Notes from the Quarterly Meeting of the Everglades Technical Oversight Committee (TOC)

September 21, 2023

South Florida Water Management District
3301 Gun Club Road, West Palm Beach, FL 33406

TOC Representatives:

Julianne LaRock, TOC Chair, SFWMD	Lori Miller, LNWR
John Barkett, Special Master	Edward Smith, FDEP
Daniel Crawford, USACE	Donatto Surratt, ENP

Note: *This meeting was conducted in person, online, and by phone, and was recorded by a court reporter. Copies of the transcript are available for purchase. Please contact Florida Court Reporting (561-689-0999) for more information. Handouts and presentations are available on the TOC website (https://www.sfwmd.gov/our-work/toc) and a recording of the meeting is available online at SFWMDTV YouTube Channel – TOC Meeting September 21, 2023*

Note: *Definitions of agency acronyms are provided at the end of the notes.*

1. **TOC Opening Business – Julianne LaRock, SFWMD**

1A. Welcome, Announcements, and Identification of Participants

Julianne LaRock called the meeting to order.

1B. Agenda Modifications and Documents Available on the TOC Website

There were no requests to modify the agenda.

1C. Approval of Meeting Summary for June 27, 2023

The TOC approved the June 27, 2023, meeting summary with no requests for changes.

Associated Online Documents:

- Final Agenda for September 21, 2023
- Draft Meeting Notes for June 27, 2023, Meeting

2. **Settlement Agreement Quarterly Report, First Quarter, January–March** – Chelsea Qiu, SFWMD

Chelsea Qiu presented the Settlement Agreement Report for the First Quarter 2023, January-March 2023, which includes results of total phosphorus (TP) monitoring in the Arthur R. Marshall Loxahatchee National Wildlife Refuge (LNWR), Shark River Slough (SRS), and Taylor Slough and Coastal Basins (TSCB) through March 2023. Results for SRS were calculated using provisional flow data and are preliminary.

Refuge 14-station geometric mean TP values for January, February, and March 2023 were below the computed long-term levels (LTLs). Fourteen stations were sampled in January and February and Thirteen were sampled in March. The 36-month average TP geometric mean is 6.9 parts per billion (ppb), which is 2.4 ppb below the 36-month average LTL of 9.3 ppb. It was

noted that the 17.14 ft NGVD29 was used to calculate the LTL even when the average stage for the month of January was 17.25 ft.

For SRS, preliminary results were presented for the 12-month periods ending January, February, and March 2023. The 12-month total flows were extremely high in terms of the flow range of the Appendix A equation. As a result of the high flows, the Appendix A calculation used the lowest possible LTL of 7.6 ppb. Therefore, the TP flow-weighted mean concentrations (FWMC) for this quarter were higher than the LTLs.

For TSCB, results for the 12-month periods ending in January, February, and March 2023 were presented. TP FWMC values for TSCB for WY2023 continue to be less than half of the LTL (11 ppb) at 5.1 ppb for each period.

Questions, Comments, and Discussion:
Lori Miller asked Chelsea for clarification on slide fourteen on what contributes towards the results of stage, flow, and TP FWMC for the "look ahead" portion of the chart. Special Master John Barkett asked why the provisional data wasn't provided during this presentation. Chelsea explained that the "look ahead" data was a preliminary look at compliance through the end of the federal water year and that data is provisional needing to undergo the Quality Assurance/Quality Control process. She also explained that based on the current trajectory of the provisional data, another exceedance is expected to occur for WY2023.

Bill Walker, consultant to Department of Interior (DOI), raised a point about how the flow compared to the flow used by the water quality modeling formula for the Combined Operational Plan (COP) Adaptive Management Plan. He stated the following points: The COP AMP formula uses 3A stage, stage gradients and the rate of stage increase at S333HW. More flow is being delivered to the Northeast SRS as intended for hydrologic restoration. However, the flow distribution is different from the historical data that was used to calibrate the COP AMP water quality model and may be outside the calibration range. He concluded that it is possible that the water quality formula for the COP Adaptive Management Plan needs to be revised using more recent data. Dan Crawford responded the Water Quality formula developed for COP assumed that a downward trend in the nutrient levels for 3A would continue. However, this has not been observed in the empirical data due to the exceedances being seen at an 80% clip for the past five years. These exceedances were not anticipated by the analysis that was conducted and as mentioned by Bill, and the Water Quality formula calculation should be revisited by United States Army Corps of Engineers (USACE) and the National Park Service (NPS) as part of the Operational Planning Study that USACE initiated in April of 2023.

The TOC Representatives thanked Chelsea for an excellent presentation that was clear and concise.

Associated Online Documents:

- Settlement Agreement Quarterly Report, January–March 2023, presentation
- Settlement Agreement Report, First Quarter, January-March 2023
- Quality Assessment Report for Water Quality Monitoring, January–March 2023 (First Quarter)
- Quality Assessment Report for Water Quality Monitoring, January–March 2023: Water Quality Data (First Quarter)
- Arthur R. Marshall Loxahatchee National Wildlife Refuge Total Phosphorus (TP) Compliance Status as of First Quarter 2023
- Provisional Shark River Slough First Quarter 2023 Total Phosphorus (TP) Data Report
- Taylor Slough and Coastal Basins First Quarter 2023 Total Phosphorus (TP) Data Report

3. **Shark River Slough WY2022 Water Quality Compliance Evaluation** – Donatto Surratt, ENP

Donatto Surratt provided an overview of the conclusions drawn from his SRS compliance evaluation of WY2022. The data was analyzed from the perspective of potential regional and local drivers of water quality. Donatto opined that the regional and local drivers may include the following:

- Levels of TP discharged into the Miami and L67A canals continue to be higher than 8 ppb of TP that are protective of ENP. Additionally, analyses show increasing TP FWMC levels along the western boundary of WCA 3A.
- Local drivers focus on the conditions when stages are below 9.2 ft at S333 headwater and include the following:
    - Exceedances are more likely when high percentages of flow from the S333s are delivered once the stage was below 9.2 ft.
    - In WY2022, 54% of flows were delivered when water levels were below 9.2 ft, substantially more flow into SRS during low canal stages than in previous periods.
    - There is a strong inverse relationship between TP and stage—when the stages are lower, the TP values are higher.
    - Flow has increased in the past few years with an increase in the amount of total flow being delivered when stages are below 9.2 ft. The flow is no longer routed into south Dade and all the water was incorporated into the SRS compliance calculations, resulting in the limit being exceeded.
    - The concern for exceedance is heightened when flows are delivered under low stage. Flows delivered to SRS during the dry season are beneficial to the ecology of the SRS despite the exceedance of TP concentrations for WY2022. We are trying to manage this through the S333 Working Group.

Questions, Comments, and Discussion:

Julianne was puzzled by how inflows are entering the L67A canal based on the vector models of slide four because L67A canal shown in the figure is not represented in the vector models. She suggested that additional information be presented at the following TOC meeting that demonstrates how the results are being interpreted. Donatto noted that the canals shown in

the figures of slide four are not represented in the vector models. Dan stated that the Regional Simulation Model (RSM) includes the hydrology associated with the canals in the Everglades and the graphic on slide four is focused on the overland flow vector. Julianne believes looking at the RSM model may be more appropriate to determine the direction of flow and TP concentration levels. Donatto stated that arrows within the figure demonstrate the direction of the flow entering and exiting the canals.

Donatto reiterated that the RSM model indicated that TP is still being transported from Miami canal, and L67A canal, including direct discharges from S9, to the Park. TP are also transported from the western portion to S12s. Bill also noted that the Wet Year figure demonstrates an increase in flow from the western side entering STA 5/6, which contains the highest TP concentrations and looking into the gradients of ions. Stuart Van Horn addresses Bill's comments by stating that the discussion is two-fold: (1) While the conservative chloride and tracers may follow the vector flow patterns, phosphorus is taken up by vegetation when traveling through the marsh. When reaching the southern marsh, TP in the marsh is low. S344 shows similar marsh-canal connectivity that we've seen in 3A-L67A marsh-canal interaction. It's too simplistic to directly correlate inflow boundary point to what we have seen downstream. There is a lot of complexity between the upstream inflow and downstream that needs more investigation. Edward Smith encouraged Donatto to add additional tilt meters for deeper analysis of the flow pattern. Nenad Iricanin, a principal scientist at the SFWMD stated that as water flows into and out of the marsh, ionic composition and concentrations may be altered or changed, concluding that additional investigation needs to take place.

Nenad discussed several statistical details with Donatto, who stated that the adjusted p-value has normally been used, a serial correlation analysis will be conducted moving forward prior to running the Seasonal Kendall Trend tests.

Dan Crawford stated that the local driver condition in the vicinity of the S333 demonstrates that further investigation is needed for the regional trends. Addressing the local drivers may determine that the visibility of these regional trends remains statistically significant in contributing to the exceedances occurring in the SRS. He highlighted that the regional model is not intended to examine local flow phenomena and other types of models with higher resolution capabilities should be used for examining local flow. The downside to these models is their inability to analyze multi-year data results. He highlighted that the increased flow delivery into SRS below 9.2 ft stage was a purposeful operating plan implemented as a joint effort between USACE and NPS implemented in September of 2020. This joint effort has resulted in favorable ecological conditions occurring downstream in the ENP.

Edward Smith asked Donatto to clarify what auto sample primary means regarding the sampling results presented on slide five. He also requested clarification on why grab samples weren't used for these calculations to ensure consistency with the Settlement Agreement. Donatto stated that the FWMC calculation was done using the algorithm that the SFWMD uses for its calculations. This includes using both the grab and auto samples primary where the auto sample primary data is prioritized above the grab sample data. Ed also noted that it is valuable to complete these reports in advance for further evaluation and adjustment of values because it will consider discrepancies such as higher data results from auto samplers vs. grab samples. Julianne noted some stations listed on slide five don't have auto samplers and asked if auto sampler data should be used to calculate FWMC since the results might be skewed. Donatto stated that the data would not match if the algorithm provided by the SFWMD isn't used.

Ed commented that slide six highlights the success of stations having lower FWMCs and specific STAs that delivered better water quality results. However, he asked how in spite of these successes, WY2022 is concluding with an exceedance. Donatto responded by saying that focusing the study on regional and local drivers is attempting to resolve the discrepancy between lower FWMC trends per station, better water quality from STAs, and excessive nutrient loads flowing into SRS. Special Master John Barkett thought the S333 working group was close to being able to make recommendations for long-term solutions to decrease TP concentrations. However, Special Master John Barkett noted the S333 working group is not ready to make recommendations yet and asked what conclusions the TOC members have deduced from this. Julianne responded by stating that the working group has focused on examining the local drivers with one of its members being able to provide an update on their findings, but answers regarding the reasons for the exceedances for WY2021 and WY2022 are inconclusive. What seems clearer is that regional drivers don't appear to be directly correlated with the exceedances of both WYs. Instead, further investigation of the regional drivers is being encouraged to arrive at a more conclusive answer. Donatto believes that some consensus has been reached from a multi-agency perspective regarding local drivers being the cause for the exceedances and will soon be able to provide recommendations for paths forward. However, additional factors potentially loading the system long-term from the regional drivers should be considered before solidifying conclusively the reason(s) for the exceedances.

Kenneth Hayman from FDEP Office of General Counsel asserted that the S333 working group has agreed on recommendations and they will be presented to the principals of the Consent Decree the week of September 25th. The recommendations are focused on the localized phenomenon because phase 1 of the study has been completed and the working group wants to launch a phase 2 to further inform the cause for the exceedances. The Principals of the Consent Decree will review those recommendations and present the solutions they prefer to implement at the December 5 TOC meeting. He also noted that the map of Seasonal Kendall Trends on slide five demonstrated higher FWMC on the western side of the system, indicating an issue moving through it. Special Master John Barkett asked if follow-up regarding Bill's question and comments will be conducted and who will be involved in that process. Kenny Hayman stated that these comments and questions are addressed by all of the agencies and the S333 working group. FDEP has conducted its own investigation of the exceedances and could potentially give a presentation of their findings at the upcoming TOC meeting. Ed shared that FDEP has concluded that the interactions occurring due to the distance, marsh flow, and water transport between stations may be making a 1% contribution toward the exceedances. Although 1% is a small metric, Ed expressed that FDEP is weighing out this contribution carefully and thoroughly. Drawing conclusions has proven more challenging than originally anticipated and Ed hopes to have more conclusive findings to present at the next TOC Meeting. Julianne stated that the SFWMD is also researching these details carefully and noted that the agencies will be coordinating with Donatto and the TOC to provide more conclusive findings.

Matt Axtel from USACE Chief Counsel office stated that WERP and CERP projects are not Consent Decree remedies as mentioned by Dan at previous TOC meetings. Dan emphasized that WERP and CERP projects will help reduce TP concentrations in WCA 3A but won't be considered remedies for the Consent Decree. Special Master John Barkett appreciates the

level of professionalism displayed by each agency and TOC members when providing constructive feedback of each work product but is having trouble reconciling why those conversations could not happen prior to the TOC meeting. If coordination can occur prior to the TOC meeting as suggested by Julianne, then more time can be spent explaining to the Special Master and the public the consensus reached as opposed to pointing out additional areas in need of exploration.

Julianne asked DOJ Attorney Judith Coleman, if she had any comments to add. Judith stated that she noted the Special Master's most recent comments and wanted to address that the TOC members have constraints to meet for discussions outside of the framework of a public meeting due to Florida Sunshine Laws. Kenny Hayman confirmed that there are Florida Sunshine Law constraints and provided examples. Special Master John Barkett clarified that he is referring to the technical discussions among the scientists of each agency and the S333 working group being held prior to the TOC meetings in an effort to provide more consensus at the meetings. These discussions are not subject to Florida Sunshine Law constraints. He also emphasized the agencies should state if staffing, budgeting, and competing priorities are constraints to ensure clarity regarding delays towards resolutions for the exceedances. This will aid in providing reasonable expectations to the court and the public regarding timeframes for the implementation of remedies.

Lori Miller agreed with Julianne's comment that some of the problems occurring are not at the individual structures because a hydrologic connection between S344s, S333s, and the S12s were identified with the studies conducted through the Everglades Restoration Transition Plan years prior. Lori stated that the S333 working group should be highlighted throughout TOC discussions to ensure that their work is showcased because the group is ready to make presentations and recommendations.

The TOC members collectively appreciated Donatto for a concise presentation and encouraged additional deliberation.

Associated Online Documents:

- Shark River Slough Final Water Year 2022 Annual Compliance Results, presentation

4. **Follow-up Discussion of Shark River Slough Exceedance Federal WY2022*** – TOC Representatives

   Julianne stated that the questions, comments, and discussion period of the "Shark River Slough WY2022 Water Quality Compliance Evaluation" presentation included a discussion regarding exceedances, which raised additional areas for exploration. Therefore, the TOC members unanimously agreed to defer voting on anything related to Federal WY2022 of SRS for the December 5 TOC meeting.

5. **Public Comment**

   Public comments were given by Paul Julian, Tom MacVicar, and Rhonda Roff.

6. **TOC Closing Business** – Julianne LaRock, SFWMD

   The TOC will host the next quarterly meeting on Tuesday, December 5, 2023.

   Julianne adjourned the meeting.

Agency acronym definitions:

DOI – Department of Interior
ENP – Everglades National Park
FDEP – Florida Department of Environmental Protection
LNWR – Arthur M. Marshall Loxahatchee National Wildlife Refuge
NPS – National Park Service
SFWMD – South Florida Water Management District
USACE – United States Army Corps of Engineers
USEPA – United States Environmental Protection Agency