Temple Inland Black Liquor Spill and Resulting Pearl River Basin Aquatic Organism Kill

LEAN / Lower Mississippi Riverkeeper Monitoring Report

Patrol on August 17, 2011
Presentation to Louisiana State Senate Committee on Environmental Quality August 22, 2011

Tuesday, August 23, 2011

On Tuesday, August 16, 2011 Lower Mississippi Riverkeeper was contacted by Jerry Wagnon, a concerned citizen and 30 year veteran of the Louisiana Department of Wildlife and Fisheries (retired). I could tell by the tone of his voice that Jerry was quite upset. Jerry explained to me what he was seeing happen with the fish kill. He relayed to me that the fish kill was much more severe than was being reported at the time and that it appeared to him that the state agencies were not investigating the incident in an adequate manner. Jerry graciously offered for he and his friend and Pearl River Basin resident Denty Crawford to take us out and see what was going on first hand.

We arranged to meet at 9:00a.m. Wednesday August 17, 2011 at Davis Landing near the city of Pearl River, La. Denty and Jerry picked myself and LMRK Media Master Jeffrey Dubinsky up in Denty's aluminum fishing boat. Denty piloted us on a short ride up to the property he owns between West Pearl River and Porters Bayou. It took only a minute or two to begin to see the carnage. At first it was a few fish here and there hung up near the bank of Pearl River but once we got into Porters Bayou it quickly became clogged by large rafts of dead fish and clams. There were every kind of fish that you would expect to find. Channel catfish, flathead catfish, blue catfish, freshwater drum, buffalo fish, American eel and a variety of shad and bream were the easiest to recognize and made up the bulk of the dead fish we saw. There was also a really astounding number of dead clams, many large baseball to softball size clams and smaller clams as well. The other creatures that we saw dead in large numbers were the larval forms of the dragonfly and the mayfly.

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It was really quite astounding. I have never seen anything like it. And we were assured by Jerry and Denty that we were not even seeing half of what was there the day before. Frankly it was disturbing to see what had to be every fish, clam and larvae in the area dead in the water. I know it was particularly difficult for Jerry and Denty. Jerry spent most of his 30 year career with Wildlife and Fisheries protecting the wildlife and fisheries in the Pearl River Basin area and Denty's whole life revolves around the swamp and the rivers there. They are his home and how he makes his living. Denty was particularly upset by all of the dead catfish (what had to be hundreds of pounds worth just in the small area we could see) as he catfishes to raise extra money to help offset some of the expenses he incurs helping mentor troubled youth from his community. Judging by the sheer number of catfish dead at all stages of life; the outlook for the catfish harvest looks grim for the next year or two assuming the fish begin recovering soon. Not to mention the anxiety and uncertainty of wether the fish will even be safe to eat that area residents will understandably feel after this event.

The natural resource damages from this incident are huge. We were over 30 miles as the crow flies from the outfall of the paper mill and we were seeing utter devastation to the aquatic organisms. The area is home to a number of the state of Louisiana's endangered species including the ringed map turtle, the inflated heel-splitter mussel, the Gulf sturgeon and a plant called the Louisiana quillwort. Dead Gulf sturgeon have already been reported amongst the casualties of this event. However, it appears that the state agencies have not been conducting a thorough investigation of this incident. The magnitude of the incident and the sensitive area in which it occurred calls for a rigorous investigation into the kinds and amounts of toxic materials released, the species and numbers of organisms killed and all potential impacts that this event will have on the ecosystem and the animal and human communities that exist there.

2 Bream Amongst Freshwater Mussels

Endangered Species Known to Inhabit the Pearl River Basin:

Gulf Sturgeon
Ringed Map Turtle
Inflated Heel-Splitter Mussel
Louisiana Quillwort

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This incident negatively affects the economic impacts of commercial fishing, recreational fishing, water recreation, birdwatching, eco-tourism, and etc. Potentially for a long period of time

A clean and healthy Pearl River Basin provides tremendous economic benefits. Good environmental policy is always good economic policy.

Response Timeline

"Thousands of dead fish are floating along a section of the Pearl River from north of Poole's Bluff southward into St. Tammany Parish."

Fish kill affects thousands on the Pearl River

BY MARCELLE HANEMANN
Pontchartrain Newspapers
Published on Saturday, **August 13, 2011** 3:41 PM CDT

"But a district supervisor in Mississippi told the Picayune Item that Temple-Inland was releasing little information and was being uncooperative."

Tests To Determine Cause Of Pearl River 'Fish Kill'

Waste Water Release From Plant Under Scrutiny

WDSU.com

POSTED: 5:34 pm CDT **August 14, 2011**
UPDATED: 11:56 pm CDT August 14, 2011

"St. Tammany Parish President Kevin Davis has declared a State of Emergency in response to a widespread fish kill in the Pearl River Basin."

St. Tammany Parish Declares State Of Emergency After Fish Kill

Hotline Established To Handle Calls Of Concern

WDSU.com

POSTED: 8:41 pm CDT **August 16, 2011**
UPDATED: 9:06 pm CDT August 16, 2011

“Temple-Inland Inc. (TIN) disclosed that it shut down its Bogalusa, La., paper mill Saturday after its waste-water discharge to the Pearl River resulted in a fish kill.”

Temple-Inland Shuts La. Paper Mill; Waste Water Caused Fish Kill

By Melodie Warner
Dow Jones Newswires
AUGUST 17, 2011, 1:22 P.M. ET

“Sources have said the discharge was likely caused by an unplanned shutdown at the mill **Aug. 9.**”

Temple-Inland target of 2 complaints in 2011

By Richard Meek
The Daily News
Published/Last Modified on Wednesday, **August 17, 2011** 12:52 AM CDT

Aquatic Organism Kill Caused by Discharge Of Millions Of Gallons Of "Black Liquor"

"Wilson (Jay Wilson, Temple-Inland vice president for Environment, Safety, Quality and Product Compliance.) admits problems inside the plant, which started mid-week last week, overloaded the mill's waste water system, resulting in the discharge of **16 to 20 million gallons** of the compound (**black liquor**)."

Paper mill owner admits to causing massive fish kill

wwltv.com
Posted on **August 17, 2011** at 5:39 PM
Updated Wednesday, Aug 17 at 5:42 PM

"Temple Inland pumped somewhere between **80 and 100 million gallons of black liquor** into the Pearl River near Bogalusa."

DEQ says Pearl River should quickly return to normal

wwltv.com
Posted on **August 19, 2011** at 5:14 PM
Updated Friday, Aug 19 at 6:13 PM

DEQ Sampling

August 14, 2011 - DEQ takes 1 sample and sends it to the lab. to be analyzed for TSS, BOD, ABNs, Total Phenolics, Oil and Grease and VOCs.

August 16, 2011 - DEQ takes 2 samples and sends them to the lab. to be analyzed for TSS, BOD, ABNs, Total Phenolics, Oil and Grease and VOCs.

August 19, 2011 - DEQ releases the results of only the TSS, BOD and VOC analysis and DEQ scientist Jeff Dauzat states publicly: "It kind of indicates that this is, as we suspected all along, as a biological kill and not a toxic or a chemical kill,"

Potential toxic impacts from this incident cannot be determined based on three samples for which the analytical results for the bulk of the toxic chemicals tested are not yet ready.

Thorough research to determine the full long term impacts to the Pearl River Basin from this incident must be conducted.

Black Liquor

Black liquor is the spent cooking liquor from the kraft process when digesting pulpwood into paper pulp removing lignin, hemicelluloses and other extractives from the wood to free the cellulose fibers. The black liquor is an aqueous solution of lignin residues, hemicellulose, and the inorganic chemicals used in the process. The black liquor composes as 15% solids by weight of which 10% are inorganic and 5% are organic. Normally the organics in black liquor are 40-45% soaps, 35-45% lignin and 10-15% other organics.

> -Stenius, Per, ed (2000). "2". *Forest Products Chemistry*. Papermaking Science and Technology. **3**. Helsinki, Finland: Fapet OY. pp. 62–78. ISBN 952-5216-03-9.

Black Liquor is a term used to describe a collection of many different chemicals left over from the paper making process. It includes materials from the wood as well as the chemicals added for processing. There is no standard composition for Black Liquor.

Early kraft pulp mills discharged black liquor to watercourses. Black liquor is quite toxic to aquatic life, and causes a very dark caramel color in the water. The invention of the recovery boiler by G.H. Tomlinson in the early 1930s, was a milestone in the advancement of the kraft process.

> -E. Sjöström (1993). Wood Chemistry: Fundamentals and Applications. Academic Press.

It is now routine for kraft mills to recover 99.5% or more of the black liquor, with the remainder processed in biological treatment plants, thus reducing the environmental impact of the waste waters.

It is the opinion of Lower Mississippi Riverkeeper based on this incident, as well as things that we are seeing at other paper facilities, that paper mills in the State of Louisiana are being allowed to use outdated and inadequate treatment processes on their waste streams.

All paper mills in Louisiana must be upgraded to the maximum achievable control technology as the impacts from these facilities are unacceptable and represent a significant burden on the nearby ecosystems.

It is only fair that a company that is making a profit from some of our natural resources do everything that they can to prevent their operations from damaging other natural resources relied upon by others such as Denty Crawford.

Lower Mississippi Riverkeeper is a project of Louisiana Environmental Action Network (LEAN)

LEAN

Louisiana Environmental Action Network

www.leanweb.org

WWW.LMRK.ORG

Lower Mississippi Riverkeeper took samples of water and affected organisms during the outing and are currently at the lab being tested for chemical contamination.

We will release our findings as soon as we receive them.

We are honored to have been asked to present to you today and we would be excited to answer questions or discuss matters with the committee at any time.

Thank you for your time and attention to this matter!

All pictures in this presentation taken on August 17, 2011 in the general area of the southern intersection of Porters Bayou and West Pearl River