

**Fifth Meeting of the  
OSO CREEK/OSO BAY BACTERIA  
TMDL PROJECT  
Meeting SUMMARY  
5-16-06**

**Present at Meeting:**

Chad	Ahlgren	TCEQ
Ray	Allen	Coastal Bend Bays & Estuaries Program, Inc.
Krystal	Alvarado	TX A&M Student
Gerardo	Arrambide	TCEQ – Region 14
Cliff	Beaber	Wastewater Department
Olga	Beaber	City of Corpus Christi
Jim	Bowman	Coastal Bend Bays & Estuaries Program, Inc.
Jim	Boyle	
Max	Castaneda	City of Corpus Christi
Zeke	Campbell	TAMU-CC
Carl	Didier	Landowner
Gary	Eddins	Barney Davis Power
Ken	Faughan	Robstown Area Development Commission
Howard	Fels	Barney Davis Power Station
Jeff	Foster	TCEQ
Johnny	French	Retired - US Fish & Wildlife
Rocky	Freund	Nueces River Authority
Andy	Garza	Texas State Soil and Water Conservation Board
Craig	Giggleman	USFWS
Peggy	Glass	Alan Plummer Assoc, Inc.
Vickie	Harraghey	Texas Excursions
Rick	Hay	Center For Water Supplies
Clare	Lee	US Fish and Wildlife Service
Rebecca	Martinez	CBCOG
Ron	Massey	City of Corpus Christi
Daniel	McGinn	City of Corpus Christi - Planning Dept
Andrew	Mott	Student and Stakeholder on Oso
Joanna	Mott	TAMU-CC / Center for Coastal Studies
Alex	Nunez	TPWD
Leah	Pummill	Audubon Outdoor Club of Corpus Christi
R. Jay	Reining	City of Corpus
Craig	Reynolds	Sam Kane Beef Processing
Karl W	Schuler	Corpus Christi Windsurfing Assoc (CCWA)
Amanda	Smith	TAMU-CC
David	Sullivan	Naismith Engineering/Nueces County CBBF
Peggy	Sumner	City of Corpus Christi
Pat	Suter	Coastal Bend Sierra Club
Theresa	Swirenko	
Leo	Trevino	CBBEP
Guy	Watts	
Aaron	Wendt	TSSWCB

**Project Staff Present:**

Sandra Alvarado – Texas Commission on Environmental Quality

Earlene Lambeth – Texas Commission on Environmental Quality

Rick Hay – Center for Water Supply Studies, Texas A&M University Corpus Christi

Joanna Mott – Texas A&M University Corpus Christi

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**Stakeholder Meeting Agenda**  
**FOR THE**  
**Oso Creek/Oso Bay Bacteria**  
**Total Maximum Daily Load (TMDL) Project**

**SPONSORED BY THE**  
**Texas Commission on Environmental Quality**

**May 16, 2006**  
**6:30 – 8:30 p.m.**

**Carlos Truan Natural Resources Center, Room 1003 on the Texas A&M University**  
**Corpus Christi campus located at 6300 Ocean Drive**

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The purpose of the meeting is to respond to comments from the previous meeting, present and discuss the model results, and discuss on-going projects in the watershed.

- 6:30 Welcome and Introductions - Sandra Alvarado
- 6:40 Discussion of Brainstorming Session from Previous Meeting – Sandra Alvarado
  - Compare/Contrast Petronilla vs. Oso Watersheds
  - Other Uses Assessed in Oso Creek and Oso Bay
- 7:00 Results from Oso Creek/Oso Bay Watershed Model – Rick Hay
- 7:30 Discuss Model Results – Sandra Alvarado
- 8:00 Other on-going projects
  - CBBEP OSSF Project
  - CBCOG Trash Clean-up Project
  - City/County Water and Sewage Service Extension to Rose Acres
  - Groundwater Monitoring Project
  - CIAP Workshop
- 8:30 Adjourn

### **CALL TO ORDER/WELCOME:**

Sandra Alvarado, TMDL Project Manager with the Texas Commission on Environmental Quality (TCEQ) opened the fifth in a series of meetings for the on-going Oso Bay/Oso Creek total maximum daily load (TMDL) bacteria project. A special thank you was given to Ray Allen of the Coastal Bend Bays & Estuaries Program for their continued support to the project and providing refreshments for the attendees. Sandra also thanked Texas A&M University Corpus Christi for the use of their facility to hold the meeting.

Sandra took a few minutes to respond to comments received at the last Oso meeting held on 1/17/06. One of the questions that was asked at the last meeting was if the Petronila Creek had been assessed the same as the Oso? Sandra presented a slide presentation showing all of the monitoring and a comparison of the two water bodies' assessment. She reported that there does not seem to be a problem with bacteria in Petronila Creek. A copy of her presentation can be viewed at the following web address:

<http://www.tceq.state.tx.us/assets/public/implementation/water/tmdl/67-update-5-16-06.pdf>

### **RICK HAY – TMDL MODEL REPORT**

Rick reported that the model had been under construction for about a year with several variations. He reviewed the model, the model modifications and adjustments made since the last meeting, each station, and several items that had been observed during that time. He talked about “dry day loading” and also gave a brief lesson on groundwater. Rick reported that it was important to take care of the dry day loadings because the creek and bay will not meet its geometric mean without reducing the bacteria input from dry weather. Rick reported some of the potential sources of the dry day loadings might be groundwater influx, bacteria from septic systems, birds nesting under bridges, trees, other wildlife near the creek, illegal discharges to the stream, leaking utilities, broken sewer line, or possibly natural bacteria growth in the creek. He said they did not know but those were some possibilities.

He touched on groundwater which is water (rainfall) that flows through the sub-surface. He said the rain would flow vertically until it reaches the water table and then flows horizontal. He said the groundwater is what keeps streams flowing when it is not raining.

In summary he reported the following:

Station 13441 (in segment 2485 – Oso Bay) does not meet water quality goals.

Load reduction.

- Dry day loading must be reduced by 75% (4.7x10<sup>12</sup>).
- Removal of runoff loading **does not** reduce load enough to meet geometric mean rule.
- Removal of load from Oso WWTP **does not** reduce load enough to meet geometric mean rule or the single sample rule.

Station 13441 may not be representative of ambient conditions in Oso Bay.

- Does not respond in a similar fashion to other stations.
- Is not in the direct flow pattern of the Oso Creek/Oso Bay drainage system.
- Station 13441 (in segment 2485 – Oso Bay) does not meet water quality goals.
- Load reduction.
  - Dry day loading must be reduced by 75% (4.7x10<sup>12</sup>).
  - Removal of runoff loading **does not** reduce load enough to meet geometric mean rule.

- Removal of load from Oso WWTP **does not** reduce load enough to meet geometric mean rule or the single sample rule.

Rick's conclusions were as follows:

- Potential sources of dry day loading should be investigated.
  - Ground water interaction with Oso Creek/Oso Bay will be investigated by CWSS over the next year.
  - Wildlife or other animal input should be evaluated.
    - Netting could be placed under bridges to prevent roosting/nesting
    - Better management of domesticated animals in vicinity of the creek.
  - Natural growth of bacteria in the creek should be investigated.
    - Structures (like saltwater dams) could be constructed that would shallow the creek at various points to allow greater exposure of bacteria to UV light

A copy of Rick's presentation can be viewed on-line at:

<http://www.tceq.state.tx.us/assets/public/implementation/water/tmdl/67-bactloadmodel-5-16-06.pdf>

(Q) Questions (A) Answers (C) Comments

(C) We rather have birds than the water.

(Q) If you pour water into the upstream stations to try and dilute the dry day loadings, how much water would you have to pour in?

(A) I don't know we did not look at that. We would need to dilute where the geometric mean is 1,300 – 1,400. At one time we removed the inflow from the power plant and we saw a small increase of bacteria loading in the bay, nothing dramatic at all.

(C) Dry day loading exists at all the stations and even in the bay. The bay is in good shape and can assimilate the loadings; it is the creeks that have such a problem. What hurt the most are these high values. What if our die off rate is wrong? That would change the magnitude of the load.

(Q) How do you attack dry day loading short of just putting more water in?

(A) If we could actually find out what the source is – that would help. We have a few things we are going to look at such as groundwater to see if there is any problems with interactions between that and the bay & creek (influx). If it is birds everyone already told me I can't go after them. The creek is very murky water and there is not much light penetration. It is murky, kind of salty, and nice and warm. If I were bacteria I wouldn't mind living there. If we can increase the light penetration would help.

(Q) The dry day runoff is a small numbers compared to urban – wouldn't it be more practical to attack some of the larger numbers?

(A) That goes back to the way the rules are written. It is still based on concentration.

(C) – JM You might look at Petronila.

SA – Remember the Petronila was impaired for chlorides. So it could be saltier throughout.

(Q) When first looking at Oso in the light, you see 10 or 11 permitted dischargers that go into Oso Creek, starting with Robstown. How does your model treat the re-growth of the bacteria? Does it assume nothing?

(A) All of the wastewater dischargers chlorinate before they discharge. There should not be any growth. They supply us with their self-reporting data. We measured bacteria at one plant and we applied it to all of them, including Robstown. It averaged out to about 5 CFU. We do not have any re-growth unless this is what this dry day load is. We don't have any data.

Sandra asked the stakeholders to tell her how they felt about the model approach as a whole. Were we missing something? The dry day load is a big unknown but the overall approach? The outcome – is there something we are missing - some sources, some data? She asked for feed back. Does the model seem logical?

The sense from the stakeholders was that they were in agreement and did not know of anything they were missing and the model seemed logical.

(Q) Even during the dries weather period and you have these elevated numbers. If you go to the head waters and eliminate as many complicated factors as you can, down to the next monitoring station, one would think we could look at that one segment really hard and figure out where that dry load is coming from.

(A) That may be all it takes and maybe we calculated different loads for each section, it may not be a different generator. It may all be from a similar situation. I originally thought about die-off rates because some of the creek is covered in riparian, the water is murky. I feel good about the die-off numbers we calculated.

Sandra recognized Russell Carden, who has worked with Rick Hay on the model and performed the calculations. The stakeholders gave them both a round of applause.

Brief report on other projects in the area:

- CBBEP OSSF Upgrade Project – Funding may be coming available to upgrade colonias and septic systems in the area; \$400,000 from EPA 319 funding and could impact up to 100 households; repair or upgrade or close out abandoned facilities that impact the Oso; assessment and prioritization will be taking place
- CBCOG Trash Pick-up Project – Rebecca Martinez with the CBCOG reported that the EPA was still considering the 319 funding for trash pick-up in both watersheds and still in the planning phase. Plan would be to use the funding to pay for heavy equipment to help with the trash pick-up in the area.
- City/County upgrade of Rose Acres OSSF – Dave reported improvement to area should be completed soon
- CIAP Coastal Impact Assessment Project - <http://www.glo.state.tx.us/coastal/ciap/index.html> A public meeting held by the GLO and MMS is scheduled for next Thursday, May 25th in Corpus Christi at 1:00 p.m. at the Math and Science Resource Center at TAMUCC to review the project nomination process for inclusion in the state plan and recently released documents related to the plan and projects. The DEADLINE for project nominations to be included in the state plan is June 20, 2006.

The meeting was adjourned.

**ACTION ITEMS:**

Check into the volume of water needed to dilute bacteria levels.