

**Status Report  
Modeling Technical Review Group (MTRG)  
Savannah Harbor Expansion Project  
November 18, 1999**

A meeting was held on November 18, 1999 at EPA's office in Atlanta, GA in accordance with the MTRG's recommendation to review the status of the water chemistry data collected during August 1 – October 9, 1999. The goals of the meeting were as follows:

- Determine Coordination Activities associated with Wastewater Characterization Data.
- Develop Recommendations on In-stream Water Chemistry Data.
- Discuss Modeling Schedule and Review Process.

This status report provides a summary of the comments received, discussion of the analytical laboratory issues, and recommendations made by the MTRG. The MTRG meeting included a visual presentation of the Wastewater Characterization Data by Brittany Robinson (Harbor Committee) in the morning and a visual presentation of the In-Stream Water Chemistry Data by Steven Peene (ATM) in the afternoon.

The following persons provided input and/or participated in the MTRG discussions:

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Paul Conrads	USGS	803-750-6140	pconrads@usgs.gov
Jack Tuschall	STL-Savannah Labs	912-354-7858	
Helen Beaty	International Paper	912-238-7539	helen.beaty@ipaper.com
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**Communication Process**

- ATM will post a list of “unresolved issues” in a table on the MTRG web site. This table will serve as a running list for issues that will be addressed later in the review process. The table would also have a column to note when/how the items will be resolved. Once an item is resolved it will be noted as such with the date resolved. Examples of “unresolved issues” include: single rate oxygen demand in the harbor, integration of SOD and water column loading, reaeration rates, and critical conditions.
- Reporting process: consensus from the MTRG was that the reporting and communication process was working fine and should remain.

**Wastewater Characterization Study (WWCS)** - performed by the COE/Harbor Committee and provided to the MTRG for coordination purposes only.

- MTRG recommends examination of methods used for measurement of BOD5. Comparison to occur between the 3 laboratories and DMR data. Results of findings to be presented at next MTRG meeting.

- Harbor Committee will need to issue a final report on the WWCS (provided by the COE). This information may be pulled into the Waterways Database by EPA. The report should include:
  1. Summary of the findings of the study, recommendations, and the data to be used for calibration.
  2. Statistical analysis with variability.
  3. The middle range with sensitivity testing for parameters.
  4. Calibration loads with flow data.
- WWCS report will be available to the MTRG for review: March 1, 2000. It is anticipated that the Harbor Committee would make a presentation on the report to the MTRG.
- Present the following results at next MTRG meeting:
  1. Comparison of BOD5 testing methods for labs and participants.
  2. Crosscheck data for BOD5 from participants.
  3. Proposed BOD5 Study by different methods by Savannah Labs.
  4. Review DMR data for the participants and compare to WWCS Results.
  5. Law will compile BOD5, NO<sub>2</sub>+NO<sub>3</sub>, NH<sub>3</sub>, and TKN for interim results of LTOD tests.
  6. Request that laboratories provide values below reporting limits.
- If any facilities want to retest, need to collect samples now since all data input needs to be to the MTRG by March 1<sup>st</sup>.

### **In-Stream Water Chemistry Data**

- TKN: MTRG reviewed data and determined it is appropriate for use in model calibration.
- NO<sub>2</sub>+NO<sub>3</sub>: MTRG reviewed data and determined it is appropriate for use in model calibration.
- NH<sub>3</sub>: MTRG reviewed data and determined it is appropriate for use in model calibration.
- Total P: ATM will analyze results to determine how/if to adjust Week 1-6 Data. This will be presented on January 12, 2000 in ATM's report.
- Orthophosphate: ATM will analyze results to determine how/if to adjust Week 1-6 Data. This will be presented on January 12, 2000 in ATM's report.
- Discard BOD5/CBOD5 data with over dilutions.
- Look at different methods used for BOD5 used by the labs (data subject to evaluation).
- ATM will prepare and submit to the MTRG on January 12, 2000 a summary of the in-stream water chemistry data.

### **MTRG Model Development Timeline**

- ATM issued a timeline and review process for the model development which was accepted by the MTRG. Attached is a copy of the methodology submitted.

### **Data/Method Comparison**

- MTRG requested that USGS provide finalized hourly flow data from the Clio Station. The months of flow data will include June, July, August, September, and October. Paul Conrads agreed to provide.
- ATM will include a section in the data report on comparing meteorological and hydrological conditions during the summer of 1999 versus historic conditions.

### **Future Meetings**

Next MTRG meeting in Savannah, GA = January 20, 2000.

## MTRG Review Process for Model Development

In support of the Savannah Harbor Expansion Project Tier II EIS, a model development program has been proposed. This model development program consists of three primary work tasks. These are as follows:

- Task SEGCL 1 – Evaluate Salinity/Chloride Relationship and Develop Chloride Sub-Model
- Task SEGDO2 – Refine, Update, and Verify Hydrodynamic Model
- Task SEGDO1 – Develop Dissolved Oxygen Model

**These tasks are extensions of model development work conducted under the Savannah Harbor Deepening Project Tier I EIS.**

As part of the Stakeholder Evaluation Group (SEG) process, a Modeling Technical Review Group (MTRG) was formed to develop the scope of work necessary to produce an acceptable calibrated model of the Harbor to be used to evaluate the potential effects of proposed changes. The SEG has also recommended that the MTRG continue to provide reviews and recommendations in the ongoing model development work. This review group consists of representatives from the following agencies and Stakeholders:

- EPA
- GAEPD
- SCDHEC/SCDNR
- USACOE – District/WES
- USGS (for the USF&W)
- Harbor Committee
- City of Savannah
- Coastal Environmental Organization (CEO)
- Skidaway Institute of Oceanography
- USFWS
- Savannah Maritime Association

This group provided review and recommendations on the development of the Field Data Collection Task Statements (SEG311, SEG312, and SEG313), as well as ongoing review of the implementation of the data collection program. The MTRG also provided review and recommendations on the development of the Modeling Task Statements listed above.

Incorporating the recommendations of the MTRG, the Modeling Task Statements have been recommended for approval through the SEG review process. The following describes the proposed role and activities of the MTRG through the execution of the Modeling Task Statements.

The MTRG will meet on a regular basis and ATM will provide to the MTRG updates on the progress of the Model development. The MTRG will provide review and recommendations on the work completed based upon the progress reports and interim deliverables presented by ATM. The MTRG will be an active participant in the determination and development of the model coefficients, inputs, and comparison methodologies. This will be done through the review process. The goal will be to develop stepwise review and recommendations, such that upon completion of the model development, the MTRG is in agreement with the coefficients, inputs, and accuracy of the hydrodynamic, water quality, and chloride models. The submittal and approval, therefore, of the final model development reports should be complete by the end of this stepwise review process. This will eliminate the need for substantial alteration of the model upon completion and expedite the overall review process. Additionally, if representatives of the various stakeholders are required to develop their review opinions in the light of review by other technical experts, this will reduce the amount of non-technically based

opinions, maximize the credibility of the model verification and allow all stakeholders to represent their positions through a qualified expert review process. The following table presents a proposed schedule for the review of the interim deliverables to be produced for each task.

Task Number	Interim Deliverable	Start Date	End Date
SEGDO2			
:	1). Implement Interstitial Salinity Algorithm	1-Dec-99	1-Feb-00
	2). Perform Convergence Test and Optimize Grid Resolution	1-Dec-99	1-Feb-00
	3). Check 1997 Calibration and Revisit Turbulence Scheme	1-Dec-99	1-Feb-00
	<b>Present 1997 Calibration to MTRG</b>		
	4). Verify Hydrodynamic/Salinity Model to 1999 Data Set	1-Feb-00	1-May-00
	5). Finalize Interstitial Salinity Algorithm	1-Feb-00	1-May-00
	<b>Present 1999 Verification to MTRG</b>		
	8). Prepare Report	1-May-00	1-Jun-00
SEGDO1			
:	1). Historic Data Review	1-Dec-99	1-Feb-00
	2). Preliminary Model Set-Up, Refinement, and Testing	1-Jan-00	1-Jun-00
	3). Analysis of 1999 Data	1-Jan-00	1-Mar-00
	<b>Preliminary Presentation of Data Analysis to MTRG</b>		
	4). Determination of Input Conditions for 1999 Calibration	1-Mar-00	1-Apr-00
	<b>Present Input Conditions to MTRG</b>		
	5). Determination of Initial Model Rates and Constants	1-Apr-00	1-May-00
	<b>Present Initial Model Rates and Constants to MTRG</b>		
	6). Calibration to 1999 Data	1-May-00	1-Sep-00
	<b>Present Initial Model Calibration to MTRG</b>		
	8). Sensitivity Testing	1-Sep-00	1-Nov-00
	<b>Present Revised Model Calibration and Sensitivity Testing to MTRG</b>		
	9). Final Report	1-Nov-00	1-Dec-00
SEGCL1:	1). Develop Historic Data Base	1-Dec-99	15-Jan-00
	2). Analyze Historic and 1999 Chloride Data	1-Jan-00	1-Mar-00
	<b>Present Analyses of Chloride Data to MTRG</b>		
	3). Hydrodynamic Model Refinement	1-Feb-00	1-Apr-00
	4). Develop and Calibrate Chloride Sub-Model	1-Apr-00	1-Jul-00
	<b>Present Chloride Model Calibration to MTRG</b>		
	5). Prepare Report	1-Jul-00	1-Aug-00