

**Technical Oversight Committee Meeting**  
 November 7, 2002  
 South Florida Water Management District Headquarters  
 3301 Gun Club Road  
 West Palm Beach, Florida 33406

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**TOC Attendees**

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| 1. Garth Redfield, TOC Chair, SFWMD                | 27. Carol Maddox, SFWMD                              |
| 2. Bill Baxter, TOC agency representative, USACE   | 28. Loren M. Mason, USACE                            |
| 3. Frank Nearhoof, TOC agency representative, FDEP | 29. Jim McAdams, USACE                               |
| 4. Mike Waldon, TOC agency representative, USFWS   | 30. Paul McCormick, ENP                              |
| 5. Mike Zimmerman, TOC agency representative, ENP  | 31. Paul McGinnes, SFWMD                             |
| 6. Carlos Adoriso, SFWMD                           | 32. Ben McPherson, USGS                              |
| 7. Nick Aumen, NPS/ENP                             | 33. Damon Meiers, SFWMD                              |
| 8. Bill Baker, MFL, Inc. (Ag. Consultant)          | 34. Brooks Moore, USACE                              |
| 9. Tim Bechtel, SFWMD                              | 35. Cheol Mo, SFWMD                                  |
| 10. Kelly Brooks, Miccosukee Tribe                 | 36. William Niemer, USACE                            |
| 11. Kirk Burns, SFWMD                              | 37. Kevin Palmer, USFWS                              |
| 12. Laurene Capone, EAA Research and Management    | 38. Douglas Pescatore, SFWMD                         |
| 13. Bahram Charkhian, SFWMD                        | 39. Tracy Piccone, SFWMD                             |
| 14. Maxine Cheesman, SFWMD                         | 40. Barbara Powell, SFWMD                            |
| 15. Linda Crean, SFWMD                             | 41. Dean Powell, SFWMD                               |
| 16. Linda Davis, SFWMD                             | 42. Pete Rawlik, SFWMD                               |
| 17. Naomi Duerr, SFWMD                             | 43. John H. Raymond, SFWMD                           |
| 18. Gary Goforth, SFWMD                            | 44. Jim Riley, USACE                                 |
| 19. Steve Gong, CH2MHILL                           | 45. David Rudnick, SFWMD                             |
| 20. Larry Grosser, SFWMD                           | 46. Mark Shafer, USACE                               |
| 21. Matt Harwell, USFWS                            | 47. Pam Sievers, SFWMD                               |
| 22. Delia Ivanhoff, SFWMD                          | 48. Tommy Strowd, SFWMD                              |
| 23. Ron Jones, Miccosukee Tribe                    | 49. David Struve, SFWMD                              |
| 24. Jennifer Jorge, SFWMD                          | 50. Kimberley A. Taplin, USACE                       |
| 25. Julia Lacy, SFWMD                              | 51. Sharon Trost, SFWMD                              |
| 26. Paul Linton, SFWMD                             | 52. Carrie L. Trutwin, SFWMD                         |
|  | 53. Stuart Van Horn, SFWMD                           |
|  | 54. Bill Walker, U.S. Dept. of the Interior (DOI)    |
|  | 55. Jeff Ward, Sugar Cane Growers Cooperative (SCGC) |
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**Agenda Item #1: Approval of Minutes from the April 23 and August 1, 2002 TOC Meetings - Garth Redfield, SFWMD.**

Garth Redfield opened the meeting at 10:05 a.m. Tommy Strowd asked if, for Agenda Item #3, he could go first because he needed to leave early. There were no objections to the change.

Redfield announced that because the number and significance of issues coming before the TOC have increased, as reflected in the meeting agenda and list of action items, it has become necessary to formalize the TOC meeting process, including taking a vote on select issues in agenda items marked with an asterisk on the TOC agenda (attached to minutes). He also requested that each of the five member agencies have at

least one representative in attendance at subsequent TOC meetings to ensure that each agency's opinion is represented whenever a vote is taken. Someone asked whether this signified a change in direction for the TOC, since in the past the committee had never formally voted. Redfield said it did not represent a change in direction. The TOC has routinely decided on issues through discussion and consensus, and voting on certain items was simply a way to ensure an official record of the basis for TOC decisions.

Redfield said Linda Davis had electronically mailed out copies of the final meeting minutes from the April 23 and August 1, 2002 TOC meetings (Attachments A and B, respectively). He asked if there were any objections or recommended changes to either document. There were none, and he declared the April 23 and August 1 meeting minutes approved.

**Agenda Item #2: Water Quality Conditions (WQC) Reports to the TOC - Tim Bechtel, Delia Ivanhoff and Cheol Mo, SFWMD.**

Tim Bechtel presented data on stage and geometric TP means, and the interim and long-term limits for the Arthur R. Marshall Loxahatchee National Wildlife Refuge (Settlement Agreement April-June 2002 Report, Attachment C). He said the geometric mean in April was lower than both the interim and long-term limits. There were no applicable P limits for May because stage was below 15.42 feet; the Settlement Agreement specifies that water quality data are not applicable to compliance when the average stage in the Refuge is below that elevation. Furthermore, only three sites were sampled in May 2002 because most of the sampling sites were dry. In June, the geometric mean was lower than the interim limit, but higher than the long-term limit. Bechtel referred to a map of the Refuge showing sampling locations, and two spreadsheets containing original P data (Attachment D). These were provided for the information and use of the TOC.

Bechtel then discussed data on TP and chloride concentrations. He noted that Loxahatchee 4 had the highest chloride and also the highest TP concentrations. There was discussion regarding STA-1 East discharges and maximum pumping capacity. There was discussion about a hydrologic model being developed for the Refuge and about new flow coming into the marsh. There was a question and discussion about whether the frequency of missing data was an indication of a problem with the sampling design.

Moving on to discuss information on Everglades National Park, Bechtel presented data on the relationship between the base period total flow and the current water year at Shark River Slough. He said the 12-month flow-weighted mean concentrations are getting close to the interim limit for Shark River Slough. He presented data on Taylor Slough and indicated that Taylor Slough is in good shape. He noted there were a couple of high composite samples collected earlier this year, and at this time there is no explanation for those events.

There was discussion about whether all the structures were flowing equally at that location. There was discussion and agreement regarding the fact that the peak concentrations occurred during periods of low flow. Mo pointed out that there was a lot of construction activity in the area at those times when the peaks occurred. Redfield asked if anyone from the District had checked turbidity data for those times, because if construction activity was responsible for the peaks, then there should be a corresponding spike in turbidity. Mo said he would check on that. Mike Zimmerman

asked if someone from the District could notify the TOC when the data were available. Redfield asked Bechtel to e-mail Linda Davis when the data are posted on the Web **(Action Item)**.

Delia Ivanhoff presented the Quality Assessment (QA) Report for Water Quality Monitoring of TP (Attachment E) and offered the following highlights:

1. Out of 106 blanks, only 1 exceeded criteria during the quarter.
2. Precision criteria were met, except for two pairs, which were flagged.
3. The District is no longer routinely collecting field blanks because they are no longer required and were not providing useful information, anyway. There has been a 42% reduction in flags using the new criteria.
4. QC recoveries are generally within criteria, plus or minus 10%.
5. Recovery for QC 5, a very low-level sample, is 83% to 117%; mean recovery is 102 percent. Analytical precision at low levels is less than 2.0%; the average precision at high levels is 0.6%.

Bill Walker asked whether the District had looked at precision in the very low levels in which the TOC is primarily interested. Ivanhoff said the District does not routinely look at that, but she said the information could be included in the next QA Report. There was discussion about splits and laboratory variability. Redfield decided that the District should provide data for concentration ranges 0 to 20, 0 to 50, and the entire range **(Action Item)**, and the results would be discussed at the next TOC meeting. There was discussion about lower phosphorus and the nature of the geometric mean. Matt Harwell asked if it would be possible to see individual data points to compare DEP's points to the District's. Redfield said that could be addressed at the next TOC meeting **(Action Item)**. There were no further questions or comments on Water Quality Conditions or Quality Assessment reports.

**Agenda Item #3: Continuing Evaluation of the Phosphorus Concentrations in Shark River Slough; Follow-up on Action Items from the August 1, 2002 TOC Meeting – Tim Bechtel and Cheol Mo, SFWMD (Items 1b and 1f, 4, 5 and 6); John Raymond, SFWMD (Item 1a); Tommy Strowd (Item 1c), SFWMD.**

Tommy Strowd presented a history of changes in operations associated with Water Conservation Area 3A (WCA-3A) and the South Dade Conveyance System (SDCS) (Item 1c, Attachment F). He discussed operations in general, the experimental program of rainfall driven deliveries, the Cape Sable Seaside Sparrow, and ISOP 2000. He offered this summary:

- 1) Modifications to the operations of WCA-3A and the South Dade Conveyance System have occurred over most of the past 20 years.
- 2) Responses of the system to various operational regimes are highly dependent on meteorological conditions, i.e., wet/dry seasons, floods and droughts.

Someone asked about the operation of S-336. Strowd said the District was still working on that. Kim Taplin said the Corps has also looked at it and has applied for an operating permit from FDEP but has not yet received approval.

At the end of Tommy Strowd's presentation, there was discussion about the relationship between stage in WCA-3A and inflows from the EAA, S-9, and tribal lands to the west. There was discussion about the S-12, S-175 and S-332 operating systems.

John Raymond offered a presentation of stage data from WCA-3A (Item 1a, Attachment G). His analysis of various data sources clearly documented that the stage data from the District's database are wholly consistent with other available data and that there are no systematic shifts in the data through time. There were no questions or comments on Raymond's analysis of WCA-3A stage data.

Cheol Mo and Tim Bechtel presented an analysis of recent phosphorus data from Shark River Slough and inflows to Everglades National Park as a follow-up to Bill Walker's earlier report to the TOC (Action Items 1b, 4, 5 and 6, Attachment H). There was discussion regarding the possibility that next year the District would exceed the interim P limit. Mo presented data from 1995 showing that concentrations in Shark River Slough appear to vary in association with water management. There was discussion regarding the P dynamic with respect to flow rate. There was a suggestion that data for individual structures should be made available. Redfield agreed and said the District would make it available (**Action Item**).

Aumen asked if there was a process for moving forward more quickly on some TOC issues by working in subcommittees in between the regular quarterly meetings. Redfield suggested organizing a sub-team wherein each agency would appoint a representative to discuss analyses. He suggested creating a Web board to keep the TOC dialogue moving forward (**Action Item**).

Walker pointed out that it looks like concentrations through S12A are going up and suggested that this issue might be examined. The pattern might be examined at other Tamiami Trail structures, particularly with regard to stage variations and management operations; it would also be useful to look at flows along L-28 and S343. Redfield said there would be a follow-up item about this at the next TOC meeting and that a list of what needs to be analyzed would be posted on the Web board (**Action Item**).

Redfield adjourned the meeting at 12:15 and requested that the TOC reconvene at 1 p.m., after lunch.

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Redfield reconvened the TOC meeting at 1:05 p.m.

**Agenda Item #4: TOC Compliance Methodology for P Load Reduction – Bill Walker and Gary Goforth, SFWMD; other parties.**

Garth Redfield noted that at the previous TOC meeting, copies of Bill Walker's 1996 paper on a test for evaluating the performance of STAs had been distributed (Attachment I). Redfield said he had received no response or comments on the paper in the intervening weeks and he proposed the following motion:

- (1) That the TOC accept the compliance methodology outlined in the 1996 Walker paper.
- (2) That the information be reported annually in two places:
  - (a) In the quarterly TOC report at the time when STA performance is summarized for the Everglades Consolidated Report, and
  - (b) In a table in the quarterly TOC report published after the ECR is distributed.

Kelly Brooks questioned whether recommending and approving was within the TOC's authority. She stated that the Tribe's position is that only the parties, not the TOC, have the authority to approve. Redfield disagreed, explaining that the TOC was

comprised of representatives of all the Settling Parties and that the TOC had routinely addressed compliance issues in the past. None of the TOC members disagreed. There was discussion about reporting frequency, and whether loads, in addition to concentration, would be reported.

Brooks, referring to page 8 of the 1996 Walker paper, said the Tribe's position is that the Settlement Agreement doesn't allow for a timeframe when there is no testing for compliance. There was continued discussion about the issue of load reduction measurement. Brooks reiterated the Tribe's objection to the compliance methodology issue.

Redfield proposed that the TOC:

1. Accept the Walker 1996 methodology (as applied repeatedly in STA permits).
2. Report on compliance in the Everglades Consolidated Report.
3. Report data to the TOC once a year in the Water Quality Conditions Report, with the exact methodology of data reduction to be determined.

He asked for TOC consensus on the compliance methodology. There was consensus among the TOC representatives. Brooks objected on the grounds that agreeing to the motion would violate the terms of the Settlement Agreement. Redfield noted the objection.

**Agenda Item #5: Progress on S-5A Sampling – Bahram Charkhian, SFWMD.**

Bahram Charkhian offered a brief presentation on a new autosampler at S-5A. There was discussion regarding the relevancy of S-5A. Ron Jones pointed out that the principal element in stainless steel is molybdenum, which can give false positives for P at low levels. Redfield agreed that was a good point and said the District would look into it (**Action Item**). There were no further comments.

**Agenda Item #6: Atmospheric Deposition Monitoring; Discussion of Wet Deposition Data Analysis – Bahram Charkhian, SFWMD.**

Bahram Charkhian said the District is reviewing data from rain gauges and other sources related to atmospheric deposition of phosphorus. He said he hoped to be able to present an update at the next TOC meeting (**Action Item**). There was a comment and discussion about the process being time consuming. There were no further comments.

**Agenda Item #7: Introduction to Optimization of Coastal Zone Monitoring – Garth Redfield and Naomi Duerr, SFWMD.**

Redfield offered a presentation regarding monitoring network optimization for water quality monitoring along Florida's southern coast (Attachment J). He said the District is using a four-pronged approach to look at the value and necessity of the monitoring network:

1. Relevance to the District's mission
2. Appropriateness/effectiveness of the design
3. Statistical value of the data
4. Other costs, benefits and/or partnerships

He said the District is not attempting to discontinue the overall monitoring network; rather, the agency is attempting to determine whether there is redundancy in monitoring certain stations (Attachment K). He reported that the District was not yet finished with its analysis, which should be available in a few weeks. He indicated that the District is using

a new zero-based budget process to evaluate all expenses. There were no further questions or comments. Redfield said there would be a follow-up item on the monitoring issue at the next TOC meeting (**Action Item**).

**Agenda Item #8: Update on the C-111 Interim Operational Plan and Water Quality Monitoring – Kim Taplin, USACE; Pete Rawlik and Bahram Charkian, SFWMD.**

Bill Evans presented results of water quality monitoring in the S-332D area (Attachment L). Naomi Duerr asked if the Corps had applied for an FDEP permit and if the Corps would need to obtain the permit some time this month. Taplin said the Corps had applied for a permit. There was discussion about the reasons why deep wells are needed in the Park.

Pete Rawlik presented an update on the C-111 Project Monitoring Plan (Attachments M and N). He said the District had received conflicting comments about the monitoring plan and he asked the TOC to help resolve those conflicts, which he highlighted during his presentation. He said hydrologic monitoring of the detention areas is a key component of the project, and the District's position is that Berm B-3 should be used as the outflow point because it is the best place to monitor. There was discussion and disagreement as to whether Berm B-3 is the most accurate representation of what is going into the Park. Rawlik stated that the District recommends monitoring at Berm B-3. Duerr seconded the statement. There was continued discussion and disagreement about the recommendation.

Rawlik said the District had received comments regarding monitoring and that the District recommended that only the two discharge sites coming into the Park be monitored, and then only for flow and only if the District experts say it is feasible. There was extensive discussion about the reasons for conducting the monitoring and whether it would be sufficient to have stage gauges there.

Rawlik said the question had been raised as to whether time or flow composites were preferred for permit compliance monitoring of detention areas. The TOC's consensus was that flow composites should be used. There was continued discussion of the issue.

Rawlik said the question had been raised regarding the monitoring of berms. He said that if Berm B-3 is not defined as the outflow, then the District recommended monitoring Berm B-3. He asked if there were any objections. There was extensive discussion of the issue.

Rawlik said a question had been raised regarding whether to monitor all four diversion structures. There was discussion of the issue. He said the District recommended monitoring structures that were discharging into the Park.

Rawlik said the District was conducting periphyton monitoring and ecological response monitoring of macrophytes and sediments at 12 sites. He said the District had also proposed monitoring of four surface water sites to meet standards for compliance monitoring. Site locations have not been selected. He recommended integrating periphyton monitoring with ecological response sites. He said anyone who had additional comments should let him know. There were questions regarding whether there would be any integration with existing wells and whether the wells would be shallow or deep.

Rawlik said questions had been raised as to whether the eight groundwater wells should be integrated with existing wells and whether they should be shallow or deep wells. There was extensive discussion of these issues.

Taplin said the Corps had agreed to be the permittee and wanted to know how the District's plan would compare to that. There was discussion of the issue. There was discussion about seepage measurement.

**Agenda Item #9: Update on STA-1E Scheduling – Paul Moczynski, U.S. Army Corps of Engineers.**

The USACE provided a handout, Update on C-51/STA-1E (Attachment O), in response to interest in scheduling issues on STA-1E. The author, Paul Moczynski (USACE), could be made available by telephone if there were questions regarding the handout. Nearhoof asked whether there would be an emergent vegetation-dominated cell, because it was a potential permit issue. There was some discussion of that issue.

Refuge representatives asked if toxic contaminant and nutrient soil sampling are planned prior to flooding STA cells. The Refuge believes this is needed and would like to have the opportunity to review and comment on plans for this testing. These data should be available for review prior to flooding of STA cells. Also, they asked if there are plans to develop and implement a water quality monitoring plan prior to pump testing. They stated that monitoring water quality within flooded cells and in discharges to the Refuge is necessary. They also requested a copy of the vegetation management plan for STA-1E. There is a concern that proceeding with STA operation without such a plan that has been reviewed by the TOC may lead to added requirements for herbicides and delays in the STA becoming operational. Concerns were also expressed that pumps could drive contaminated water into the Refuge interior during the pump testing.

**Agenda Item #10: Western Basins Update; BMP Program, STA-5 Status, and Plans for STA-6, Section 2 – Sharon Trost and Gary Goforth, SFWMD.**

Pam Sievers gave an update on the western basins and the BMP program. Nearhoof asked if the District had thought about working with landowners on securing "319" Grants. There was discussion about public funding and the western basins.

Gary Goforth offered a presentation on the status of STA-5 and STA-6, Section 2 (Attachment P). He said that while the STA achieved a 70-percent reduction in phosphorus, it was still putting out 78 ppb because of high inflows and concentrations. He said the District remains concerned about the C-139 Basin and its influence on STA-5.

Goforth said STA-6, Section 2, is fully funded; design is scheduled to begin in 2003, with completion by 2006. He said the District is committed to building STA-6, Section 2, it is fully budgeted, and the agency is ready to move forward on the project.

**Agenda Item #11: Public Comments.**

There were no public comments. Redfield said the District would be setting up a Web board (**Action Item**) and that anyone who wanted to post something on it should contact him or Linda Davis. Redfield adjourned the meeting at 3:25 p.m.

***Final Agenda***  
**Technical Oversight Committee**  
**November 7, 2002, 10 a.m. to 3 p.m.**

**South Florida Water Management District Headquarters**  
**B-1 Building, Storch Room**  
**3301 Gun Club Road**  
**West Palm Beach, FL 33416-4680**

Introductory Comments: Additions or Modifications to the Agenda. Discussion of TOC Charge and Deliberative Process. - **Garth Redfield (TOC Chair), SFWMD.**

1. \* Approval of TOC Minutes from April 23 and August 1, 2002 TOC Meetings (10 minutes). **Garth Redfield, SFWMD.**
2. \* Water Quality Conditions Reports to the TOC (45 minutes). **Tim Bechtel, Cheol Mo and Delia Ivanhoff, SFWMD.**
3. Continuing Evaluation of the Phosphorus Concentrations in Shark River Slough; Follow-up on Action Items (attached) from the August 1, 2002 Meeting (1 hour). **Tim Bechtel and Cheol Mo** (Items 1b and 1f, 4, 5 and 6), **John Raymond** (Item 1a), and **Tommy Strowd** (Item 1c), SFWMD.
4. \* TOC Compliance Methodology for P Load Reduction Requirements of the Settlement Agreement (1 hour). Consideration of Walker 1996 methodology and its reporting. **Bill Walker and Gary Goforth, SFWMD,** and other interested parties.
5. Progress on S-5A Sampling System (15 minutes). **Bahram Charkhian, SFWMD.**
6. Atmospheric Deposition Monitoring; Discussion of Wet Deposition Data Analysis (5 minutes). **Bahram Charkhian, SFWMD.**
7. Introduction to Optimization of Coastal Zone Monitoring (15 minutes). **Garth Redfield and Naomi Duerr, SFWMD.**
8. Update on the C-111 Interim Operational Plan and Water Quality Monitoring (1 hour). **Kim Taplin, USACE; Pete Rawlik and Bahram Charkhian, SFWMD.**
9. Update on STA-1E Scheduling (5 minutes). **Paul Moczynski, USACE** (handouts only).
10. Western Basins Update; BMP Program, STA-5 Status and Plans for STA-6, Section 2 (20 minutes). **Gary Goforth and Sharon Trost, SFWMD.**
11. Public Comments.

**\* Items for consideration and possible action by the Technical Oversight Committee**

(Attachment: Action items from the August 1, 2002 meeting are on the following page).



**Action Items from the August TOC Meeting as of September 12, 2002**  
**Garth Redfield, TOC Chair, SFWMD**

1. Continue studies of factors influencing phosphorus levels entering the Park through Shark River Slough.
  - a. Provide a letter report on the consistency and accuracy of stage data for WCA-3A, 1978 to 2001 (Bill Walker recommendation #1). **John Raymond**.
  - b. Develop a brief report on the effect of altering structures providing the inflow, particularly S-333 versus S-12s (Walker commendation #2). Investigate the effects of shifting flow input points on P levels (Walker recommendation #5). **Tim Bechtel** and **Cheol Mo**.
  - c. Provide a brief letter report on WCA-3A water management. Has management changed in recent years, particularly during wet years? **Tommy Strowd**.
  - d. Investigate phosphorus concentrations into and within WCA-3A (Walker recommendation #3). This will combine data analyses done for the ECR and for the USA case status report. **Tim Bechtel** and **Cheol Mo**.
  - e. Compare S-151 to Park inflow structures for trends. Looking at various parameters may help isolate the linkage between canal and marsh levels. Longer-term project, lead **TBD** (DOI or DEP?).
  - f. Consider for TOC discussion our ability to assess compliance in years when stages exceeds the calibration range (Walker recommendation #4). Prepare graphs showing compliance with and without correction for high flow. **Tim Bechtel** and **Cheol Mo**.
2. Conduct data analysis of wet phosphorus deposition data and develop brief technical paper on data quality after slash guards have been implemented. **Hosung Ahn**. Make recommendation to TOC on whether atmospheric wet deposition monitoring should be continued for November meeting. **Garth Redfield** and **Naomi Duerr**.
3. Distribute the STA compliance methodology developed by Bill Walker in 1996. Consider adopting this as the compliance approach for the load reduction targets of the Settlement Agreement. Develop one-pager for TOC review providing background facts (Gary's appendix to the Status Report) and formalize this approach to track load reduction compliance. **Garth Redfield** and **Gary Goforth**.
4. Provide results from site inspection in cooperation with the Park on inflow locations; CH2MHill monitoring plan? Computation of limits when flow is released through S-334. Walker recommendation #7. **Tim Bechtel** and **Lisa Smith**.
5. Develop P-loading table for EPA inputs by area. Discuss at TOC and in ECR Chapter 2. **Cheol Mo** and **Ken Weaver**.
6. Individual stations in the Refuge should be looked at for TP trends and importance to overall geometric mean. A preliminary analysis will be done by **Tim Bechtel** and **Steve Hill**.

Walker's recommendations are given in "Walker W.W. 2002. Analysis of recent P data from Shark River Slough inflows to Everglades National Park. DRAFT for discussion at the TOC meeting, August 1, 2002."