

**Meeting Summary**  
**BACTERIA TMDL STAKEHOLDER MEETING**  
**Houston-Galveston Area Council**  
**September 7, 2006**  
**4-7PM**

**MEMBERS PRESENT:** Neil Bishop (Development); Delwin Cannon (Agriculture); Claire Caudill (Business); Marilyn Christian (Local Government-Regulator); Catherine Elliot (Local Government-Flood Management); Robert Hauch (Reservoir Operator); Bob Hunt (Local Government-Wastewater); Steven Johnston (Estuary Program); Trent Martin (Local Government-Stormwater); Jack Sakolosky (Local Government-Stormwater); Linda Pechacek (Homeowners Assoc.-White Oak Bayou); Linda Shead (Public); Brenda Thorne (Local Government-Public Health); Mary Ellen Whitworth (Conservation)

**MEMBERS ABSENT:** Adam Aschmann (Development); Craig Bourgeois (Conservation); Terry Hershey (Public); Tom Ivy (Public); Bill Manning Sr. (Wastewater Operators)

**H-GAC STAFF PRESENT:** Carl Masterson; Todd Running; Jeff Taebel

**OTHERS PRESENT:** Mary Jane Naquin (Facilitator); Mark Lowry (TCB/JTF); Ron Stein (TCEQ); Helen Drummond (GBEP); Scott Lowry (Aquazyme Disposal); Karen Atkinson (TCEQ-Houston Region); Brian Koch (TSSWCB-Wharton Regional Office); Linda Broach (TCEQ-Region 12); Faith Hambleton (TCEQ); Kim Laird (TCEQ); Alisa Max (HCSWQS); Michelle Ruckstuhl (TCEQ); Paul Jensen (PBS&J); Jim Coody (GHBA) – sitting in for Adam Aschmann; Pat Smiley (HCSWQ); Mary L. Purzer (TCB); Mel Vargas (Parsons); Jon- Komar (HCSWQ); Gail Price (City of Houston); Robert Aoair (CES); Joe Meyers (HCFCD); Gian Villarreal (UH); Tina Peterson (UH) Sharon Crabb (TCB); Susan Karlin (City of Houston); Roger B. Whitney (City of Houston).

**WELCOME & INTRODUCTIONS**

The meeting was called to order at 4:05p.m. Mary Jane Naquin welcomed the group, followed by self-introductions.

**REVIEW AGENDA**

Mary Jane Naquin reviewed the agenda with the group.

**ADOPTION OF FEBRUARY 7, 2006 MEETING SUMMARY**

The February meeting summary was e-mailed to the group; members took a moment to review it and then approved it.

**HARRIS COUNTY PRESENTATION OF STUDY RESULTS TO DATE**

Trent Martin introduced the presentation and provided a brief summary of what Harris County Stormwater Quality has done. The Illicit Discharge Detection Elimination Program (focusing on Brickhouse Gully and Vogel Creek) is wrapping up now. Tried to locate and eliminate each illicit discharge during dry weather. Lab samples showed that in almost every case, the sources were from allowable (permitted) discharges. One finding is that nutrient levels are 2 to 3 times what you would find in a natural stream. This sort of environment can foster E-coli growth. Need to develop a better understanding of e-coli.

Mark Lowry presented the first and second rounds of WWTP outfall sampling. Basically, the study was trying to look at what contributions were coming out of WWTP and what the estimated loading might be from those plants (initial contribution and re-growth). The E-coli bacterium is

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very common in the environment here and has a tremendous re-growth in these warm conditions. They only looked at plants that were at or above 50% loaded (n=26), but now there may be a significant number of plants that were underloaded. They looked at flow coming out of the plants, chlorine (free, total and combined), nutrients, and a number of bacteria species including E-coli, Shigella, fecal coliform, and Staph. The 1<sup>st</sup> round of sampling also included sediment sampling. Some of the facilities are pretty striking with the levels of E-coli. This cannot be construed as a regulatory sample – just interested in the load. Samples were taken at the end of the pipe, not where regulatory samples would be taken. Found that 25-22% of plants in both sampling rounds had potential issues. The grab sample is 394 for E-coli, the geometric mean is 126 (not enough samples to look at mean from this study). In the 2<sup>nd</sup> round of sampling, TCEQ was doing some regulatory sampling of free chlorine at the same time. If you compare the self-reported dry weather flows for White Oak Bayou, it is over the 7Q2 low flow. In Buffalo Bayou, 67% effluent to stream flow (low). No plants had issues with total suspended solids or nitrogen. At this point, we don't know how significant this is. There is a compelling need for further study to look at what these quantities are and the re-growth issue. We should look at correlation to pathogens. So far, there is no observable pattern.

Jim Coody asked if the data was taken from the two streams. Mark Lowry answered no – about half of plants from White Oak Bayou and Buffalo Bayou. Jim Coody asked if they observed any possible control strategies. Mark Lowry answered that the one obvious one was increased chlorine, but that could cause other problems. They didn't get into other control strategies – just looking to see if there was sufficient justification for other studies.

Bob Hunt asked if they considered re-growth in outfall pipe. Mark Lowry answered yes, definitely, but wanted to stress that these samples were not regulatory. Their desire was to find out what is hitting the stream.

Faith Hambleton added that another municipality did a similar study and cleaned out the pipe area, which resulted in a dramatic reduction of bacteria.

Paul Jensen noticed that samples with large E-coli numbers had low chlorine numbers. He asked if those plants dechlorinated the effluent. Mark Lowry didn't think so, but that would be included in the study report.

Bob Hunt asked if they were able to conclude that peak flow had an effect on E-coli. Mark Lowry confirmed that that was not substantiated in this study.

Trent Martin wrapped up the discussion and noted a handout with a number of issues that Harris County Stormwater would like to resolve.

### **ALLOCATION STRATEGY & LIKELY ALLOCATIONS**

Ron Stein talked about the practical aspects of the allocations, what they have to produce, what characteristics they have to have to be of use to us. An allocation is really a description of a particular impairment in a particular stream. Our description is for the sources of bacteria concentration in two streams – a very complex problem, which presents significant challenges. Our description must be based on observable and valid data, simple or complex, approvable, flexible, focus resources effectively, that provides enough information to manage important public health issues. Our description will be flow-based (low, median, wet). The load estimates will be based on observed data. Break down the allocations into load and margin of safety, which gives us a way to deal with our problems in a variety of ways. The purposes of the TMDL are independent of being exact and precise.

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Dr. Hanadi Rifai reviewed the TMDL equation:  $TMDL = WLA \text{ (controllable)} + LA \text{ (uncontrollable)} + MOS \text{ (5\%)}$ . The spreadsheet model (BLEST - Bacteria Load Estimating System Tool) is set up to follow the TMDL equation.

In this study, the wasteload allocation included WWTP discharges (normal flows, wet weather flows, including biosolids), dry weather storm sewer discharges (DWSS), wet weather MS4 discharge loads, sanitary sewer overflow (SSO) discharges (72% delivery rate), and on-site sewage facility (OSSF) discharges. The load allocation included bed sediment resuspension (usually during wet weather conditions), direct deposition, and upstream segment input. The margin of safety in this case is 5%.

Summing up all this information, you get around 40 million gallons on a low flow day, 730 billion MPN/day with flows of almost 9 MGD. The contact recreation target is a couple of hundred billion on a low flow day, 400 billion on median, 1000 billion on wet weather. We have to figure out how much to cut to meet the standard.

Ron Stein provided insight on the TCEQ perspective. They wanted to take a look at the current regulatory programs in effect to see if they were successful in controlling the discharges. If they were successful, we can see if standards would be met. They aren't looking at anything new, but looking at what was already had in place. This will tell us how it will help us manage the problem. We don't know what the risk of human health is from direct deposition (animal). If they can determine the real risk to human health, the equation will be more accurate. A report will be finalized by the end of October and will be in the TCEQ adoption process in early spring.

Linda Pechacek asked if the allocation description is iterative, and if it would change if more data were available. Ron Stein answered that it was not and that once they settled all the data in, the numbers would be fixed, and they anticipate that will happen next month. Linda Pechacek asked if anything from the model had been incorporated. There is nothing from the model in the spreadsheet.

Jim Coody asked if the EPA was opposed to non-contact. He had talked to EPA and they said they didn't oppose but would require a use attainability analysis. Tom Weber said that they are using TMDL as an existing standard and that the process to change could take up to a decade and was up to the states to decide.

Kim Laird noted that 80-90% of WWTP had problems that TCEQ was concerned about. They found plants with wash outs during dry weather, plants with seemingly clean effluent but with very different readings over a course of 15 minutes, and plants with other problems. There is still more data to obtain and finish up. They have made some changes internally and they are hoping to see changes in operators with more unannounced inspections. They hope to finish by the end of September.

Neil Bishop reminded Ron that they were going to look at criteria for certain flows, but the presentation indicated that they would have criteria for all flows. Ron said that in order to be flow specific, they would need to have a Use Attainability Analysis (UAA). There is a protocol in place for contact recreation, and that is a UAA. However, there is not a specific criterion for what needs to be in place for a UAA. Part of a UAA is a use survey. This survey process is not so clear for a 500 square mile watershed – they have to figure this out.

Linda Shead noted that there are plenty of kids playing in Buffalo Bayou and that saying there is no risk during high flow is a little too simplistic.

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Todd Running noted that H-GAC will start a UAA with TCEQ hopefully this month. This will include developing protocols for contact recreation UAA and some epidemiological work. Right now, they are putting together a work group to kick off this project. Tom Weber stated that TCEQ is interested in this type of study, but there is some difference of opinion on how to work this into the later plan.

### **LINDA PECHACEK COMMENTS**

Linda Pechacek distributed summary and provided comments on the Buffalo and White Oak Bayous bacteria TMDL study. Her report noted that a comprehensive BMP program in the two watersheds may not be successful in meeting bacteria state stream standards during all flow regimes, which is important in the highly variable urban wet weather flows. She noted that we need to place importance on developing or modifying criteria to address wet weather flows. She is concerned that the regulations are getting ahead of the science and that will cost a lot of money. She is concerned that there is too much uncertainty in the available data for TCEQ to set a final TMDL for the sources currently identified.

### **MEMBERSHIP ISSUES**

Ron Stein talked about starting the organization of the implementation plan partnership – the group that will shepherd the development of the plan. It would be good to start that process as soon as possible. The group should be in place next spring. Claire Caudill asked if this was a time that we might want to change people. Ron Stein said yes and that this would be a time where we would kind of start from scratch to make sure there is balance.

### **MEETING CONCLUSION**

Next meeting was scheduled for the first Quarter of 2007.

### **ADJOURN**

The meeting adjourned at approximately 6:37 PM.