result in even greater color reductions. The results of the Joint Study thus gave Blue Ridge Paper significant flexibility for process changes, with a range of options to meet ambitious color reduction goals (see Table 1).

TABLE 1A: Process Changes Studied on Softwood Line (pine pulping & bleaching pine)
Source: N. Leiberhoff, “Bleach Environmental Process Evaluation Report” (BEPER), June, 2001

Process Change	Est. Color Reduction (lb)	Capital Cost	Operating Costs	Experience
Extend. Cooking	-2,170	>\$10M	decreased	high
2 nd oxygen delign*	-1,730*	\$1-5M	decreased*	high
Ozone bleaching	-2,800	~\$5M	decreased	moderate
Hyd. Perox. Bleach.	-2,800	~\$1M	increased	moderate
Total Chlorine Free	-9,750	>\$20M	increased	low

TABLE 1B: PROCESS CHANGES STUDIED FOR THE HARDWOOD LINE
N. Leiberhoff, “BEPER”

Process Change	Est. Color Reduction (lb)	Capital Cost	Operating Costs	Experience
Extended Cooking	-2,850	>\$10M	decreased	high
2 nd oxyg. Delign.	-1,430	>\$1-5M	decreased	high
Ozone bleach stage*	-3,550*	~\$5M	decreased*	moderate
Hydr. Peroxide Bleach	-4,700	~\$1M	increased	moderate
Bleach Filtrate Recycle	-5,400	>\$10M	increased	low
Total Chlorine-free	-12,850	>\$20M	increased	low

The Joint Study, as a collaborative effort between the Mill and some of its long time adversaries to find affordable methods that could be implemented in a step-by-step manner to clean up the River, received extensive media coverage. For a brief period after the completion of the study, the full results were released only to the EPA and North Carolina and Tennessee Water Quality officials, but the complete study results were released to the public before the permit hearing in September, 2001.

In July, 2001, after the Study was reviewed by the EPA and the NC Div. of Water Quality, the EPA “Tech Team” issued its own recommendations for process changes to reduce color discharges to the Pigeon River. The 1997 Settlement had created the Tech Team and called for all parties to continue to work for improved water quality “at the quickest possible pace.” The table below summarizes EPA’s 2001 recommendations, including a) color reductions that should be prescribed for the first stage of the permit as the “highest reliability” process improvements, and b) improvements that should be studied further, which would provide substantial additional color reductions and were therefore recommended for implementation in the final years of the 2001 permit. Note that the EPA team recommended two of the same process changes recommended by Dr. Liebergott’s team – a second stage of oxygen “delignification” for the softwood line and an ozone bleaching stage for the hardwood line (with a bit of chlorine dioxide at the finish). EPA projected even greater color reductions and lower capital costs than the Liebergott report.

TABLE 2A: EPA TECH TEAM SUMMARY OF PROCESS IMPROVEMENTS & ASSOCIATED COLOR REDUCTIONS (FOR FIRST PHASE OF PERMIT, “NOT NEEDING FURTHER STUDY”)

Process Improvement	Influent Color Reduction (lbs/day)	Final Effluent Color Reduction(lbs/day)
1 BFR reliability improvement	—	1,000-1,200
2 Improved black liquor leak & spill collection and control	—	> 5,000
6 Process Optimization	1,700	1,400
TOTAL FINAL EFFLUENT COLOR REDUCTION		>7,400

TABLE 2B: EPA SUMMARY OF PROCESS IMPROVEMENTS AND ASSOCIATED ADDITIONAL COLOR REDUCTIONS (“NEEDING FURTHER STUDY”)

Process Improvement	Influent Color Reduction (lbs/day)	Final Effluent Color Reduction (lbs/day)
3 Ozone/Chlorine Dioxide for hardwood bleach line*	3,000-6,400	3,000-6,400
4 2 nd stage OD for pine line*	1,500-2,000	1,100-1,400
5 Color Treatment of CRP Purge Stream	6,000	3,300
TOTAL FINAL EFFLUENT COLOR REDUCTION NEEDING FURTHER STUDY		7,400 - 11,100

TABLE 2C: EPA FINANCIAL ANALYSIS

Process Improvement	Capital Cost(\$)	Annual O&M(\$/year)
1 BFR reliability improvement	\$1,300,000	\$85,000
2 Improved black liquor leak & spill collection and control*	\$100,000	\$50,000
3 Ozone/Chlorine Dioxide stage for hardwood bleach line*	\$1,500,000	(\$350,000) <small>savings</small>
4 2 nd stage OD for pine line	\$2,000,000	(\$3,100,000) <small>saving</small>

SOURCE: *Additional Color Removal Technologies and Their Economic Impacts on Blue Ridge Paper Products, EPA Tech Team, July, 2001*
 * indicates oxygen based technologies also studied by the Liebergott team in 2001.

The total feasible color reductions during the 2001-2006 wastewater permit cycle were predicted by the EPA Tech Team to be over 14,000 pounds/day ($>7,400 + 7,400 = >14,800$ lb/day). According to the economic analysis carried out by EPA, the color improvement technologies would have been expected to “pay for themselves” in a little over two years, with increased net profits after that due to reduced operating (mostly chemical) costs. The Liebergott study was less optimistic about operating costs and the resulting “payback” period for capital costs of the process changes, but still indicated that the company would more than recover its investment within a five year period.

The 2001 NC Permit Renewal: Water Quality “Stall-Out” is Approved by North Carolina

In August of 2001, the NC Division of Water Quality issued a draft permit that required very little color reduction during the five years of the permit, despite the promising recommendations of the Liebergott study and the EPA Tech Team, which indicated that color reductions of about 14,000 lb/day should be readily obtainable. The minimum requirement for the first “phase” of the draft permit was to reduce color discharges to 42,000 lb/day by 2004, although the mill had already achieved that level of discharge by 2001. Only an additional 3,000 lb/day of color reduction was required during the final two years (2005-2006) of the five-year permit, to reach a final limit of 39,000 lb/day. The permit also failed to require implementation of the “consensus” oxygen-based process changes recommended by both the EPA Tech Team and Dr. Liebergott as most feasible to implement.

During the public hearing for the permit in September, 2001, environmental and downstream groups commented that Blue Ridge Paper could reach the 2004 interim and 2006 final limits in the draft permit by doing almost nothing; minimal further implementation of “best management practices” would be more than enough. River advocates contended that this did not meet the commitment of the 1997 Settlement Agreement to continue to improve water quality “at the quickest possible pace.” In a report to the NC Environmental Management Commission (EMC) the Hearing Officer focused on comments that people “didn’t want to close the mill,” and recommended only changing the *ranges* of possible color reductions, rather than strengthening the actual enforceable *limits*. A permit with a color limit ranging from 32,000lbs/day to 39,000lbs/day still gives only an enforceable limit of 39,000lbs/day. Hearing Officer Deerhake even commented in her report that the permit would build a “foundation” for removal of the color variance, despite the fact that the enforceable color reductions would fall far short of improvements necessary to achieve EPA’s 50 color unit standard in the river.

In October, 2001, the EMC approved the permit and continued the color and temperature variances for the mill. Before the final vote, there was extensive discussion between members of the EMC and a DWQ regulator who had advocated during several permit cycles against permits that would require color reductions. Dr. David Moreau, Chairman of the EMC, pointed out that, because the state still hadn’t accepted EPA’s color standard for the River (or adopted another one), it would be very difficult to judge when the variance could be lifted. Clean Water for North Carolina and other groups had called for the development of a numerical standard for many years, as had EPA, but NC officials had refused to do so.

The originally negotiated part of the Joint Study of proposed oxygen-based process changes for the Canton Mill cost about \$8,000 and was jointly financed by environmental groups and Blue Ridge Paper Products. The range of color reduction opportunities was marginalized by NC regulators during permitting. Just as in the draft 1996 permit, NC DWQ assumed that tight limits would be unnecessary for the company and that further color reductions weren’t feasible. Since the 2001 wastewater permit was issued, the Liebergott study and the participation of environmental groups have been used only for “green-washing” by Blue Ridge Paper officials. During public tours at the mill, company officials have even presented a misleading and unethical list of environmental groups which participated in the Joint Study (but clearly opposed the company’s 2001 permit) as “community partners.”

THE CURRENT STATE OF THE PIGEON RIVER

Progress in Color Reduction Stalls Out

The Pigeon River downstream of the Canton Mill is now coffee-colored instead of black, and there are no detectable water releases of dioxin (dioxin is still released to the air). Foam is often still present (below some rapids in NC and especially below the Progress Energy power turbines at Waterville), but it is significantly less than two decades ago. However, progress in cleaning up the discoloration of the River has almost completely stalled for the years of Blue Ridge ownership, as evidenced by the company's "discharge monitoring reports" (See Figure 1).

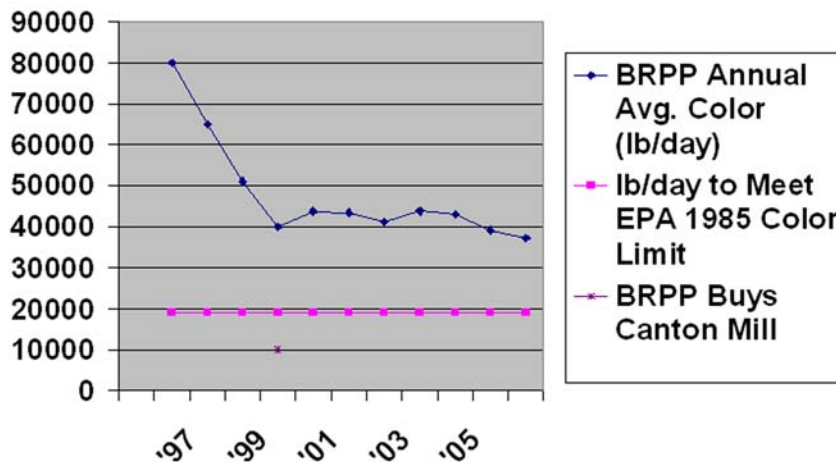


Figure 1: Plot of Annual Average Color in Blue Ridge Paper Products Wastewater Discharge since 1996, the year before the Settlement Agreement. Also shown for comparison is the level of color discharge that would be needed to achieve the 50 color unit in-stream color standard proposed by EPA in 1985. Note that ownership changed from Champion International to Blue Ridge Paper Products in May of 1999. *Source of Data: Discharge Monitoring Reports for Champion International Corp. and Blue Ridge Paper Products, submitted to the NC Division of Water Quality.*

The Pigeon River is classified as a "Class C" surface water (North Carolina's least protective classification), and only aquatic habitat and "secondary" non-contact recreation are "protected uses." Swimming or drinking water protective standards do not apply to Class C waters. Because the downstream portions of the river in North Carolina have been avoided for recreation for so long, it has been difficult to get state regulators to take seriously the health or economic consequences of failing to clean up the river. Even as rafting and other recreational development are underway downstream in Tennessee, those are considered "secondary" uses, so haven't motivated a stricter classification.

In 1996, before the Settlement Agreement, the amount of color in wastewater discharges from Champion averaged 80,000 lb/day or more. By 1999, the year that Blue Ridge Paper Products assumed ownership of the Canton Mill, substantial color reductions had already resulted from the enforceable requirements of the renegotiated 1998 permit (based on recommended color reduction technologies by the EPA Tech Team). With color discharge levels already about 40,000 lb/day when the Mill changed hands, it's easy to see that a permit with a final enforceable level of 39,000lb/day would accomplish little for the river. For the first 10 months of 2006, Blue Ridge's color discharge averaged about 37,000 lb/day, complying with the permit, but **only about 7% below the level in 1999, the year that ownership changed.**

Beyond Color: Toxic Releases to the Pigeon River

While much recent attention has been focused on the reductions in fish dioxins, it's important to recognize that numerous other toxic compounds are discharged to the River as part of Blue Ridge Paper's normal operations. According to the latest available Toxic Releases Inventory data (2004), toxic discharges to the Pigeon River totaled more than 110,000 pounds. Among the chemicals most likely contributing to offensive odors and itching skin and eyes are acetaldehyde, formaldehyde and methanol. However, companies are required to report only some of the chemicals in the complex papermill discharge mixture to the federal Toxic Releases Inventory. In 2001, the year the current wastewater permit was granted to Blue Ridge Paper Products, the Canton Mill released approximately 114,000 pounds of toxic chemicals to the Pigeon River, indicating there has been less than a 4% reduction in toxic releases to water.

TABLE 3. 2004 TOXIC RELEASES TO THE PIGEON RIVER BY BLUE RIDGE PAPER PRODUCTS
 Source of data (most recent available): US EPA Toxic Releases Inventory, accessed February 1, 2007

www.rtknet.org/new/tri

fac.php?reptype=f&facility_id=28716CHMPNMAINS&reporting_year=2004&email=&detail=3&datatype=T&dbtype=C

Chemical Name	Recognized Hazard	Suspected Hazard	Lbs. to Pigeon/Yr
Acetaldehyde	Carcinogen	Immunotoxicant Kidney Toxicant Neurotoxicant Respiratory Toxicant Developmental Toxicant Skin/Sense Organ Toxicant	5,000
Ammonia	Respiratory Toxicant	Neurotoxicant Reproductive Toxicant Skin/Sense Organ Toxicant Gastrointestinal/Liver Toxicant	2,600
Barium Compounds	—	Skin/Sense Organ Toxicant	8,000
Benzo(G,H,I)Perylene	—	—	3.8
Catechol	Carcinogen	Cardiovascular/Blood Toxicant Gastrointestinal/Liver Toxicant Immunotoxicant Neurotoxicant Skin/Sense Organ Toxicant	230
Cresol (Mixed Isomers)	—	Cardiovascular/Blood Toxicant Neurotoxicant Respiratory Toxicant Skin/Sense Organ Toxicant	40
Formaldehyde	Carcinogen	Gastrointestinal/Liver Toxicant Immunotoxicant Neurotoxicant Reproductive Toxicant Respiratory Toxicant Skin/Sense Organ Toxicant	5,200
Lead Compounds	Carcinogen Developmental Toxicant Reproductive Toxicant	Cardiovascular/Blood Toxicant Gastrointestinal/Liver Toxicant Immunotoxicant Kidney Toxicant Neurotoxicant	116
Manganese Compounds	Neurotoxicant	Reproductive Toxicant Respiratory Toxicant	56,000
Mercury Compounds	Developmental Toxicant	Carcinogen Cardiovascular/Blood Toxicant Neurotoxicant	0.2

Chemical Name	Recognized Hazard	Suspected Hazard	Lbs. to Pigeon/Yr
Methanol	—	Developmental Toxicant Gastrointestinal/Liver Toxicant Kidney Toxicant Neurotoxicant Respiratory Toxicant Skin/Sense Organ Toxicant	30,000
Napthalene	Carcinogen	Cardiovascular/Blood Toxicant Developmental Toxicant Gastrointestinal/Liver Toxicant Neurotoxicant Respiratory Toxicant Skin/Sense Organ Toxicant	27
Phenol	—	Cardiovascular/Blood Toxicant Developmental Toxicant Gastrointestinal/Liver Toxicant Kidney Toxicant Neurotoxicant Reproductive Toxicant Respiratory Toxicant Skin/Sense Organ Toxicant	4
Vandium Compounds	—	Kidney Toxicant	1,800
Zinc Compounds	—	Immunotoxicant Respiratory Toxicant	1,300
Total toxic releases to Pigeon River in 2004			110,321

*The Color Variance and other
“Narrative Standards” for Water Quality*

North Carolina has classifications for each of the surface water bodies in the state, intended to protect the best “uses” of each stream, river or lake. Each class has its own water quality standards, as required by the Clean Water Act, and those standards are to be publicly reviewed (along with any variances) every three years. In addition to numerical values for specific chemical pollutants, the state has “narrative standards” for each water classification. Some states have specified measurable ways to evaluate narrative standards (including color) but North Carolina has not, making those standards difficult to enforce. Class C waters, the least restrictive of the state’s classifications, is the default category in North Carolina, unless the public or an agency petitions for a more protective classification. As the state has historically given free use of waters for manufacturing and economic development, Class C waters have sometimes been referred to by water advocates as “industrial waters.” Even for this least protective classification, the regulations governing narrative standards for North Carolina Class C waters say that “oils; deleterious substances; colored or other wastes . . .” may be present in “. . . only such amounts as shall not render the waters injurious to public health, secondary recreation or to aquatic life and wildlife or adversely affect the palatability of fish, aesthetic quality or impair the waters for any designated uses ...”

EPA Region 4 officials in Atlanta have calculated that Blue Ridge Paper would need to reduce its daily discharge to about 19,000 pounds of color each day in order to meet the 50 color unit standard downstream of the mill. The mill is currently operating at about 37,000 pounds/day, so it will still need to reduce color by almost 50% to reach the EPA standard. Only aggressive color reductions can be expected to achieve this goal in the next few years. Advocates who feel that the 2001-2006 permit period has been wasted time (with only a 5,000 lb/day reduction in color) are unlikely to settle for less than major process changes and color reductions in this permit and some are on record as opposing the continuation of the variance altogether. Discontinuing the color variance this year would mean that major process changes or production limits would have to be implemented almost immediately, unless North Carolina regulators seek to evade the EPA in-stream color standard of 50 units.

Further, the NC “narrative” water quality standards don’t just require color to be at a level that doesn’t impair recreation or other uses, they also require that the palatability of fish and other aesthetic characteristics, including odor of the water, be acceptable—issues that NC officials have not yet been forced to evaluate. Despite the lifting of the fish consumption advisory, we have been told that some fish caught below the mill within recent years have released a strong paper mill odor when cooked, so it is likely that fish consumption in that downstream portion of the River will be minimal in the near future. One person who attempted to “catch and release” on the River below Waynesville reported that he had to walk away from the River—the smell from the water was too strong. These concerns must all be dealt with in evaluation of the mill’s compliance with state water quality standards. Now that there is enough progress in color to evaluate other factors, Blue Ridge Paper will be unable to avoid facing the need for further improvements, in addition to major color reductions, to return the River to health and to public uses that are protected by the Clean Water Act.

The Temperature Variance

For the last two decades, Blue Ridge has also been granted a “thermal variance” to the NC Water Quality Standard for the high temperature of its discharge. During the time that the color was more extreme in the River, the Mill’s consultants would use each of the variances as an excuse for the failure to establish a health aquatic population below the mill (i.e. they couldn’t distinguish the effect of the temperature variance on fish and other aquatic organisms from the effects of the color variance).

Recently, as color began improving significantly in the Pigeon, and light could penetrate to allow more normal aquatic growth in the river, the NC Division of Water Quality’s own Bioassessment Unit has begun to express impatience with this strategy of mutual excuses for the failure of the river’s organisms to return to a “balanced and indigenous” population. According to the 2003 Basinwide Plan for the French Broad River, *Biological Assessment Unit staff did not support the mill’s contention that the river supported balanced and indigenous aquatic populations. However, the thermal variance was issued because, besides temperature, additional pollutants continued to affect the current state of the communities in the river (Biological Assessment Unit Memoranda 20010712, 20010614, and 20010612)*. With the improvement in color, it is no longer possible to rule out temperature as a reason for a failure to restore native populations. The continued high temperature discharge to the Pigeon River is also evidence of massive wasted energy by the company, a major releaser of greenhouse gases.

Variances require proof under NC Law that their removal is neither economically technically feasible for a company. Blue Ridge continues to claim confidentiality for financial data, escaping accountability for credible evaluation, and to threaten that its variances are critical to prevent shutdown of the company.

WESTERN NC'S LARGEST TOXIC AIR EMITTER

Blue Ridge Paper Products, whose Title V air permit renewal is currently pending, still releases dioxins to the air along with about 3 million pounds of other toxic and hazardous chemicals. Those releases ranked Blue Ridge as western North Carolina's largest toxic air emitting facility in 2005. Most of the compounds released are associated with health effects ranging from respiratory irritation to carcinogenicity.

Though the federal Toxic Releases Inventory does not require reporting of "Reduced Sulfur Compounds," these compounds responsible for the characteristic "rotten egg" smell of papermills, are associated with eye pain and respiratory distress. Blue Ridge Paper releases more than 500,000lbs of reduced sulfur compounds per year, including hydrogen sulfide, methyl mercaptan and the methyl sulfides. This class of compounds has also been associated with mood instability, and it may contribute to elevated suicide levels occurring in Haywood County, where the mill is located.

At least as dramatic a threat to human health is the emission of more than 570 tons of "PM 2.5," or fine particulates, from the Canton Mill's smokestacks in 2005. These tiny particles, which do not settle readily, can penetrate deep into lungs, carrying toxic chemicals with them, and have long been known to damage the cardiovascular system by an unknown mechanism. A recent University of Washington study of 36,000 women across the U. S. has shown that even tiny increases in PM 2.5 can result in steep increases in risk of strokes, heart attacks and fatal cardiovascular events. Blue Ridge Paper releases more PM2.5 than NC's largest paper mill, International Paper at Reigelwood, and more than each of Progress Energy's coal fired power plants except its largest, the huge Roxboro Steam Station in Person County. Particulates also cause haze and contribute to acid rain and deposition.

Sulfur dioxide, which is released by Blue Ridge in larger quantities than any other "criteria" pollutant (9,000 tons), is a strong respiratory irritant and an important contributor to the formation of particulate (instead of gaseous) emissions. Nitrogen oxides, which interact with volatile organic emissions and atmospheric oxygen and sunlight to produce dangerous ozone, are finally being reduced at the mill to pre-1999 levels by "low NOx" burners in all four coal fired boilers and Select Non-Catalytic Reduction on the mill's largest coal fired boiler. But before those controls were installed to bring Blue Ridge into compliance with an EPA-required overall state plan, the newly formed company had actually increased NOx emissions by more than 30% in its first three years of operation.

Blue Ridge Paper legally challenged its first Title V permit, issued in 2005, so the current draft permit is the result of a complex settlement with state officials. The company also regularly challenges Notices of Violation issued by the Division of Air Quality for excess emissions of smoke or reduced sulfur compounds, detected by continuous monitoring equipment that is increasingly required by air permits.

Clean Air advocates, recognizing the enormous scale and toxicity of Blue Ridge's emissions, will be calling for even more monitoring and reporting, as well as less tolerant interpretations of policies that allow excess emissions during SSM (startup, shutdown or malfunction). Local residents and public health advocates are calling for more ambient monitoring in the community. A local citizen who used monitoring equipment loaned by the UNC School of Public Health was able to confirm that high releases of odorous sulfides tend to occur at night and on weekends, when air quality regulators are unavailable for investigations, just as residents had been reporting.

CRITERIA POLLUTANTS, SELECTED TOXIC/HAZARDOUS AIR POLLUTANTS RELEASED BY BRPP, 2005

Source: NC Division of Air Quality 2005 Air Emissions Summary for Blue Ridge Paper

Pollutant	CAS Code	Emission Reported
Criteria Pollutants		Tons
Carbon Monoxide	CO	2,942.50
Nitrogen Oxides	NOx	3,837.30
Particulates (Total Susp. Particulates)	TSP	777.3
Particulate Matter <10 microns	PM10	679.3
Particulate Matter <2.5 microns	PM2.5	572.7
Sulfur Dioxide	SO2	9,014.40
VOC (Meeting Federal Definition as photochemically reactive)	VOC	1,524.80
Examples of Hazardous/Toxic Pollutants		Pounds
Acetaldehyde	75-07-0	179,195.70
Ammonia (as NH3)	7664-41-7	166,114.80
Arsenic & Compounds (total mass of elemental AS, arsine and all inorganic compounds)	ASC (7778394)	361.216
Chloroform	67-66-3	4,857.50
Chromium - All/Total (Inc Chromium (VI) categories, metal and Others)	CRC	1,554.86
Cresol (mixed isomers)	1319-77-3	15,014.90
Dimethyl disulfide	624-92-0	54,082.50
Dimethyl sulfide	75-18-3	207,071.30
Formaldehyde	50-00-0	17,145.70
Furans - Dibenzofurans (group total - CAA - unchlorinated) (Component of 83329/POMTV)	132-64-9	53.988
Hydrogen chloride (hydrochloric acid)	7647-01-0	85,162
Hydrogen fluoride (hydrofluoric acid as mass of HF- Component of Fluorides)	7664-39-3	54,385.50
Hydrogen sulfide	6/4/7783	106,254.80
Lead and Lead compounds	PBC	761.9
Mercury & Compounds - all total mass, inc Hg Vapor	HGC	36.257
Methanol	67-56-1	1,730,772.60
Methyl mercaptan	74-93-1	155,401.10
Polycyclic Organic Matter (Inc PAH, dioxins, etc. NC & AP 42 historic)	POM	6,086
Sulfuric acid	7664-93-9	179,476.40

CONCLUSIONS

The credit for progress on the Pigeon, substantial but not complete in the past 15 years, must go to downstream communities, environmental activists and public officials willing to stand up for their constituents' concerns. When advocates say the River must be as clean downstream as it is upstream, the authors agree, and believe that continuing rapid improvement in water quality is the legal and moral requirement for Blue Ridge Paper Products. Anything less is a substantial public subsidy of a company that has stalled out in paying its "water bill" for degrading a beautiful mountain river.

The Canton mill has not significantly reduced its toxic emissions to water or air since the ownership change to Blue Ridge Paper Products, and has never come close to reaching a 1985 in-stream color standard for the River set by EPA. North Carolina officials have continued to grant variances from state water quality standards and to draft permits that fail to require clean up to healthy standards, ignoring promising technologies. Despite the requirements of the Clean Water Act, no effort has been made to reduce the overall impact of operations beyond color, including substantial toxic discharges to the River and high temperature.

Blue Ridge Paper Products must reduce its toxic impact dramatically, and be brought into compliance with long-avoided, numerical color and temperature standards, rather than continuing to expect state governance of its variances through environmental mythmaking about a clean River. If worker-owners who promised downstream improvements during the Buyout had more control of investment decisions for the mill, and an early "Machine 19" rebuild had not been so expensively mismanaged, the company might have done more to keep those promises. A persistent coalition of downstream and downwind residents and environmental groups is committed to using the hard lessons they've learned over decades of struggle to protect the public's right: fishable, swimmable water and safe, breathable air.