M E M O R A N D U M

TO: **Matt Morrison, Tracey Piccone, Tom Kosier, Jose Otero, Dewey Worth**
FROM: **Gary Goforth**
DATE: **October 17, 2006**
SUBJECT: **Preliminary Sizing Analysis of the Proposed EAASR STA - Final Draft**

1.0 EXECUTIVE SUMMARY

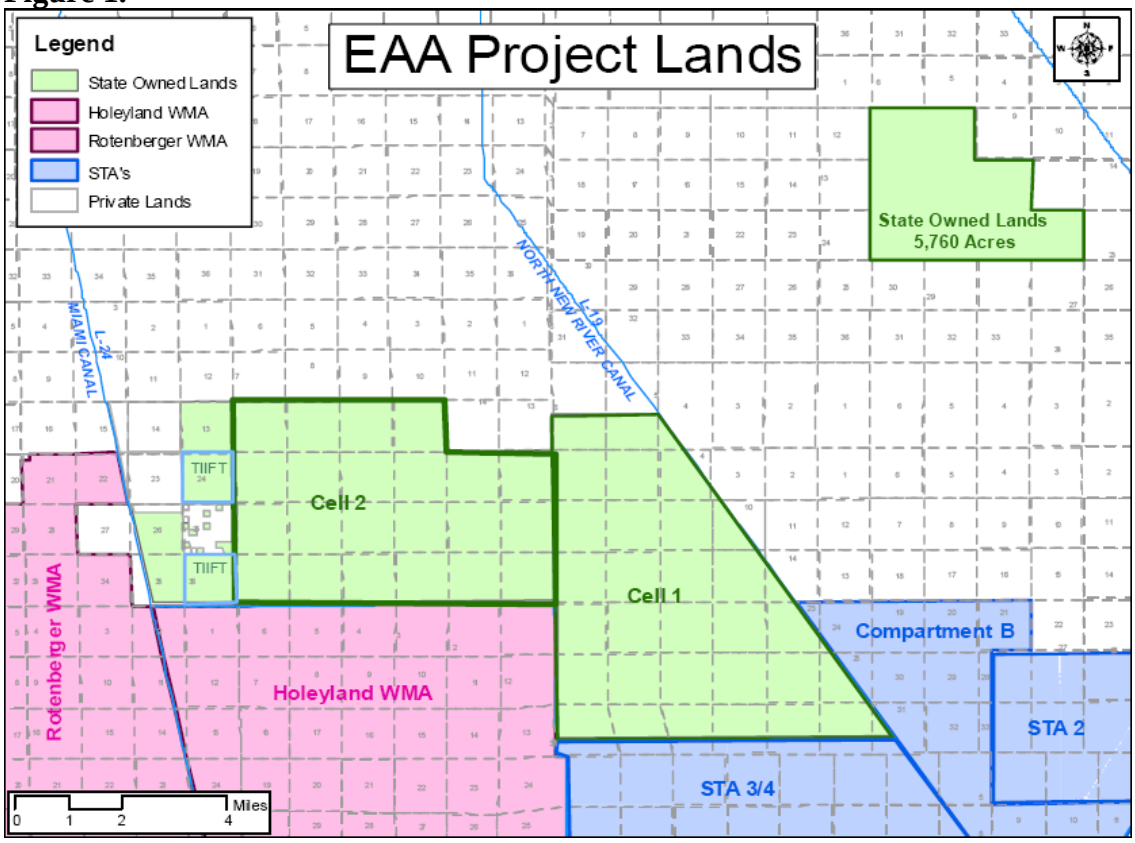
The South Florida Water Management District (SFWMD) in partnership with the U. S. Army Corps of Engineers (USACE) is developing a Project Implementation Report for the Everglades Agricultural Area Storage Reservoir (EAASR – see **Figure 1**). In order to achieve appropriate water quality in environmental deliveries to the Everglades Protection Area (EPA), the Project Development Team (PDT) is conducting a feasibility-level evaluation of a stormwater treatment area (STA). Additional background information is contained in a *Conceptual-level Sizing Analysis of the Proposed EAASR STA* (Goforth 2006). Simulated flows from the EAA5 scenario of the South Florida Water Management Model (SFWMM) were used to develop a 35-year period of daily reservoir and STA inflow for use in water quality modeling. In recognition of the increased TP concentrations in Lake Okeechobee deliveries to the EAA over the past two water years, the monthly TP concentrations in lake deliveries developed in the EAA Regional Feasibility Study were adjusted to achieve flow-weighted mean concentrations of 100, 150 and 200 ppb at the inflow to the reservoirs and STAs. In recognition of the increased TP concentrations in EAA runoff over the past two water years, the 1995-2004 period of record developed in the EAA Regional Feasibility Study was adjusted. The resulting 12-year period of record monthly TP concentrations were used to develop daily TP inflows to the reservoirs and STAs. The previous *Conceptual Analysis* identified the target long-term average flow-weighted mean TP outflow concentration for the STAs as the most sensitive parameter in sizing the proposed STA. For the purpose of this feasibility-level analysis, three targets were used: 12 ppb, 15 ppb and 19 ppb; the State's regulatory process will determine the ultimate effluent limitation. Preliminary estimates of the effective treatment area required to achieve the target outflow concentration at the various Lake delivery concentrations were established using the DMSTA model (Walker and Kadlec 2005), and are summarized in **Table 1**. An appropriate uncertainty band should be used around the estimates in **Table 1**, consistent with the present level of uncertainty in the PIR process, i.e., 20%. An evaluation of the potential phosphorus removal effects of lower calcium concentrations in Lake deliveries relative to EAA runoff indicated the possible additional need for 2,500-3,500 acres to meet the same outflow targets.

Table 1. Preliminary Estimates of EAASR STA Size (acres)

Lake Deliveries TP (ppb)	Target Outflow TP Concentration (ppb) 12	15	19
100	10,800	6,200	1,900
150	14,600	9,600	5,200
200	17,600	12,500	8,000

Note: Long-term outflow concentrations below 15 ppb have not been demonstrated for treatment wetlands constructed on prior agricultural soils. Additional uncertainty exists in flow estimates, reservoir operations and regional water management.

Figure 1.



2.0 STA SIZING STRATEGY

An initial strategy for sizing the proposed STA was developed by the EAASR PDT and refined in the *Conceptual Analysis* (Goforth 2006). The strategy below was used in developing the feasibility-level estimates of effective treatment area for the proposed STA.

1. Determine the source and initial estimate of the volume of "new water" to be treated by the proposed STA. An initial estimate of the inflow volume will be obtained using SFWMM data by comparing the "With Project" and "Without Project" conditions. These volumes will be derived from SFWMM variables demonstrating 1) reservoir inputs from the Lake Okeechobee, 2) reservoir inputs from EAA basin runoff, 3) deliveries to the environment [currently represented in the SFWMM by deliveries to STA-3/4 and bypass], and 4) consideration of phosphorus performance of the integrated project components. The ultimate difference between the "With Project" and "Without Project" conditions will be greater than the simple numerical difference between the simulated net flows, in that redistribution of flows will likely be necessary in order to achieve the appropriate phosphorus water quality levels. Depending on the inflow source, the phosphorus concentration will vary, and to the

extent that the "With Project" and "Without Project" simulations result in different volumes and sources, the associated phosphorus loads to the reservoirs and STAs will differ. An iterative process of hydrologic and water quality modeling will likely be required to finalize the "With Project" conditions and determine the ultimate inflow volume and associated phosphorus load to be treated in the new STA. During this feasibility-level analysis, the model run EAA5 was used to initially estimate flows for the "With Project" condition. Revisions to EAA5 are anticipated that will incorporate the preliminary size of the new STA. Operational modifications will be made to meet the long-term inflow targets for the STAs, as well as all other assumptions, constraints, and operational intent as part of the Next Added Increment (NAI) simulation. Flows from this new NAI will be checked with DMSTA to ensure the treatment capacities of STA 2, Compartment B, and STA-3/4 are not exceeded, and to finalize the size of the new STA. The "Without Project" simulation is not yet complete, and will include the features associated with Alternative 1 of the EAA Regional Feasibility Study (including Compartment B), the Tentatively Selected Plan for the Lake Okeechobee Regulations Schedule Study, and the Combined Structural & Operations Plan for delivery of water to the Everglades national Park. In the interim, the 2050B3EAA simulation results are placeholders for the "Without Project" condition. The estimated size of the STA will need to be updated later when final simulations are available.

2. Forecast the phosphorus concentration of Lake Okeechobee releases and basin runoff delivered to the reservoir and STA-3/4 under the "With Project" and "Without Project" conditions. These forecasts will be based on recent studies.

3. Estimate the phosphorus settling rate and other treatment characteristics of the EAASR, STA-3/4 and the proposed STA based on recent studies.

4. Estimate the anticipated volume and phosphorus load of water delivered to the proposed STA after consideration of STA-3/4 treatment capacity. The volume of water re-directed to the new STA will vary depending upon the flows and treatment capacity of STA-3/4, as that treatment area must also achieve the appropriate water quality for deliveries to the EPA.

5. Estimate the effective treatment area required for STA-3/4 under the "Without Project" condition and the combined treatment area for the "With Project" condition to achieve the target outflow concentrations. The difference between the "With Project" area and the "Without Project" area would be the initial estimate of the incremental treatment area requirement associated with the EAASR.

6. Conduct a sensitivity analysis to determine the influence of critical design parameters on the estimated effective treatment area of the proposed STA. An appropriate range of values will be established based on recent studies, and where recent data are not available, upon best professional judgment.

3.0 CRITICAL ASSUMPTIONS

Target Outflow TP Concentration. The previous *Conceptual Analysis* identified the target long-term average flow-weighted mean TP outflow concentration for the STAs as the most sensitive parameter in sizing the proposed STA (Goforth 2006). Florida has adopted a water quality standard for Total Phosphorus (TP) for the Everglades, with a numeric criterion of a long-term geometric mean of 10 ppb (62-302.540, F.A.C.). The water quality treatment goal for the new STA and STA-3/4 is to achieve compliance with the new TP water quality standard. The Florida Department of Environmental Protection (FDEP) has not yet established a Water-Quality Based Effluent Limitation (62.650 F.A.C.) for discharges into the Everglades. FDEP will establish the effluent limitation in accordance with the State process, however, the results will not be available in time for this analysis. To assist in estimating a range of STA sizes for this feasibility-level analysis, a range of long-term outflow flow-weighted mean TP concentration targets was used. A lower value of 12 ppb was selected[1]. A second target of 15 ppb was identified as the lowest flow-weighted mean concentration observed in the calibration data set for a large-scale treatment cell constructed on prior agricultural land. A third target of 19 ppb will be used as an upper bound on the sensitivity analysis. The target concentrations used in this analysis are long-term flow-weighted means. The use of target outflow concentrations in this analysis does not in any way pre-ordain what the ultimate discharge limit will be.

Lake Okeechobee Concentration. The previous *Conceptual Analysis* identified the TP concentration in Lake Okeechobee deliveries to the reservoirs and STAs as the second most sensitive parameter in sizing the proposed STA (Goforth 2006). As a result of the compounding negative effects of the 2005-2006 hurricanes and the positive benefits of the Lake Okeechobee Protection Plan and associated CERP projects implementation, it is difficult to predict with certainty future Lake TP concentrations. In light of the uncertainty of the long-term TP concentrations for Lake Okeechobee deliveries to the reservoirs and STAs, a range of 100 ppb, 150 ppb and 200 ppb was used in the analysis.

Other assumptions. A summary of the critical assumptions incorporated into this analysis is attached as **Appendix 1**. Additional modeling assumptions are discussed below.

[1] An annual flow-weighted mean outflow concentration of 11 ppb was observed for STA-6 during WY2004, and 13 ppb was observed for STA-3/4 during WY2005 (Pietro et al. 2006).

4.0 ANALYTICAL APPROACH FOR ESTIMATING EFFECTIVE TREATMENT AREA

The primary method for estimating the total effective treatment area required to achieve the target outflow concentrations was Version 2 of DMSTA (Walker and Kadlec 2005). To assist in the iterative solution of the treatment area size, a steady-state design model (SSDM) was used; details of the SSDM are provided in the initial *Conceptual Analysis* (Goforth 2006). Using the SSDM with K values derived directly from STA performance yields overly optimistic performance forecasts relative to DMSTA, a reflection of DMSTA's ability to consider pulsed flows and atmospheric deposition, which become more important as the target outflow concentrations decrease. For the purpose of this analysis, the value of K for the SSDM was adjusted, i.e., decreased, to match the STA performance projection from similar DMSTA scenarios.

5.0 INFLOW VOLUMES AND LOADS

An estimate of the reservoir and STA inflows and phosphorus loads were developed by utilizing the following assumptions.

1. Daily flows from the EAA5 scenario of the South Florida Water Management Model (SFWMM) were used to develop daily time series for the DMSTA simulations. **Appendix 2** contains the flow terms and distributions for EAA5. Daily rainfall, evapotranspiration, and reservoir depths from the EAA5 scenario were also used in the DMSTA simulation. A summary of the SFWMM EAA5 scenario is presented in **Table 2**. Depending on the inflow source, the phosphorus concentration will vary, and to the extent that different SFWMM simulations result in different volumes and sources, the associated phosphorus loads to the reservoirs and STAs will differ. An iterative process of hydrologic and water quality modeling will likely be required to finalize the "With Project" conditions and determine the ultimate inflow volume and associated phosphorus load to be treated in the new STA.
2. Consistent with the EAA Regional Feasibility Study (ADA/Burns and McDonnell 2005), the only STAs that will be used to capture and treat Lake Okeechobee regulatory releases are STA-3/4 and the new STA; no other STA will receive regulatory releases and water supply deliveries intended for downstream receiving waters.
3. All runoff from extreme meteorological events simulated in the 1995-2000 period of simulation will be treated, as opposed to being diverted into the WCAs without treatment.
4. EAA irrigation water releases do not need to be treated to Everglades water quality standards prior to discharge back to the EAA.
5. The new STA, working in conjunction with STA-3/4, will treat the volumes of water anticipated to be discharged into the Everglades associated with the EAASR. In other words, the combined areas of STA-3/4 and the new STA are to be used to meet the treatment goals of the project.

6. Compartment B will be used primarily to capture and treat water from the S-6 and S-5A basins, and will not be used to capture and treat any Lake Okeechobee releases, or EAASR releases conveyed through the North New River Canal.
7. In recognition of the increased TP concentrations in EAA runoff over the past two water years, the 1995-2004 period of record used by ADA/B&M in the EAA RFS was adjusted to include WY2005 and 2006. The resulting 2-year period of record monthly TP concentrations were used to develop daily time series of TP inflows to the reservoirs and STAs. **Tables 3 and 4** present a summary of the monthly TP concentrations. Additional details are provided in **Appendix 3**.
8. Phosphorus concentrations developed during the EAA Regional Feasibility Study can be used for Ch. 298 District runoff and the C-139 Basin inflows to the EAASR.
9. To reflect the seasonal variations exhibited by Lake Okeechobee deliveries, monthly concentrations were developed. These monthly concentrations were adjusted for each Lake TP level (100 ppb, 150 ppb, and 200 ppb) and further adjusted for each reservoir and STA inflow time series to ensure that the desired flow-weighted mean inflow TP concentrations were achieved at the inflow points. Resulting monthly concentrations are presented in **Table 5**.
10. A May 1 – April 30 Water Year was used in these analyses.
11. A portion of the water supply deliveries for downstream areas will be diverted untreated around STA-3/4 and the new STA. The SFWMM simulation estimated the volume diverted as approximately 33,465 AF/yr. The majority of this (20,553 AF/yr) was diverted to the Seminole Big Cypress Reservation through the L-4 Borrow Canal and L-3 Extension, and therefore has minimal exposure to the Everglades marshes.

In addition to the above assumptions, discharges from STA-3/4 must continue to meet the appropriate water quality target under the "With Project" conditions. Because of the dependency of the new STA inflow volumes and phosphorus loads to the phosphorus reduction performance of the reservoirs and STA-3/4, the new STA inflow volumes and phosphorus loads will vary under the different scenarios.

In response to specific questions regarding the depth and outflow time series in the SFWMM, District staff provided the following response (J. Otero, personal communication October 10, 2006).

- The depth time series provides an appropriate range of depths in the reservoir, based on model assumptions of footprint and volume, but is not intended as a true estimate of reservoir depth. Reservoir depth time series are not recommended for calculations outside the 2x2. However, if DMSTA requires this information, the depth time series can be used as a reference for feasibility-level work.
- The releases from the reservoir are based on environmental and agricultural demand, not on a stage-discharge relationship
- Regarding seepage assumptions for the EAA reservoir, ground water is simulated based on head difference between cells in the reservoir and adjacent cells outside the reservoir. There is no explicit modeling of seepage to adjacent canals or associated reservoir seepage management features.

Table 2. Initial Comparison of "Without Project" and "With Project" Simulations
Values are 35-year average annual flows in acre-feet, using May 1 – April 30 Water Year.

Destination	Source		Without Project 2050B3EAA	With Project EAA5	Difference From 2050B3EAA
Reservoir A-1	Lake Okeechobee	Reg Rel - NNRC	0	47,142	47,142
	Reservoir A-2		0	189,697	189,697
	Lake Okeechobee	Reg Rel - MC	0	345,644	345,644
	Total to A-1		0	582,482	582,482
					0
Reservoir A-2	EAA Runoff	NNRC	0	150,744	150,744
	Reservoir A-1		0	102,366	102,366
	EAA Runoff	Miami Canal	0	122,402	122,402
	Total to A-2		0	375,511	375,511
					0
	Total to EAA SR		0	665,931	665,931
					0
STA-3/4 & New STA	EAA Runoff	NNRC	251,416	95,428	-155,988
	EAA Runoff	Miami Canal	225,262	95,212	-130,050
	C-139 RO	Miami Canal	13,280	13,424	144
	SSDD		3,944	4,017	73
	SFCD		11,544	11,681	136
	Lake Okeechobee	Reg Rel - NNRC	61,849	18,558	-43,291
	Lake Okeechobee	Reg Rel - MC	72,918	0	-72,918
	Lake Okeechobee	WS for STA-3/4	0	0	0
	Lake Okeechobee	WS - NNRC	41,689	8,951	-32,738
	Lake Okeechobee	WS - MC	84,241	53,769	-30,473
	Lake Okee water supply	Diverted	-58,372	-33,465	24,907
	Reservoir A-1	Cell 2	0	469,179	469,179
Total to STA-3/4 and the New STA			707,772	736,753	28,981

Note: 1. The initial difference between simulation runs does not take into account phosphorus loads associated with the various source waters and phosphorus removal performance of the project components. Redistribution of flows from the above table will be necessary to achieve the water quality requirements of the project. The final difference between simulations will be greater than this after consideration of phosphorus performance.

Table 3. Monthly TP Concentrations Estimated for North New River Canal Runoff

Month	WY1995-2004 TP Conc	WY1995-2006 TP Conc
	ppb	ppb
Jan	39	40
Feb	59	76
Mar	61	82
Apr	83	94
May	96	100
Jun	81	87
Jul	71	76
Aug	61	67
Sep	67	80
Oct	66	77
Nov	120	118
Dec	93	99
Average	75	82

Table 4. Monthly TP Concentrations Estimated for Miami Canal Runoff

Month	WY1995-2004 TP Conc ppb	WY1995-2006 TP Conc ppb
Jan	40	40
Feb	41	58
Mar	47	62
Apr	67	67
May	92	108
Jun	67	93
Jul	96	96
Aug	90	87
Sep	90	86
Oct	95	97
Nov	132	130
Dec	60	60
Average	**82**	**88**

Table 5A. Summary of Monthly Lake Okeechobee TP Concentrations For STA-3/4 Inflows

Month	Lake to STA via the NNRC			Lake to STA via Miami Canal		
	100	150	200	100	150	200
1	109	163	217	85	128	171
2	110	165	220	68	103	137
3	78	117	156	68	102	136
4	122	183	245	100	151	201
5	170	255	339	143	214	285
6	112	167	223	132	198	264
7	107	160	214	126	189	252
8	61	92	122	154	231	307
9	121	181	242	153	230	307
10	115	172	229	185	278	370
11	105	158	211	102	152	203
12	98	147	196	78	117	155

Table 5B. Summary of Monthly Lake Okeechobee TP Concentrations For A-1 Inflows

Month	Lake to A-1 via the NNRC			Lake to A-1 via the Miami Canal		
	100	150	200	100	150	200
1	97	145	194	74	111	149
2	98	147	196	59	89	119
3	69	104	139	59	88	118
4	109	164	218	87	131	174
5	151	227	303	124	186	248
6	99	149	199	115	172	229
7	95	143	191	110	165	219
8	55	82	109	134	200	267
9	108	161	215	133	200	267
10	102	153	204	161	241	322
11	94	141	188	88	133	177
12	87	131	174	68	101	135

DMSTA provides good flexibility in using time series of flows and depths from other hydrologic models in order to match the fundamental water balance terms. Seepage coefficients for the reservoirs were adjusted so that DMSTA outflows matched the SFWMM simulated outflow time series. Various values for the DMSTA reservoir outflow coefficients

were evaluated, however, there was considerable discrepancies with the SFWMM simulated outflows. Examination of the flow vs. depth relationship from the EAA5 scenario indicates a very complex relationship between depth and discharge, as discussed above (see **Appendix 4**). Hence, both the depth and outflow time series from SFWMM were entered as constraints for the DMSTA simulations. As expected, good agreement between the SFWMM and DMSTA results were obtained.

Each reservoir was treated separately as a single cell in DMSTA, and the TP removal is be characterized by the standard DMSTA calibration data set for reservoirs (treated as 1 continuously stirred tank reactor). In addition, DMSTA allows only downstream flow among reservoirs and STAs, and therefore doesn't allow back and forth flow between the reservoirs as simulated by SFWMM. To overcome this, a pair of "dummy" reservoirs was set up upstream of the A-1 and A-2 reservoirs in order to generate an approximation of the inter-reservoir transfer of water at the appropriate TP concentration. For this analysis, the flows to STA-3/4 and the new STA were simulated to be distributed uniformly based on area, i.e., equal average hydraulic loading rate. The new STA was assumed to consist of three parallel flow-ways of equal size, and that each flow-way would consist of an emergent treatment cell (40% of the flow-way area) followed by an SAV cell (60% of the flow-way area). The analyses assume the new STA would be located along the southern boundary of the A-2 footprint – a width of 6 miles. The standard calibration data sets for the emergent vegetation and the SAV treatment performance were used.

An iterative approach was required to establish the new STA size that achieved the desired outflow TP target:

1. estimate the size using the steady-state design model;
2. calculate the inflow fraction and surface area of the new STA cells, and
3. run DMSTA.

If the long-term flow-weighted mean outflow TP did not meet the target, a new estimate of the area was calculated using the SSDM with a recalibrated K value, and steps 2 and 3 were repeated. Multiple iterations were required due to the sensitivity of the performance to the effective treatment area. Fine-tuning was required to obtain an estimate of the new effective treatment area to achieve the target to within 0.1 ppb; this fine-tuning was accomplished after multiple DMSTA runs by using the steady-state design model with adjusted K value calibrated from the associated DMSTA runs.

In addition to the sensitivity analysis of STA outflow target and lake concentrations, two additional "what-if" scenarios were evaluated. Recent evidence that the relatively low calcium concentration in Lake deliveries is not as propitious to phosphorus removal as the higher calcium concentration in EAA runoff (Dierberg et al. 2006). That study indicated a 33% reduction in the phosphorus removal performance in SAV mesocosms with Lake water compared to the performance using EAA runoff as the source water. To evaluate this effect, the effective settling rate (K) in the DMSTA simulations was reduced in proportion to the ratio of lake water to EAA runoff, resulting in a K of 43.7 m/yr for the SAV cells compared to the 52.5 m/yr from the DMSTA calibration data sets.

Similarly, the estimated size of the new STA could potentially be reduced if the phosphorus removal within the reservoirs is improved. Measures to improve this performance in the EAA reservoirs are not fully developed at this time, but evaluation of the hydraulics and vegetation characteristics of large Florida lakes suggest improved performance may result from avoiding dryout in the reservoir and relatively long hydraulic detention times (Wetland Solutions, Inc. 2004). Those goals will likely conflict with other water delivery goals for the reservoirs, and need further evaluation for their feasibility prior to firm recommendations. These hydraulic conditions could possibly support a viable SAV community, likely hydrilla, with average effective settling rates higher than the 5 m/yr used in the present analysis (Knight et al.). The present analysis used a phosphorus removal settling rate of 5 m/yr for the A-1 and A-2 reservoirs, and yielded phosphorus load reduction ranging from 15% for A-1 to 23% for A-2. This settling rate was the median of the reservoir calibration data sets (Walker and Kadlec 2005). To examine the potential effect a higher reservoir settling rate might have on the estimated size of the new STA, DMSTA was run with a settling rate of 9 m/yr for the reservoirs, equal to the 90th percentile estimate of the DMSTA calibration data sets.

6.0 PRELIMINARY ESTIMATES OF EFFECTIVE TREATMENT AREA

Using DMSTA to forecast phosphorus removal performance of the A-1 and A-2 reservoirs, as well as STA-3/4 and the proposed STA, a conceptual-level range of 0 – 17,600 acres of effective treatment area was estimated for the proposed STA. The range reflects the likely range of phosphorus removal performance of the new STA after start-up and stabilization of the treatment cells are complete. A summary of the results are presented in **Table 6**, and the related DMSTA input/output sheets are included as **Appendix 5**. Consistent with the present level of uncertainty in the PIR process, it is recommended to use a ±20% around the estimates in **Table 6**[2]. Estimating the appropriate size to achieve the target outflow concentrations requires multiple iterations using DMSTA. The values presented in **Table 6** reflect multiple DMSTA analyses, and additional fine-tuning to achieve the target outflow to the 0.1 ppb. The additional fine tuning utilized the steady-state design model (SSDM) and an adjusted K calibrated against the DMSTA run. To examine the potential error introduced by this fine-tuning approximation using the SSDM, an additional DMSTA simulation was run on a scenario with a relatively large difference between the DMSTA value and the adjusted value: 150 ppb Lake with a 12 ppb target outflow concentration. The adjusted acreage using the SSDM resulted in an area approximation of 14,639 acres. Using 14,640 acres, a DMSTA simulation resulted in a long-term outflow concentration of 11.97 ppb, within a 0.1 ppb tolerance.

Figure 2 summarizes the relationship between the incremental effective treatment area as a function of the target STA outflow concentrations and the assumed concentration of Lake

[2] This is slightly higher than the 15-18% difference between the 10% and 90% confidence level settling rate estimates for the DMSTA calibration data sets.

Table 6. Preliminary Results of STA Sizing Analysis.

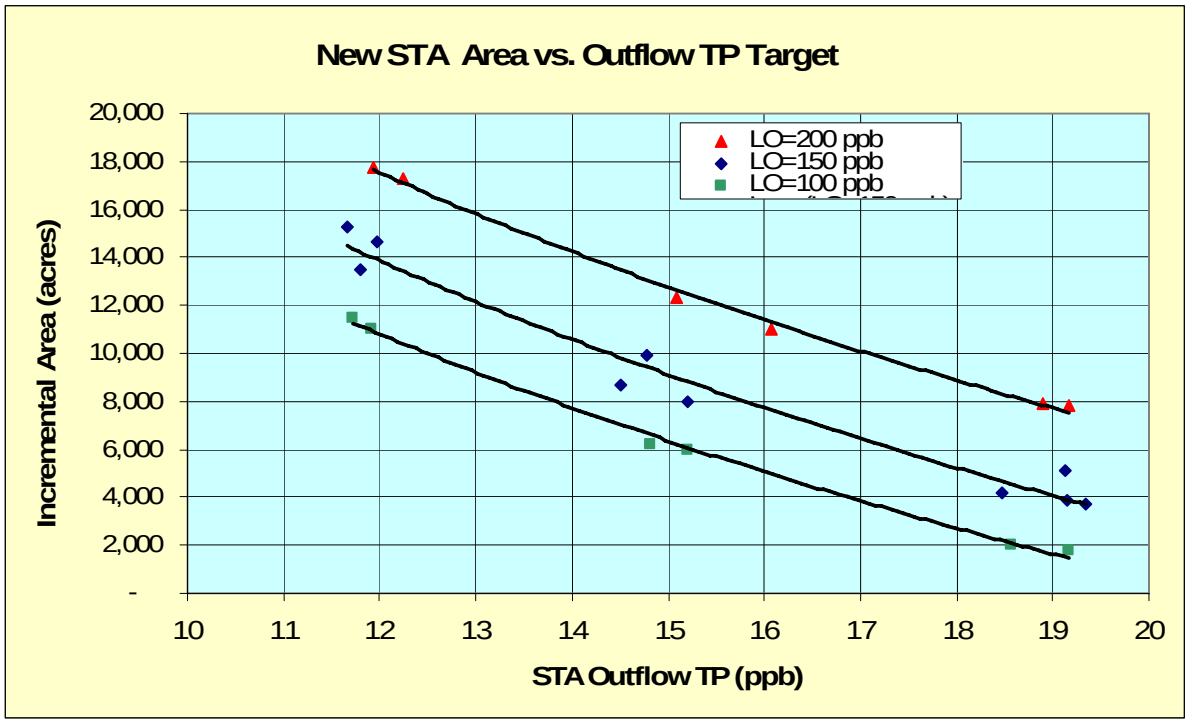
Lake TP Concentration ppb	Parameter	Unit	Target STA Outflow Concentration (ppb) 12	15	19
100	TP	ppb	11.9	15.2	19.2
	Area	acres	11,000	6,000	1,800
	TP adj	ppb	12.0	15.0	19.0
	Area adj	acres	10,835	6,248	1,938
	Total STA Outflow	AF/yr	715,044	715,044	715,044
	Total STA Load	kg/yr	10,584	13,230	16,758
	A-1 Reservoir Outflow	ppb	77	76.6	76.6
	A-1 Reservoir Load Red.	percent	15	15	15
	A-2 Reservoir Outflow	ppb	67	67.3	67.3
	A-2 Reservoir Load Red.	percent	22	22	22
	Untreated water supply diversion	AF/yr	33,465	33,465	33,465
	Water supply diversion load	kg/yr	4,128	4,128	4,128
150	TP	ppb	11.7	14.8	19.1
	Area	acres	15,300	9,900	5,130
	TP adj	ppb	12.0	15.0	19.0
	Area adj	acres	14,639	9,611	5,206
	Total STA Outflow	AF/yr	715,044	715,044	715,044
	Total STA Load	kg/yr	10,584	13,230	16,758
	A-1 Reservoir Outflow	ppb	106	106	106
	A-1 Reservoir Load Red.	percent	16	16	16
	A-2 Reservoir Outflow	ppb	71.6	71.6	71.6
	A-2 Reservoir Load Red.	percent	22	22	22
	Untreated water supply diversion	AF/yr	33,465	33,465	33,465
	Water supply diversion load	kg/yr	6,192	6,192	6,192
200	TP	ppb	11.9	15.1	19.2
	Area	acres	17,750	12,350	7,800
	TP adj	ppb	12.0	15.0	19.0
	Area adj	acres	17,593	12,456	7,958
	Total STA Outflow	AF/yr	715,044	715,044	715,044
	Total STA Load	kg/yr	10,584	13,230	16,758
	A-1 Reservoir Outflow	ppb	134	134	134
	A-1 Reservoir Load Red.	percent	16	16	16
	A-2 Reservoir Outflow	ppb	75.8	75.8	75.8
	A-2 Reservoir Load Red.	percent	23	23	23
	Untreated water supply diversion	AF/yr	33,465	33,465	33,465
	Water supply diversion load	kg/yr	8,256	8,256	8,256

Note: Long-term outflow concentrations below 15 ppb have not been demonstrated for treatment wetlands constructed on prior agricultural soils. Additional uncertainties in this analysis exist in flow estimates, reservoir operations and regional water management.

Okeechobee deliveries. **Figure 2** was developed from DMSTA results, and is not intended as a forecasting tool, merely as a graphical representation of the interplay between the most sensitive parameters influencing the size of the proposed STA.

DMSTA generates various warning and error messages based on the simulation results compared to the calibration data sets. For all simulations with a long-term average STA outflow concentration less than 15 ppb generated warning messages indicating the forecast is lower than the calibration data sets. Long-term outflow concentrations below 15 ppb have not been demonstrated for treatment wetlands constructed on prior agricultural soils. In virtually every simulation, the mean depth for SAV treatment cells was below the calibration data sets, although the absolute differences were less than 20% from the minimum. Another common warning was that the flow/width was below the range in the calibration data sets. After the final footprint of the new STA is identified, a readjustment of the flows can be examined for optimal phosphorus removal performance.

Figure 2. Summary of New Area as a Function of Target and Lake Concentrations



7.0 "WHAT-IF" ANALYSES

Lower Calcium concentrations in Lake deliveries than in EAA runoff. To evaluate the potential increase in treatment area that may be required to compensate for deceased removal performance of lower Calcium source waters, the effective settling rate (K) in the DMSTA simulations for the STAs was reduced in proportion to the ratio of lake water to EAA runoff, resulting in a K of 43.7 m/yr for the SAV cells compared to the 52.5 m/yr from the DMSTA calibration data sets. **Table 7** presents the results of this analysis, which indicated the possible additional need for 2,500-3,500 acres to meet the same outflow targets if the reduced performance observed in the mesocosm study holds true in the large-scale STAs.

Higher reservoir settling rate. To examine the potential effect a higher reservoir settling rate might have on the estimated size of the new STA, DMSTA was run with a settling rate of 9 m/yr for the reservoirs, equal to the 90th percentile estimate of the DMSTA calibration data sets. For the 12 ppb target outflow concentration and the 150 ppb Lake Okeechobee concentration scenario, the reservoirs' removal increased to 21% and 31% for A-1 and A-2, respectively, and the TP load to STA-3/4 decreased by approximately 4.3 metric tons/yr. As a result of this decreased loading, which was equal to about 4.2% reduction in loads to the STAs, the estimated effective treatment area of the new STA decreased by approximately 770 acres, or about 5%. While additional DMSTA simulations are needed for accurate area projections, using the trends exhibited in **Tables 6 and 7** we can expect smaller (i.e., <770 acre reduction in size) decreases in area requirements for the 15 ppb and 19 ppb scenarios, and for the 100 ppb Lake scenarios; we can also expect slightly greater decreases (i.e., >770 acre reduction in size) for the 200 ppb Lake scenarios.

Table 7. Sensitivity Analysis of the Potential Effects of Calcium (Lake Okeechobee concentration of 150 ppb)

Effective Settling Rate for SAV	Parameter	Unit	Target STA Outflow Concentration (ppb) 12	15	19
52.5 m/yr	TP	ppb	12.0	15.0	19.0
	Area	acres	14,639	9,611	5,206
43.7 m/yr	TP	ppb	12.0	15.0	19.0
	Area	acres	18,100	12,620	7,726
	Increase in area	acres	3,460	3,009	2,520
	Increase in area	%	24%	31%	48%
	Total STA Outflow	AF/yr	710,537	713,613	716,130
	Total STA Load	kg/yr	10,542	13,197	16,780

8.0 DISCUSSION

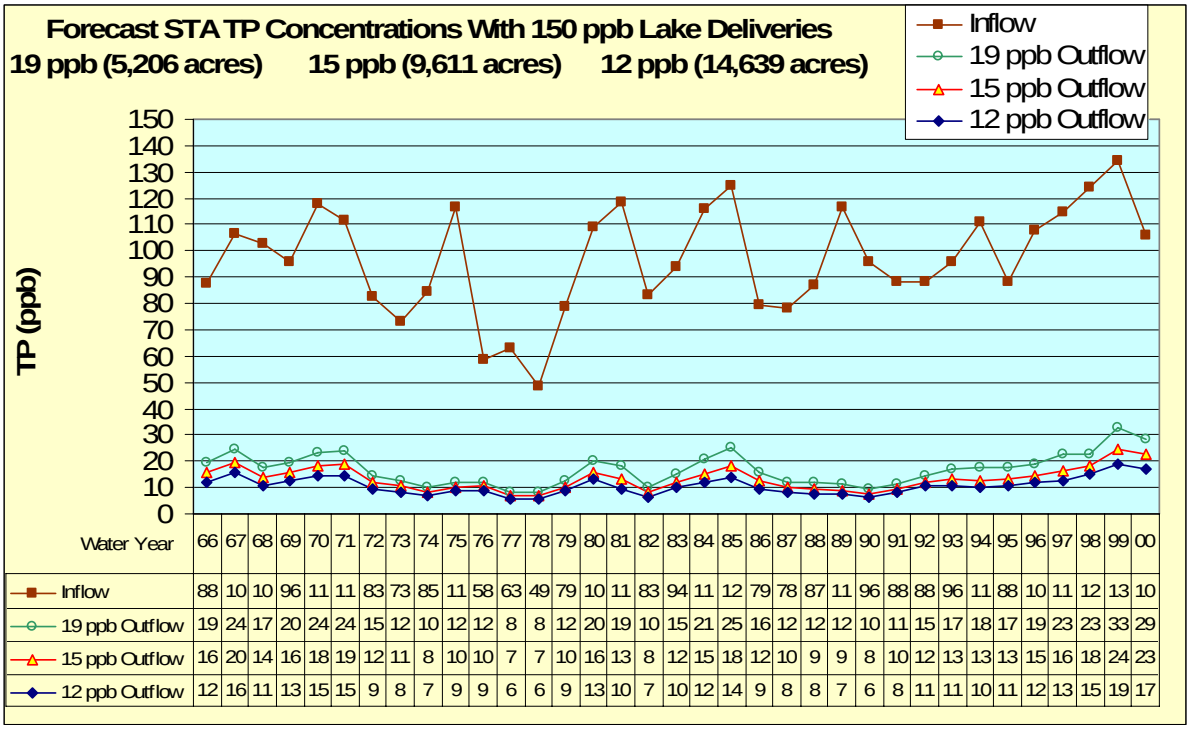
TP performance measure: TP concentration. Florida has adopted a water quality standard for Total Phosphorus (TP) for the Everglades, with a numeric criterion of a long-term geometric mean of 10 ppb (62-302.540, F.A.C.). The water quality treatment goal for the new STA and STA-3/4 is to achieve compliance with the new TP water quality standard[3]. Using the set of assumptions enumerated in Sections 2 and 3 above, a range of 10,800 – 17,600 acres of additional treatment area would be required to achieve a long-term target of 12 ppb, dependant on the TP concentration of Lake Okeechobee deliveries and other factors. It is possible that these estimates may need to be increased by 2,500-3,500 acres to compensate for reduced treatment performance associated with the Calcium concentrations in Lake water. While long-term outflow concentrations below 15 ppb have not been demonstrated for treatment wetlands constructed on prior agricultural soils, an annual flow-weighted mean outflow concentration of 11 ppb was observed during WY2004 for STA-6[4], and 13 ppb was observed for STA-3/4 during WY2005 (Pietro et al. 2006). The target concentrations used in this analysis are long-term flow-weighted means over the 35 water years of the simulation period. Simulated outflow concentrations varied considerably on an annual basis, as depicted in **Figure 3**, which depicts the results of the simulations for 150 ppb concentration for Lake Okeechobee deliveries. For the 12 ppb scenario, annual outflow concentrations varied from a minimum of 5.6 ppb to a maximum of 18.9 ppb, a range of -53% to +56% around the long-term flow-weighted mean. A range of 6,200 - 12,500 acres of additional treatment area was estimated for a long-term target of 15 ppb, dependant on the TP concentration of Lake Okeechobee deliveries and other factors. A range of 1,900 – 8,000 acres of additional treatment area was estimated for a long-term target of 19 ppb, dependant on the TP concentration of Lake Okeechobee deliveries and other factors.

TP performance measure – TP load. Performance Measure GE-5 (TP Loads) cites the methods and results of the 2003 Long-Term Plan, which forecast TP loads from STA-3/4 for the period 2050 of 10.2-15.3 metric tons/year, corresponding to long-term flow-weighted mean concentrations of 14-21 ppb and an annual average flow of 590,694 AF/yr. By comparison, this analysis estimated TP loads from the STAs ranging from 10.6 metric tons/yr to 16.8 metric tons per year, corresponding to long-term flow-weighted mean concentrations of 12-19 ppb. The present analyses are based on annual average outflows from the STAs of approximately 715,000 AF/yr, representing a 21% increase in the volume of water treated compared to the 2003 Long-Term Plan estimates.

[3] The Florida Department of Environmental Protection is responsible for establishing effluent limitations for discharges into the Everglades Protection Area to ensure compliance with water quality standards. FDEP has not yet established a Water-Quality Based Effluent Limitation (62.650 F.A.C.) for discharges into the Everglades. The use of target outflow concentrations in this analysis does not in any way pre-ordain what the ultimate discharge limit will be.

[4] Approximately 28% (245 acres) of STA-6 is prior-existing wetlands, and not former agricultural lands.

Figure 3.



Diversion of untreated water supply. For this analysis, untreated water supply diversions to multiple downstream waters were taken directly from the SFWMM output for the EAA5 scenario, and averaged 32,755 AF/yr. The majority of this (20,553 AF/yr) was directed to the Seminole Big Cypress reservation. The balance was sent to the Lower East Coast to meet water supply demands. It may be possible to make low flow water supply deliveries at times when water levels in the Water Conservation Areas (WCAs) are below certain minimum elevations such that the water remains within the canals and does not overflow into the adjacent marsh.

Determination of Incremental Treatment Area Requirements Associated with the EAA Storage Reservoirs. Section 2 described a Sizing Strategy for the proposed STA associated with the EAASR. A preliminary estimate of the flows and phosphorus levels associated with the "With Project" and "Without Project" conditions is presented in **Table 8**. Unfortunately, insufficient certainty exists at this time to finalize the recommendation for the size of the proposed STA. Assuming the final "With Project" flow volumes and sources do not change significantly, the most sensitive parameters influencing the size of the STA remain the target outflow TP concentration and the Lake Okeechobee delivery TP concentration. Another critical sizing parameter is the possible reduction in STA performance compared to the DMSTA forecast projections resulting from lower Calcium concentrations than were present in the SAV calibration data sets. Once the critical STA sizing parameters (STA target TP, Lake delivery TP and Calcium effect on STA performance) are established, and final regional SFWMM scenarios for the "With Project" and "Without Project" scenarios are

completed, an additional analysis will be required to determine the incremental treatment area requirement associated with the EAASR.

Table 8. Comparison of Annual Flows and Phosphorus Levels

Lake Deliveries	Plan	Parameter	Unit	Average Annual Inflow To STA-3/4 and the New STA					Difference
				From Lake		Basin Runoff			
				Direct	Indirect (Through A-1)	Direct	Indirect (Through A-1)	Total	
100 ppb	Without Project EAA2050B3	Flow	AF/yr	202,325	0	505,447	0	707,772	
		TP Load	kg/yr	24,957	0	54,781	0	79,738	
		TP Conc	ppb	100		88		91	
	With Project EAA5	Flow	AF/yr	47,813	316,382	219,761	152,797	736,753	28,981
		TP Load	kg/yr	5,898	28,761	25,141	13,890	73,690	-6,048
		TP Conc	ppb	100	74	93	74	81	-10
150 ppb	Without Project EAA2050B3	Flow	AF/yr	202,325	0	505,447	0	707,772	
		TP Load	kg/yr	37,435	0	54,781	0	92,216	
		TP Conc	ppb	150		88		106	
	With Project EAA5	Flow	AF/yr	47,813	316,382	219,761	152,797	736,753	28,981
		TP Load	kg/yr	8,847	40,099	25,141	19,366	93,453	1,237
		TP Conc	ppb	150	103	93	103	103	-3
200 ppb	Without Project EAA2050B3	Flow	AF/yr	202,325	0	505,447	0	707,772	
		TP Load	kg/yr	49,914	0	54,781	0	104,694	
		TP Conc	ppb	200		88		120	
	With Project EAA5	Flow	AF/yr	47,813	316,382	219,761	152,797	736,753	28,981
		TP Load	kg/yr	11,795	51,320	25,141	24,785	113,042	8,348
		TP Conc	ppb	200	132	93	132	124	4

The following is a ***hypothetical scenario*** that illustrates the method described in Section 2 to determine an initial estimate of the incremental treatment area requirements associated with the EAASR. For the purpose of this ***hypothetical scenario,*** an STA outflow target is established at 15 ppb; FDEP will establish the final effluent limitation in accordance with 62-650, F.A.C.

STA Sizing Strategy (from Section 2)

1. The 2050B3EAA and the EAA5 simulations describe the volumes and sources of water to the reservoirs and STAs for the "Without Project" and "With Project" conditions, respectively.
2. The best professional judgment of Lake Okeechobee managers suggests that the long-term TP concentration in Lake deliveries is forecast to be 150 ppb. The phosphorus concentrations in basin runoff are equal to the values used in this analysis.

3. The effect of Calcium in Lake deliveries is forecast to reduce STA performance in proportion to the ratio of lake water to EAA runoff. Phosphorus removal within the reservoirs can be forecast using the default characteristics of DMSTA.
4. The flows and phosphorus levels for the "With Project" and "Without Project" conditions are described in **Table 8.**
5. For the "Without Project" condition, DMSTA simulations indicate that an additional 6,000 acres is needed to achieve the target outflow concentration. For the "With Project" condition, DMSTA simulations indicate that 12,620 acres is needed to achieve the target outflow concentration (as shown in **Table 7**). The difference between the 12,620 acres for the "With Project" condition and the 6,000 acres for the "Without Project" condition, or 6,620 acres, would be an initial estimate of the incremental treatment area requirement associated with the EAASR.

Uncertainty in Flows. Although the uncertainty in the flow time series in SFWMM used as input to DMSTA is not readily nor easily quantifiable, flow estimates will be revised in the near term. The model simulations and iterations between SFWMM and DMSTA, being considered by the project team, along with SFWMM simulations to meet programmatic requirements, will produce multiple revisions of flow estimates, as described in **Table 9** below.

Next Steps. Once the critical STA sizing parameters (STA target TP, Lake delivery TP and Calcium effect on STA performance) are established, the results and methodology presented in this preliminary sizing analysis and related sensitivity analysis should allow the PDT to move forward in completing the PIR. Suggested issues to address include:

1. **Changing conditions.** An appropriate adaptive management approach could be developed for addressing the inevitable future changes in the following areas.
    a. "With Project" flows; an iterative process of hydrologic and water quality modeling will likely be required to finalize the "With Project" conditions (e.g., to exclude runoff from the new STA footprint) and to determine the ultimate inflow volume and associated phosphorus load to be treated in the new STA.
    b. Revisions to the STA effluent limitations, including establishment of the Water-Quality Based Effluent Limitations which will replace the target STA TP concentrations used in this study.
    c. Revised forecasts of the Lake Okeechobee discharge phosphorus levels as CERP and other projects combine to aid in the recovery of the Lake.
    d. Revised forecasts of STA performance, as large-scale enhancements and expansions are implemented, and the effects of, and management options for, Calcium are better understood.
    e. Revised forecasts of the EAA runoff phosphorus concentrations, particularly if the recent increasing trend continues.

Table 9. Description of SFWMM Simulations Associated with the EAASR.

Model Simulation or Iteration	Name of Flows	Description of Modeling
1	EAA5	The EAA5 run produced initial estimates of flows that are being used by the DMSTA in the preliminary sizing of the new STA for the EAA Storage Reservoir.
2	2050B4	The new 2050B4-like base will include Alt1, CSOP, and LORSS TSP. Operational modifications will be made to meet the long-term inflow targets for not exceeding treatment capacity of STA 2, Compartment B, and STA 3 / 4. The resulting flows would be checked with DMSTA.
3	2050B4_x	If the 2050B4-like flows do not meet the treatment requirements of the STAs, iterations of the 2050B4-like run may be needed.
4	NAI	The reservoir and the preliminary size of the new STA will be incorporated into the 2050B4-like base. Operational modifications will be made to meet the long-term inflow targets for the STAs, as well as all other assumptions, constraints, and operational intent as part of the NAI. Flows from this new NAI would be checked with DMSTA for not exceeding treatment capacity of STA 2, Compartment B, and STA 3 / 4; and to finalize the size of the new STA.
5	NAI_x	If the NAI flows do not meet the treatment requirements of the STAs, iterations of the NAI run may be needed.
6	2010Base	The appropriate assumptions of the 2050B4-like base will be incorporated into a 2010 base. Operational modifications may be necessary. These flows would be checked for not exceeding treatment capacity of the STAs.
7	2010Base_x	If the 2010 base flows exceed the treatment capacity of the STAs, iterations of the 2010 base run may be needed.
8	IOR	The reservoir and new STA will be incorporated in the 2010 base to produce the 2010 with project or IOR run, and operational modifications would be made to meet targets, assumptions, constraints, and operational criteria similarly to what was done with the NAI run. This simulation will be used for project assurances and savings clause analysis. Flows would be checked with DMSTA.
9	IOR_x	If the IOR flows exceed the treatment capacity of the STAs, iterations of the IOR run may be needed.
10	Ops	For project operations, it will be necessary to describe operational rules for the reservoir. This information is not readily available from the IOR run, since the environmental deliveries are based on daily triggers at various locations within the Everglades and are not easily translated into rules that operators can use. A simulation of the reservoir operations may require an operational model, which may result in different flows than the IOR. If the operational model does not include STA treatment, these flows would be checked with DMSTA.
11	Ops_x	If the operational flows exceed the treatment capacity of the STAs, iterations of the operational model may be needed.

2. **STA Design.** The design of the new STA should build on the lessons learned from the design, construction and operation of the Everglades STAs, and incorporate the most effective phosphorus removal features available.

3. **Refinement of Reservoir Operations and Possible Configuration Revision.** There may be considerable opportunity to refine the operations of the EAASR treatment cells in order to enhance the performance of the STAs. For example, it is noted that the annual volume of water projected to enter the combined 30,000-acre EAASR was less than the annual inflow volume to STA-3/4 – even though the STA is approximately 50% of the area. This may also suggest that a portion of the footprint designated for the EAASR might be more effectively utilized for the proposed STA, although more rigorous hydraulic modeling will be necessary to ensure the hydraulic constraints and storage requirements of the EAASR are preserved. In addition, the estimated size of the new STA could potentially be reduced if the phosphorus removal within the reservoirs is improved from the 15-22% range forecast in this analysis. Measures to improve this performance are not fully developed at this time, but evaluation of the hydraulics and vegetation characteristics of large Florida lakes suggest improved performance may result from avoiding dryout in the reservoir and relatively long hydraulic detention times. Those goals will likely conflict with other water delivery goals for the reservoirs, and need further evaluation for their feasibility prior to firm recommendations.

4. **Integration with Compartment B.** Consistent with the conditions simulated by EAA5, no consideration was given to integrating the operation of the EAASR and the STAs with the treatment area being designed for Compartment B. Developing an integrated regional operations strategy, as planned in the future SFWMM simulations described in Table 9, will likely minimize the additional treatment area of the proposed STA and enhance the overall STA performance, thereby ensuring the highest quality of water entering the Everglades.

8.0 REFERENCES

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CERTIFICATION

I hereby certify, as a Professional Engineer in the State of Florida, that the information in this report was assembled under my direct personal charge. This report is not intended or represented to be suitable for reuse without specific verification or adaptation by the Engineer. This certification is made in accordance with the provisions of the Laws and Rules of the Florida Board of Professional Engineers under Chapter 61G15-29, Florida Administrative Code.

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Gary F. Goforth, P.E. Florida P.E. # 35525

Date:_____

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APPENDIX 1. CRITICAL ASSUMPTIONS INCORPORATED INTO THIS ANALYSIS

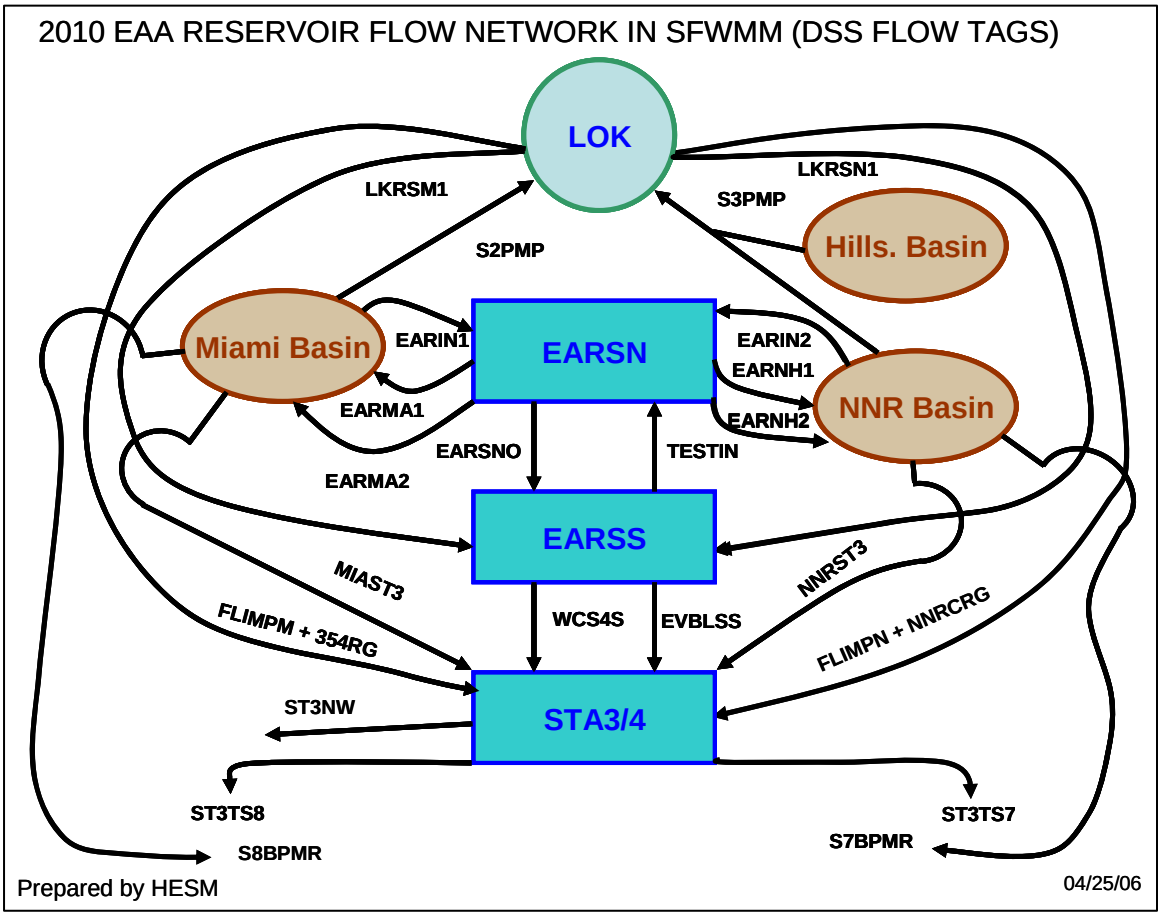
	Critical Issue	Background	Assumption For This Sizing Analysis	Outstanding Questions
1	What is the target STA outflow TP target, estimated as a long-term average annual value?	1. Florida has adopted a water quality standard for Total Phosphorus (TP) for the Everglades, with a numeric criterion of a long-term geometric mean of 10 ppb (62-302.540, F.A.C.). The water quality treatment goal for the new STA and STA-3/4 is to achieve compliance with the new TP water quality standard. FDEP has not yet established a Water-Quality Based Effluent Limitation (62.650 F.A.C.) for discharges into the Everglades. 2. Performance Measure GE-4 (TP Concentrations) cites the TP water quality standard for the Everglades; it was noted that the performance measure inaccurately describes the TP water quality standard and criterion. 3. Performance Measure GE-5 (TP Loads) cites the methods and results of the 2003 Long-Term Plan, which forecast 2050 TP loads from STA-3/4 of 10.2-15.3 metric tons/year corresponding to long-term flow-weighted mean concentrations of 14-21 ppb.	FDEP will establish the effluent limitations in accordance with the State process, however, the results will not be available in time for this analysis. For the purpose of this analysis, a range of long-term outflow flow-weighted mean TP concentration targets will be used. A lower value of 12 ppb was suggested by Bob Kadlec, derived from multiplying 10 ppb by his estimate of the ratio of flow-weighted mean:geometric mean outflow concentrations observed at the STAs. A second target of 15 ppb was identified as the lowest flow-weighted mean concentration observed in the calibration data set for a large-scale treatment cell constructed on prior agricultural land. A third target of 19 ppb will be used as an upper bound on the sensitivity analysis. Reporting of DMSTA results will include an appropriate footnote indicating that long-term average values below 15 ppb are lower than have been observed. The distribution of annual outflow concentrations will be reported, but there will be no additional simulations conducted to achieve any specific annual maximum value. The annual loads forecast by the sensitivity analysis above will be compared to the 2003 LTP forecast loads (10.2 - 15.3 metric tons/yr) to determine if an additional scenario is needed to achieve these targets.	

	Critical Issue	Background	Assumption For This Sizing Analysis	Outstanding Questions
2	What is the appropriate TP concentration to use for Lake Okeechobee deliveries to the EAA reservoirs and the STAs?	Various planning documents assumed TP concentrations in Lake deliveries at levels quite a bit lower than has been observed since the 2004 hurricanes.	For the purpose of this analysis, a sensitivity analysis will be performed using TP concentrations with a Base Condition of 150 ppb, a low end of 100 ppb and a high end of 200 ppb. Monthly variations in Lake concentrations will be applied.	
3	What is the appropriate TP concentration to use for EAA runoff to the reservoirs and STAs?	Various planning documents assumed TP concentrations in EAA runoff at levels lower than has been observed since the 2004 hurricanes. The District is conducting an analysis of this phenomenon, but results are not expected to be available in time for this STA sizing analysis. A preliminary analysis of WY2005 and WY2006 inflows to STA-3/4 indicate that the TP concentration from the S-7/S-2 basin (North New River Canal) has increased from a 10-yr average of 75 ppb (WY1995-2004) to a 12-yr average of 82 ppb. A similar analysis indicates that the TP concentration from the S-8/S-3 basin (Miami Canal) has increased from a 10-yr average of 82 ppb to a 12-yr average of 88 ppb.	The 12-year average monthly TP concentrations for EAA runoff will be used in lieu of the 10-year monthly concentrations used in the EAA Regional Feasibility Study.	

	Critical Issue	Background	Assumption For This Sizing Analysis	Outstanding Questions
4	What phosphorus removal characteristic is appropriate for STA-3/4 and the new STA?	Evidence at various scales suggest that phosphorus removal in a treatment wetland may be less in systems with lower Calcium inflows than in the DMSTA calibration data sets. A reduction of 33% in the effective settling rate was observed by Dierberg et al. (2006) for a recent mesocosm study.	The DMSTA parameters for the EMG_3 and SAV_3 will be used as the Base Condition. An additional set of simulations will be conducted using a reduced K value for SAV treatment cells based on the volumetric ratio of Lake water and EAA runoff; the settling rate will be reduced by 16.8%.	
5	What phosphorus removal characteristic is appropriate for the reservoirs?	Evidence from large Florida lakes indicate that phosphorus removal in the reservoirs may be better than predicted using the standard DMSTA RES_3 parameter values if the operations are modified to minimize dryout and maintain shallower depths.	The standard RES_3 parameter values will be used for the Base Condition. An additional simulation will be conducted using an increased K value of 9 m/yr, equal to the 90th percentile of the DMSTA calibration data sets for reservoirs.	
6	Should water supply deliveries that are simulated in the 2x2 model as going around the reservoirs and STAs be routed through the STAs for treatment?	The EAA1_4 scenario of the 2x2 model simulated approximately 68,000 AF/yr of water supply deliveries around the reservoirs and STAs to downstream users, including the Seminole Indian reservation and the Lower East Coast.	Use the flows generated by the 2x2 model	

	Critical Issue	Background	Assumption For This Sizing Analysis	Outstanding Questions
7	Can long-term high performance of large SAV treatment cells be sustained in spite of hurricanes and drought?	The large SAV cells in STA-1W and STA-2 suffered extensive vegetative disruption during the 2004 and 2005 hurricanes. The District is currently incorporating parallel bands of emergent vegetation in SAV cells to shorten the wind fetch and minimize future disruption. As part of the on-going STA enhancements, the large SAV cells are being retrofit with water supply pumps to minimize dryout.	Use the standard DMSTA SAV_3 parameter values for this analysis.	Beyond the scope of this analysis, but a critical question none-the-less: Will the vegetation strips increase the resiliency of SAV cells?

APPENDIX 2. SFWMM Flow Terms and Distributions.



APPENDIX 3. DEVELOPMENT OF WY1995-2006 MONTHLY CONCENTRATIONS FOR NORTH NEW RIVER AND MIAMI CANAL RUNOFF

In recognition of the increased TP concentrations in EAA runoff over the past two water years, the 1995-2004 period of record used by ADA/B&M in the EAA RFS was adjusted to include WY2005 and 2006. The resulting 12-year period of record monthly TP concentrations were used to develop daily time series of TP inflows to the reservoirs and STAs. In order to estimate the influence of WY2005 and WY2006 on the 10-year period of record developed by ADA/B&M (2005) in the brief time available for this analysis, it was necessary to assume that sources other than the EAA and Lake Okeechobee did not significantly influence the STA-3/4 inflow concentrations during WY2004 and WY2005. The degree to which other sources influenced the inflow concentrations would influence these results. Lake inflows to STA-3/4 for WY2005 and WY2006 were provided by District staff. Negative loads were set to zero. For WY2006, it was assumed that Lake deliveries entered STA-3/4 via G-370; any excess, i.e., greater than the total inflow to G-370, was assumed to enter G-372.

Results for the Miami Canal

10-Year Period of Record Results from the EAA Regional Feasibility Study (ADA/Burns & McDonnell)

Month	WY1995-2004		
	Flow AF	TP Load kg	TP Conc ppb
Jan	13,162	652	40
Feb	18,772	959	41
Mar	12,152	698	47
Apr	10,107	840	67
May	17,114	1,944	92
Jun	45,719	3,758	67
Jul	36,230	4,303	96
Aug	40,839	4,555	90
Sep	45,152	5,001	90
Oct	38,284	4,479	95
Nov	26,486	4,317	132
Dec	27,213	2,013	60
Average	**331,230**	**33,519**	**82**

WY2005 Total			WY2005 LO			WY2005 runoff		
Flow AF	TP Load kg	TP Conc ppb	Flow AF	TP Load kg	TP Conc ppb	Flow AF	TP Load kg	TP Conc ppb
7,063	671	77	1,613	404	203	5,451	267	40
14,993	3,484	188	9,136	2,983	265	5,857	501	69
58,556	5,844	81	1,356	393	235	57,200	5,451	77
24,352	6,258	208	23,984	6,779	229	0	0	
23,088	4,756	167	1,106	71	52	21,982	4,685	173
137,389	22,927	135	3,751	260	56	133,638	22,667	138
83,563	9,880	96	3,120	188	49	80,443	9,692	98
27,908	2,274	66	-59	0	0	27,967	2,274	66
27,055	1,839	55	-3,196	0	0	30,251	1,839	49
66,363	8,268	101	290	-19	-53	66,072	8,287	102
24,938	3,674	119	0	0		24,938	3,674	119
1,167	79	55	1,017	94	75	0	0	
496,434	**69,953**	**114**	**42,118**	**11,153**	**215**	**453,798**	**59,336**	**106**

WY2006 total			WY2006 LO			WY2006 runoff		
Flow AF	TP Load kg	TP Conc ppb	Flow AF	TP Load kg	TP Conc ppb	Flow AF	TP Load kg	TP Conc ppb
17,023	3,974	189	17,008	3,973	189	15	0	24
24,249	5,621	188	0	0		24,249	5,621	188
8,247	1,799	177	0	0		8,247	1,799	177
3,452	604	142	4,588	763	135	0	0	
23,088	4,756	167	0	0		23,088	4,756	167
137,389	22,927	135	0	0		137,389	22,927	135
83,563	9,880	96	0	0		83,563	9,880	96
27,908	2,274	66	0	0		27,908	2,274	66
27,055	1,839	55	0	0		27,055	1,839	55
66,363	8,268	101	0	0		66,363	8,268	101
24,938	3,674	119	0	0		24,938	3,674	119
1,167	79	55	0	0		1,167	79	55
444,441	**65,695**	**120**	**21,596**	**4,736**	**178**	**423,981**	**61,117**	**117**

WY1995-2006		
Flow AF	TP Load kg	TP Conc ppb
11,424	566	40
18,152	1,309	58
15,581	1,186	62
8,423	700	67
18,017	2,407	108
60,685	6,931	93
43,859	5,217	96
38,689	4,175	87
42,402	4,474	86
42,940	5,112	97
26,228	4,210	130
22,775	1,684	60
349,173	**37,970**	**88**

Results for the North New River Canal

10-Year Period of Record Results from the EAA Regional Feasibility Study (ADA/Burns & McDonnell)

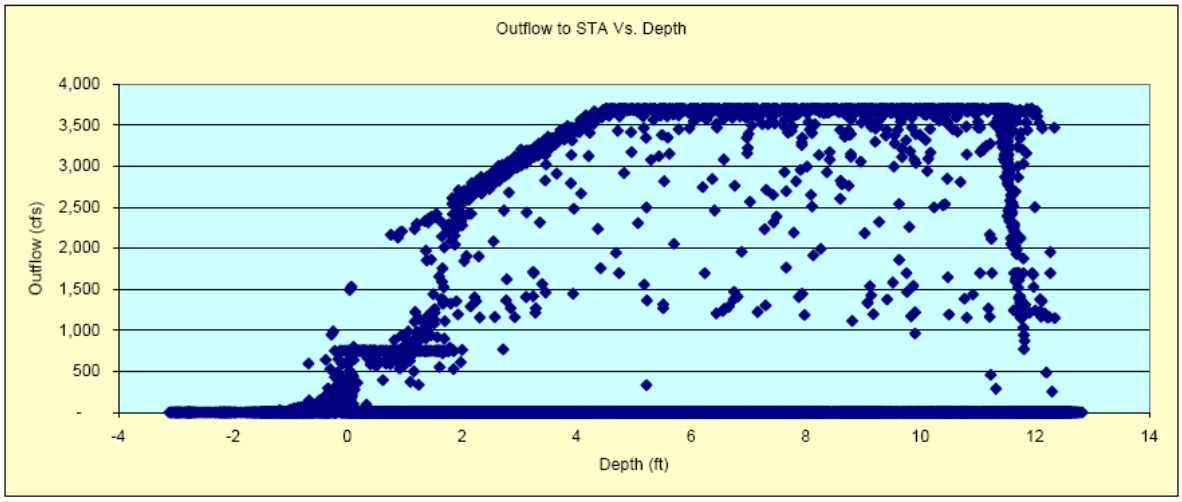
Month	WY1995-2004		
	Flow AF	TP Load kg	TP Conc ppb
Jan	5,020	242	39
Feb	11,094	809	59
Mar	9,926	748	61
Apr	6,634	679	83
May	10,120	1,195	96
Jun	29,428	2,923	81
Jul	27,775	2,447	71
Aug	23,675	1,777	61
Sep	26,349	2,170	67
Oct	25,075	2,032	66
Nov	15,611	2,307	120
Dec	14,069	1,614	93
Average	**204,776**	**18,943**	**75**

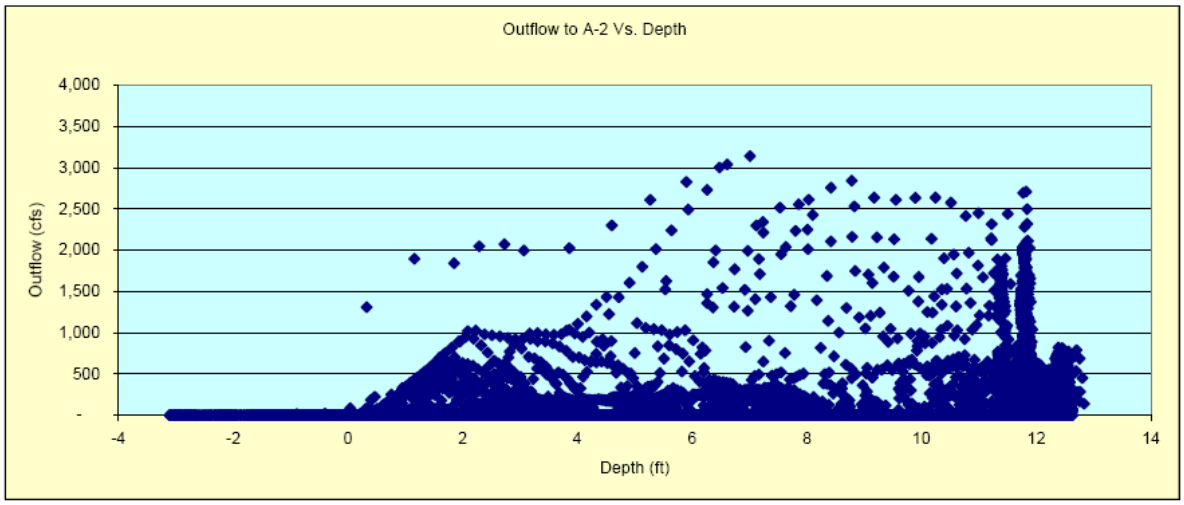
WY2005 total inflows			WY2005 LO			WY2005 runoff		
Flow AF	TP Load kg	TP Conc ppb	Flow AF	TP Load kg	TP Conc ppb	Flow AF	TP Load kg	TP Conc ppb
4,171	509	99	1,111	292	213	3,061	217	58
13,277	2,877	176	9,023	2,730	245	4,254	147	28
30,822	3,898	103	960	349	295	29,862	3,549	96
24,441	6,494	215	23,359	5,476	190	1,082	1,018	763
270	18	54	270	55	165	0	0	
15,971	2,086	106	28	7	204	15,944	2,079	106
17,980	2,558	115	107	17	129	17,873	2,541	115
92,617	9,527	83	0			92,617	9,527	83
66,584	10,996	134	0			66,584	10,996	134
12,054	1,897	128	0			12,054	1,897	128
0	0		0			0	0	
27,052	5,839	175	17,659	3,667	168	9,393	2,172	187
305,238	**46,699**	**124**	**52,516**	**12,593**	**194**	**252,721**	**34,143**	**110**

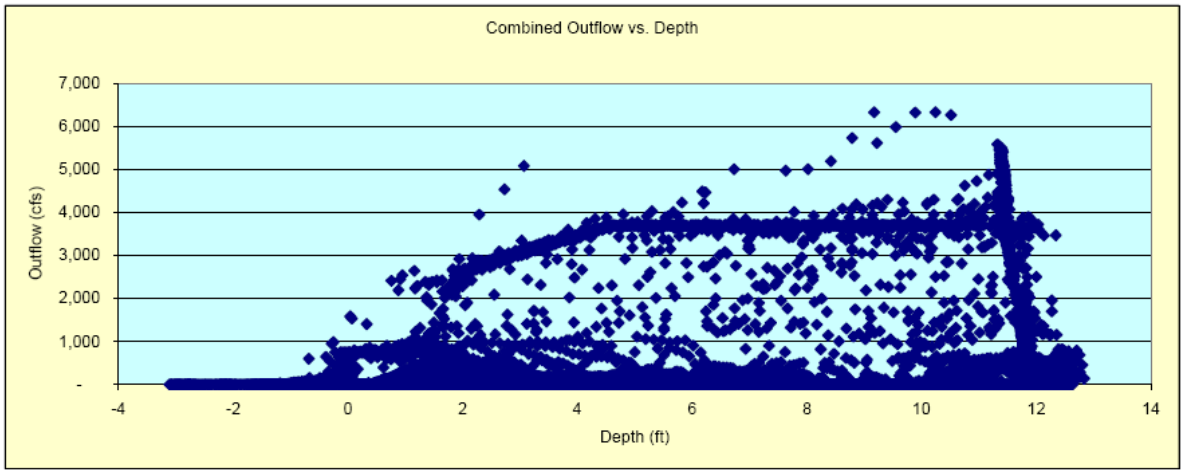
WY2006 total inflows			WY2006 Lake			WY2006 Runoff		
Flow AF	TP Load kg	TP Conc ppb	Flow AF	TP Load kg	TP Conc ppb	Flow AF	TP Load kg	TP Conc ppb
17,793	4,249	194	34,801	8,222	192	0	0	
18,039	4,316	194	356	44	100	17,683	4,272	196
9,119	3,037	270	238	31	106	8,881	3,006	274
0	0		4,588	763	135	0	0	
23,138	5,056	177	16,117	3,606	181	7,021	1,450	167
71,862	9,558	108	3	1	246	71,859	9,557	108
24,854	2,960	97	188	16	69	24,666	2,944	97
13,035	853	53	100	8	65	12,936	845	53
22,668	1,900	68	189	12	52	22,479	1,888	68
42,705	6,835	130	0	0		42,705	6,835	130
8,499	813	78	153	13	69	8,346	800	78
1,008	104	84	66	4	49	942	100	86
252,721	**39,680**	**127**	**56,799**	**12,720**	**182**	**217,518**	**31,696**	**118**

WY1995-2006		
Flow AF	TP Load kg	TP Conc ppb
4,438	220	40
11,073	1,042	76
11,500	1,170	82
5,618	651	94
9,018	1,117	100
31,840	3,406	87
26,691	2,496	76
28,525	2,345	67
29,379	2,882	80
25,459	2,421	77
13,705	1,989	118
12,585	1,534	99
209,833	**21,272**	**82**

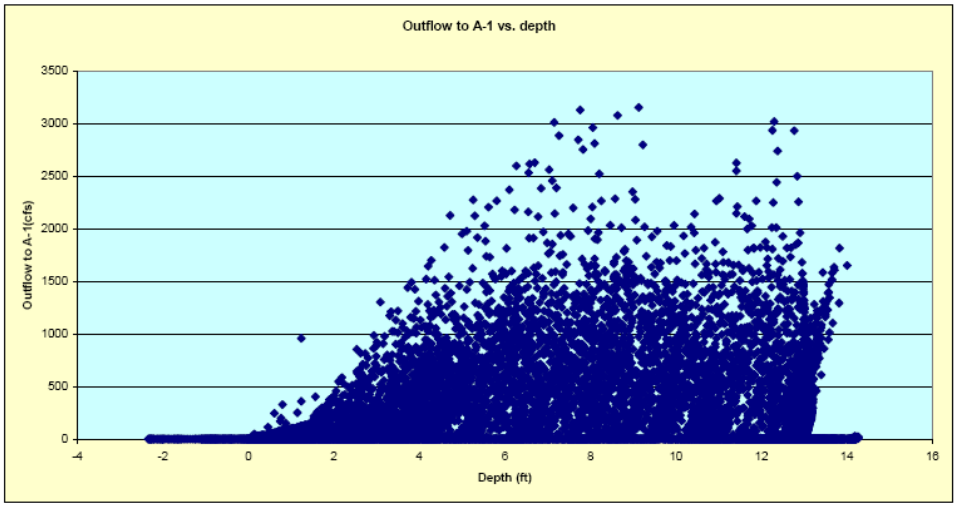
APPENDIX 4. RESERVOIR OUTFLOW-DEPTH RELATIONSHIPS
A-1 Outflows

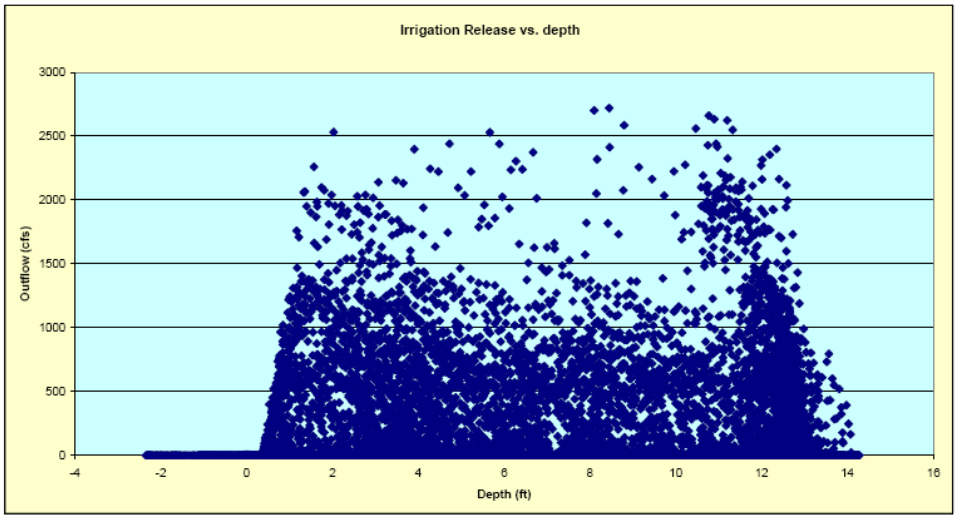


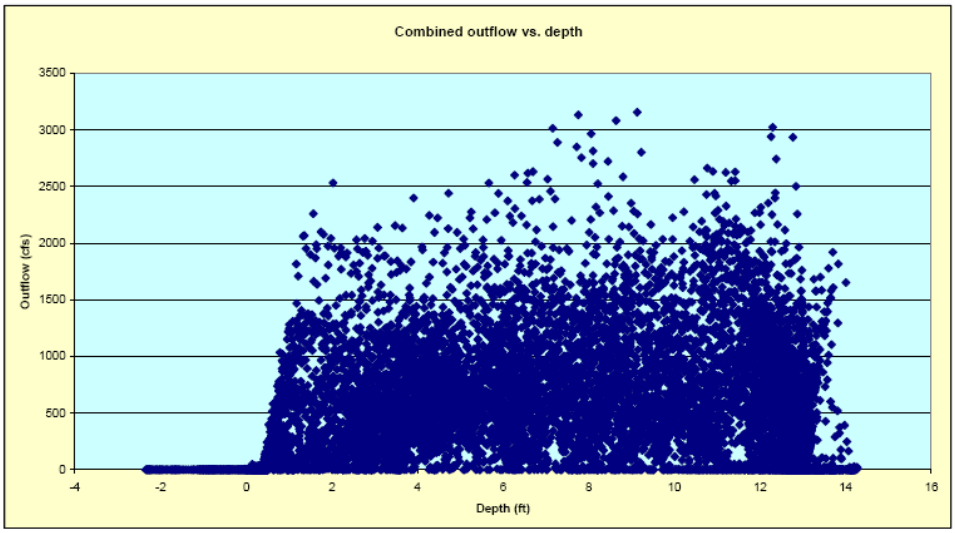




A-2 Outflows


Outflow to A-1 vs. depth
Outflow to A-1(cfs)
3500
3000
2500
2000
1500
1000
500
0
-4
-2
0
2
4
6
8
10
12
14
16
Depth (ft)


Irrigation Release vs. depth
Outflow (cfs)
3000
2500
2000
1500
1000
500
0
-4
-2
0
2
4
6
8
10
12
14
16
Depth (ft)


Combined outflow vs. depth
Outflow (cfs)
3500
3000
2500
2000
1500
1000
500
0
-4
-2
0
2
4
6
8
10
12
14
16
Depth (ft)

APPENDIX 5. DMSTA SUMMARY SHEETS

Index to DMSTA Input/Output Sheets

Input Variable	Units	Value	Case Description:
Design Case Name	-	A1	Compartment A-1
Input Series Name		TS_A1	15,200 acres (from A8)
Starting Date for Simulation	-	01/01/65	Inflow volumes, outflow volumes, and depths from SFWMM simulation
Ending Date for Simulation	-	04/30/00	Tested series compare DMSTA simulation with independent sfwmm simulation
Starting Date for Output	-	05/01/65	
Integration Steps Per Day	-	4	Simulation Type:
Number of Iterations	-	0	
Output Averaging Interval	days	30	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	76.6	#N/A	#N/A
GM Outflow C (ppb)	72.5	#N/A	#N/A
Load Reduction %	15%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	2	0.7%
Warning/Error Messages	1	

Cell Number -->	1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	1											
Vegetation Type	RES_3											
Inflow Fraction	1											
Downstream Cell Number												
Surface Area	61.54											
Mean Width of Flow Pa	6.70											
Number of Tanks in Series	1.0											
Minimum Depth for Releases	15											
Release 1 Series Name	IRRIG											
Release 2 Series Name	TO_A2											
Outflow Series Name	TO_STA											
Depth Series Name	A1_DEPTH											
Outflow Control Depth												
Outflow Weir Depth												
Outflow Coefficient - Exponent	1.5											
Outflow Coefficient - Intercept	8											
Bypass Depth												
Maximum Inflow												
Maximum Outflow	9.05233											
Inflow Seepage Rate												
Inflow Seepage Control Elev												
Inflow Seepage Conc												
Outflow Seepage Rate	0.00081											
Outflow Seepage Control Elev	6											
Max Outflow Seepage Conc	100											
Seepage Recycle to Cell Number	1											
Seepage Recycle Fraction	0.75											
Seepage Discharge Fraction												
Initial Water Column Conc	105											
Initial P Storage Per Unit Area	525											
Initial Water Column Depth	150											
C0 = Conc at 0 g/m2 P Storage	3											
C1 = Conc at 1 g/m2 P storage	150											
C2 = Conc at Half-Max Uptake												
K = Net Settling Rate at Steady State	5.0											
Z1 = Saturated Uptake Depth	40											
Z2 = Lower Penalty Depth	100											
Z3 = Upper Penalty Depth	400											

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	1.56												1.56
Run Date	-	10/10/06												10/10/06
Starting Date for Simulation	-	01/01/65												01/01/65
Starting Date for Output	-	05/01/65												05/01/65
Ending Date	-	04/30/00												04/30/00
Output Duration	days	12784												12784
Cell Label		1												Total
Downstream Cell Label		Outflow												-
Network Simulation Name	-	EAASR_NET												EAASR_NET
Simulation Type	-	Base												Base
Surface Area	km2	61.54												61.54
Mean Rainfall	cm/yr	130.73												130.7
Mean ET	cm/yr	135.34												135.3
Cell Inflow Volume	hm3/yr	717.8												717.8
Cell Inflow Load	kg/yr	64136.0												64136
Cell Inflow Conc	ppb	89												89.4
Treated Outflow Volume	hm3/yr	578.3												578.3
Treated Outflow Load	kg/yr	44316.3												44316
Treated FWM Outflow Conc	ppb	77												76.6
Upper Confidence Limit	ppb	#N/A												#N/A
Lower Confidence Limit	ppb	#N/A												#N/A
Total Outflow Volume + Bypass	hm3/yr	701.7												701.7
Total Outflow Load + Bypass	kg/yr	54416.8												54416.8
Total FWM Outflow Conc	ppb	77.5												77.5
Bypass Load	kg/yr	0												0.0
Bypass Load	%	0%												0.0
Maximum Inflow	hm3/d	11.90												11.90
Maximum Outflow	hm3/d	9.01												9.01
Surface Load Reduction	kg/yr	19820												19820
Load Trapped in Sediments	kg/yr	10598												10598
Overall Load Reduction	%	15%												15%
Lower Confidence Limit	%	#N/A												#N/A
Upper Confidence Limit	%	#N/A												#N/A
Daily Geometric Mean	ppb	67.7												#N/A
Outflow Geo Mean - Composites	ppb	72.5												72.5
Upper Confidence Limit	ppb	#N/A												#N/A
Lower Confidence Limit	ppb	#N/A												#N/A
Frequency Outflow Conc > 10 ppb	%	100%												100%
Frequency Outflow Conc > 20 ppb	%	100%												100%
Frequency Outflow Conc > 50 ppb	%	81%												100%
Freq Outflow Volume > 10 ppb	%	82%												82%
95th Percentile Outflow Conc	ppb	199.53												200
Mean Biomass P Storage	mg/m2	412												412
Storage Increase / Net Removal	%	1%												1%
Net Storage Turnover Rate	1/yr	14.6												14.6
Unit Area P Load	mg/m2-yr	1042												1042
Unit Area P Removal	mg/m2-yr	172												172
Mean Water Load	cm/d	3.2												3.2
Max Water Load	cm/d	19.3												19.3
Mean Depth	cm	220												220
Minimum Depth	cm	1.0												1
Maximum Depth	cm	379.5												379
Frequency Depth < 10 cm	%	6%												5.6%
Flow/Width	m2/day	293												293.3
HRT Days	days	68.8												68.8
Mean Velocity	cm/sec	0.15												0.15
Seepage Outflow / Total Outflow	%	1%												2%
Release 1 Outflow Volume	hm3/yr	0.00												0.0
Release 2 Outflow Volume	hm3/yr	123.43												123.4
95th Percentile Outflow Volume	hm3/d	4.8												4.8
95th Percentile Outflow Load	kg/d	399.1												399.1
Simulated / Specified Mean Depth	%	99%												1.0
Release 1 Demand Met	%	#N/A												#N/A
Release 2 Demand Met	%	98%												1.0
Outflow Demand Met	%	100%												1.0
Range Check - Mean Depth	-													0
Range Check - Freq Depth < 10 cm	-	10.00												1
Range Check - Flow/Width	-													0
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-													0
Water Balance Error	%	0.00%												0.00%
Mass Balance Error	%	0.00%												0.00%
Warning or Error Messages		Cell# 1 Freq Z < 10 cm out of calib. range for RES_3: 0 vs. 0 - 0 %												1

Input Variable	Units	Value	Case Description:
Design Case Name	-	A2	Compartment A-2
Input Series Name		TS_A2	13,775 acres of effective area
Starting Date for Simulation	-	01/01/65	Inflow volumes, outflow volumes, and depths from SFWMM simulation
Ending Date for Simulation	-	04/30/00	Tested series compare DMSTA simulation with independent sfwmm simulation
Starting Date for Output	-	05/01/65	
Integration Steps Per Day	-	4	Simulation Type:
Number of Iterations	-	0	
Output Averaging Interval	days	30	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	67.3	#N/A	#N/A
GM Outflow C (ppb)	70.8	#N/A	#N/A
Load Reduction %	22%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	1	

Cell Number -->	1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	RES_A2											
Vegetation Type -->	RES_3											
Inflow Fraction	1											
Downstream Cell Number												
Surface Area (km2)	55.77											
Mean Width of Flow Pa (km)	10.00											
Number of Tanks in Series	1.0											
Minimum Depth for Releases (cm)	15											
Release 1 Series Name	IRRIG											
Release 2 Series Name												
Outflow Series Name	TO_A1											
Depth Series Name	A2_DEPTH											
Outflow Control Depth (cm)												
Outflow Weir Depth (cm)												
Outflow Coefficient - Exponent	1.5											
Outflow Coefficient - Intercept	8											
Bypass Depth (cm)												
Maximum Inflow (hm3/day)												
Maximum Outflow (hm3/day)	7.829											
Inflow Seepage Rate ((cm/d) / cm)												
Inflow Seepage Control Elev (cm)												
Inflow Seepage Conc (ppb)												
Outflow Seepage Rate ((cm/d) / cm)	0.000778											
Outflow Seepage Control Elev (cm)	6											
Max Outflow Seepage Conc (ppb)	100											
Seepage Recycle to Cell Number	1											
Seepage Recycle Fraction	0.75											
Seepage Discharge Fraction												
Initial Water Column Conc (ppb)	90											
Initial P Storage Per Unit Area (mg/m2)	375											
Initial Water Column Depth (cm)	200											
C0 = Conc at 0 g/m2 P Storage (ppb)	3											
C1 = Conc at 1 g/m2 P storage (ppb)	150											
C2 = Conc at Half-Max Uptake (ppb)												
K = Net Settling Rate at Steady State (m/yr)	5.0											
Z1 = Saturated Uptake Depth (cm)	40											
Z2 = Lower Penalty Depth (cm)	100											
Z3 = Upper Penalty Depth (cm)	400											

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	1.56												1.56
Run Date	-	10/10/06												10/10/06
Starting Date for Simulation	-	01/01/65												01/01/65
Starting Date for Output	-	05/01/65												05/01/65
Ending Date	-	04/30/00												04/30/00
Output Duration	days	12784												12784
Cell Label		RES_A2												Total
Downstream Cell Label		Outflow												-
Network Simulation Name	-	EAASR_NET												EAASR_NE
Simulation Type	-	Base												Base
Surface Area	km2	55.77												55.77
Mean Rainfall	cm/yr	128.19												128.2
Mean ET	cm/yr	137.71												137.7
Cell Inflow Volume	hm3/yr	460.7												460.7
Cell Inflow Load	kg/yr	38540.5												38541
Cell Inflow Conc	ppb	84												83.7
Treated Outflow Volume	hm3/yr	232.9												232.9
Treated Outflow Load	kg/yr	15677.5												15678
Treated FWM Outflow Conc	ppb	67												67.3
Upper Confidence Limit	ppb	#N/A												#N/A
Lower Confidence Limit	ppb	#N/A												#N/A
Total Outflow Volume + Bypass	hm3/yr	441.8												441.8
Total Outflow Load + Bypass	kg/yr	30094.9												30094.9
Total FWM Outflow Conc	ppb	68.1												68.1
Bypass Load	kg/yr	0												0.0
Bypass Load	%	0%												0.0
Maximum Inflow	hm3/d	7.58												7.58
Maximum Outflow	hm3/d	4.47												4.47
Surface Load Reduction	kg/yr	22863												22863
Load Trapped in Sediments	kg/yr	9195												9195
Overall Load Reduction	%	22%												22%
Lower Confidence Limit	%	#N/A												#N/A
Upper Confidence Limit	%	#N/A												#N/A
Daily Geometric Mean	ppb	70.6												#N/A
Outflow Geo Mean - Composites	ppb	70.8												70.8
Upper Confidence Limit	ppb	#N/A												#N/A
Lower Confidence Limit	ppb	#N/A												#N/A
Frequency Outflow Conc > 10 ppb	%	100%												100%
Frequency Outflow Conc > 20 ppb	%	100%												100%
Frequency Outflow Conc > 50 ppb	%	97%												100%
Freq Outflow Volume > 10 ppb	%	53%												53%
95th Percentile Outflow Conc	ppb	81.98												82
Mean Biomass P Storage	mg/m2	425												425
Storage Increase / Net Removal	%	1%												1%
Net Storage Turnover Rate	1/yr	13.6												13.6
Unit Area P Load	mg/m2-yr	691												691
Unit Area P Removal	mg/m2-yr	165												165
Mean Water Load	cm/d	2.3												2.3
Max Water Load	cm/d	13.6												13.6
Mean Depth	cm	258												258
Minimum Depth	cm	1.0												1
Maximum Depth	cm	430.6												431
Frequency Depth < 10 cm	%	3%												2.6%
Flow/Width	m2/day	126												126.1
HRT Days	days	113.9												113.9
Mean Velocity	cm/sec	0.06												0.06
Seepage Outflow / Total Outflow	%	2%												4%
Release 1 Outflow Volume	hm3/yr	208.92												208.9
Release 2 Outflow Volume	hm3/yr	0.00												0.0
95th Percentile Outflow Volume	hm3/d	2.3												2.3
95th Percentile Outflow Load	kg/d	152.2												152.2
Simulated / Specified Mean Depth	%	99%												1.0
Release 1 Demand Met	%	97%												1.0
Release 2 Demand Met	%	#N/A												#N/A
Outflow Demand Met	%	100%												1.0
Range Check - Mean Depth	-													0
Range Check - Freq Depth < 10 cm	-	10.00												1
Range Check - Flow/Width	-													0
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-													0
Water Balance Error	%	0.00%												0.00%
Mass Balance Error	%	0.00%												0.00%
Warning or Error Messages		Cell# 1 Freq Z < 10 cm out of calib. range for RES_3: 0 vs. 0 - 0 %												1

Input Variable	Units	Value	Case Description:
Design Case Name	-	STA34	STA-3/4 and the new EAASR STA
Input Series Name		TS_STA34	Inflows distributed uniformly based on area
Starting Date for Simulation	-	01/01/65	New STA hydraulics based on average of existing STA-3/4 hydraulics
Ending Date for Simulation	-	04/30/00	Lake Okeechobee deliveries at 100 ppb
Starting Date for Output	-	05/01/65	The effective treatment area of the new STA, in acres, is estimated at 11250
Integration Steps Per Day	-	4	
Number of Iterations	-	3	
Output Averaging Interval	days	30	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Simulation Type:

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	11.9	#N/A	#N/A
GM Outflow C (ppb)	9.2	#N/A	#N/A
Load Reduction %	86%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	19	

Cell Number -->		1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Vegetation Type	-->	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3
Inflow Fraction	-	0.234811798		0.1955713		0.164732		0.13497		0.1349698		0.13497	
Downstream Cell Number	-	2		4		6		8		10		12.00	
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	6.07	9.11	6.07	9.11	6.07	9.11
Mean Width of Flow Path	km	3.42	4.50	2.89	4.02	4.88	4.88	3.33	3.33	3.33	3.33	3.33	3.33
Number of Tanks in Series	-	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Depth for Releases	cm												
Release 1 Series Name													
Release 2 Series Name													
Outflow Series Name													
Depth Series Name													
Outflow Control Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Outflow Weir Depth	cm												
Outflow Coefficient - Exponent	-	4	4	4	4	4	4	4	4	4	4	4	4
Outflow Coefficient - Intercept	-	1	1	1	1	1	1	1	1	1	1	1	1
Bypass Depth	cm												
Maximum Inflow	hm3/day												
Maximum Outflow	hm3/day												
Inflow Seepage Rate	(cm/d) / cm												
Inflow Seepage Control Elev	cm												
Inflow Seepage Conc	ppb												
Outflow Seepage Rate	(cm/d) / cm	0.0058	0.0029	0.0014		0.0038		0.0035		0.0035		0.0035	
Outflow Seepage Control Elev	cm	16	40	-67		-64							
Max Outflow Seepage Conc	ppb	20	20	20	20	20	20	20	20	20	20	20	20
Seepage Recycle to Cell Number	-	1		3		5		7		9		11	
Seepage Recycle Fraction	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Seepage Discharge Fraction	-												
Initial Water Column Conc	ppb	52	12	55	15	55	15	55	15	55	15	55	15
Initial P Storage Per Unit Area	mg/m2	2400	615	2400	615	2400	615	2400	615	2400	615	2400	615
Initial Water Column Depth	cm	60	60	60	60	60	60	60	60	60	60	60	60
C0 = Conc at 0 g/m2 P Storage	ppb	3	3	3	3	3	3	3	3	3	3	3	3
C1 = Conc at 1 g/m2 P storage	ppb	22	22	22	22	22	22	22	22	22	22	22	22
C2 = Conc at Half-Max Uptake	ppb	300	300	300	300	300	300	300	300	300	300	300	300
K = Net Settling Rate at Steady State	m/yr	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5
Z1 = Saturated Uptake Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Z2 = Lower Penalty Depth	cm	100	100	100	100	100	100	100	100	100	100	100	100
Z3 = Upper Penalty Depth	cm	200	200	200	200	200	200	200	200	200	200	200	200

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	33.51	35.04	36.29	37.96	39.29	41.27	42.40	43.82	45.03	46.62	47.81	49.22	49.22
Run Date	-	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65
Starting Date for Output	-	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65
Ending Date	-	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00
Output Duration	days	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784
Cell Label		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	Total
Downstream Cell Label		1B	Outflow	2B	Outflow	3B	Outflow	4B	Outflow	5B	Outflow	6B	Outflow	-
Network Simulation Name	-	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET
Simulation Type	-	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	6.07	9.11	6.07	9.11	6.07	9.11	112.49
Mean Rainfall	cm/yr	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	130.0
Mean ET	cm/yr	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.2
Cell Inflow Volume	hm3/yr	213.3	207.5	177.7	174.0	149.7	141.8	122.6	120.4	122.6	120.4	122.6	120.4	908.6
Cell Inflow Load	kg/yr	17302.7	9476.7	14411.2	7955.7	12138.7	6104.7	9945.6	5957.0	9945.6	5957.0	9945.6	5957.0	73689
Cell Inflow Conc	ppb	81	46	81	46	81	43	81	49	81	49	81	49	81.1
Treated Outflow Volume	hm3/yr	207.5	205.8	174.0	173.5	141.8	141.4	120.4	120.0	120.4	120.0	120.4	120.0	880.7
Treated Outflow Load	kg/yr	9476.7	2435.6	7955.7	2075.8	6104.7	1772.5	5957.0	1403.6	5957.0	1403.6	5957.0	1403.6	10495
Treated FWM Outflow Conc	ppb	46	12	46	12	43	13	49	12	49	12	49	12	11.9
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Outflow Volume + Bypass	hm3/yr	207.5	205.8	174.0	173.5	141.8	141.4	120.4	120.0	120.4	120.0	120.4	120.0	880.7
Total Outflow Load + Bypass	kg/yr	9476.7	2435.6	7955.7	2075.8	6104.7	1772.5	5957.0	1403.6	5957.0	1403.6	5957.0	1403.6	10494.5
Total FWM Outflow Conc	ppb	45.7	11.8	45.7	12.0	43.1	12.5	49.5	11.7	49.5	11.7	49.5	11.7	11.9
Bypass Load	kg/yr	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Bypass Load	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
Maximum Inflow	hm3/d	2.72	2.67	2.26	2.23	1.91	1.86	1.56	1.54	1.56	1.54	1.56	1.54	11.57
Maximum Outflow	hm3/d	2.67	2.65	2.23	2.23	1.86	1.86	1.54	1.53	1.54	1.53	1.54	1.53	11.34
Surface Load Reduction	kg/yr	7826	7041	6455	5880	6034	4332	3989	4553	3989	4553	3989	4553	63195
Load Trapped in Sediments	kg/yr	7824	7490	6555	6273	5764	4631	4034	4858	4034	4858	4034	4858	65215
Overall Load Reduction	%	45%	74%	45%	74%	50%	71%	40%	76%	40%	76%	40%	76%	86%
Lower Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Upper Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Daily Geometric Mean	ppb	38.8	7.7	39.1	7.8	38.5	8.0	42.3	7.5	42.3	7.5	42.3	7.5	#N/A
Outflow Geo Mean - Composites	ppb	40.4	9.1	40.6	9.2	38.6	9.8	44.2	9.1	44.2	9.1	44.2	9.1	9.2
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Frequency Outflow Conc > 10 ppb	%	100%	46%	100%	47%	100%	56%	100%	47%	100%	47%	100%	47%	47%
Frequency Outflow Conc > 20 ppb	%	98%	0%	99%	0%	99%	1%	100%	0%	100%	0%	100%	0%	7%
Frequency Outflow Conc > 50 ppb	%	24%	0%	24%	0%	18%	0%	39%	0%	39%	0%	39%	0%	0%
Freq Outflow Volume > 10 ppb	%	100%	66%	100%	67%	100%	72%	100%	66%	100%	66%	100%	66%	67%
95th Percentile Outflow Conc	ppb	57.86	15.95	57.98	16.23	54.91	16.94	62.35	15.53	62.35	15.53	62.35	15.53	16
Mean Biomass P Storage	mg/m2	1999	532	2002	537	1884	521	2087	535	2087	535	2087	535	1195
Storage Increase / Net Removal	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Net Storage Turnover Rate	1/yr	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	17.0
Unit Area P Load	mg/m2-yr	1407	671	1401	679	1263	684	1638	654	1638	654	1638	654	655
Unit Area P Removal	mg/m2-yr	636	531	637	536	600	519	664	533	664	533	664	533	580
Mean Water Load	cm/d	4.7	4.0	4.7	4.1	4.3	4.4	5.5	3.6	5.5	3.6	5.5	3.6	2.2
Max Water Load	cm/d	22.1	18.9	22.0	19.1	19.8	20.9	25.7	16.9	25.7	16.9	25.7	16.9	10.3
Mean Depth	cm	56	54	56	53	47	49	50	51	50	51	50	51	52
Minimum Depth	cm	25.0	16.5	23.2	14.6	9.2	7.0	24.4	15.1	24.4	15.1	24.4	15.1	17
Maximum Depth	cm	93.9	87.6	93.7	86.2	78.5	78.5	82.3	82.3	82.3	82.3	82.3	82.3	85
Frequency Depth < 10 cm	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.1%
Flow/Width	m2/day	171	126	169	118	84	80	101	99	101	99	101	99	116.1
HRT Days	days	11.8	13.4	11.8	13.1	11.1	11.2	9.1	14.2	9.1	14.2	9.1	14.2	23.6
Mean Velocity	cm/sec	0.35	0.27	0.35	0.26	0.20	0.19	0.23	0.22	0.23	0.22	0.23	0.22	0.26
Seepage Outflow / Total Outflow	%	2%	1%	2%	0%	5%	0%	2%	0%	2%	0%	2%	0%	3%
Release 1 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Release 2 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
95th Percentile Outflow Volume	hm3/d	1.4	1.4	1.2	1.2	1.0	1.0	0.8	0.9	0.8	0.9	0.8	0.9	6.3
95th Percentile Outflow Load	kg/d	74.2	21.0	62.3	17.8	49.0	15.2	46.3	12.1	46.3	12.1	46.3	12.1	90.2
Simulated / Specified Mean Depth	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 1 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 2 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Outflow Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Range Check - Mean Depth	-		0.87		0.86		0.78		0.83		0.83		0.83	6
Range Check - Freq Depth < 10 cm	-						10.00							1
Range Check - Flow/Width	-		0.78		0.73		0.49		0.61		0.61		0.61	6
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-		0.80		0.81		0.84		0.79		0.79		0.79	6
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mass Balance Error	%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Warning or Error Messages		Cell# 2 Depth out of calib. range for SAV_3: 54 vs. 62 - 87 cm						Cell# 8 Depth out of calib. range for SAV_3: 51 vs. 62 - 87 cm						19
		Cell# 2 Flow/Width out of calib. range for SAV_3: 126 vs. 162 - 374 m2/day						Cell# 8 Flow/Width out of calib. range for SAV_3: 99 vs. 162 - 374 m2/day						
		Cell# 2 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb						Cell# 8 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb						
		Cell# 4 Depth out of calib. range for SAV_3: 53 vs. 62 - 87 cm						Cell# 10 Depth out of calib. range for SAV_3: 51 vs. 62 - 87 cm						
		Cell# 4 Flow/Width out of calib. range for SAV_3: 118 vs. 162 - 374 m2/day						Cell# 10 Flow/Width out of calib. range for SAV_3: 99 vs. 162 - 374 m2/day						
		Cell# 4 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb						Cell# 10 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb						
		Cell# 6 Depth out of calib. range for SAV_3: 49 vs. 62 - 87 cm						Cell# 12 Depth out of calib. range for SAV_3: 51 vs. 62 - 87 cm						
		Cell# 6 Freq Z < 10 cm out of calib. range for SAV_3: 0 vs. 0 - 0 %						Cell# 12 Flow/Width out of calib. range for SAV_3: 99 vs. 162 - 374 m2/day						
		Cell# 6 Flow/Width out of calib. range for SAV_3: 80 vs. 162 - 374 m2/day						Cell# 12 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb						
		Cell# 6 Outflow Conc out of calib. range for SAV_3: 13 vs. 15 - 153 ppb												

Input Variable	Units	Value	Case Description:
Design Case Name	-	STA34	STA-3/4 and the new EAASR STA
Input Series Name		TS_STA34	Inflows distributed uniformly based on area
Starting Date for Simulation	-	01/01/65	New STA hydraulics based on average of existing STA-3/4 hydraulics
Ending Date for Simulation	-	04/30/00	Lake Okeechobee deliveries at 100 ppb
Starting Date for Output	-	05/01/65	The effective treatment area of the new STA, in acres, is estimated at 6000
Integration Steps Per Day	-	4	Simulation Type:
Number of Iterations	-	3	Output Variable / Mean / Lower CL / Upper CL
Output Averaging Interval	days	30	FWM Outflow C (ppb) / 15.2 / #N/A / #N/A
Inflow Conc Scale Factor	-	1	GM Outflow C (ppb) / 11.7 / #N/A / #N/A
Rainfall P Conc	ppb	10	Load Reduction % / 82% / #N/A / #N/A
Atmospheric P Load (Dry)	mg/m2-yr	20	Bypass Load (%) / 0.0%

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	14	

Cell Number -->		1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Vegetation Type	-->	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3
Inflow Fraction	-	0.28951855		0.24113575		0.203111		0.088755		0.0887548		0.088755	
Downstream Cell Number	-	2		4		6		8		10		12.00	
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	3.24	4.86	3.24	4.86	3.24	4.86
Mean Width of Flow Path	km	3.42	4.50	2.89	4.02	4.88	4.88	3.33	3.33	3.33	3.33	3.33	3.33
Number of Tanks in Series	-	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Depth for Releases	cm												
Release 1 Series Name													
Release 2 Series Name													
Outflow Series Name													
Depth Series Name													
Outflow Control Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Outflow Weir Depth	cm												
Outflow Coefficient - Exponent	-	4	4	4	4	4	4	4	4	4	4	4	4
Outflow Coefficient - Intercept	-	1	1	1	1	1	1	1	1	1	1	1	1
Bypass Depth	cm												
Maximum Inflow	hm3/day												
Maximum Outflow	hm3/day												
Inflow Seepage Rate	(cm/d) / cm												
Inflow Seepage Control Elev	cm												
Inflow Seepage Conc	ppb												
Outflow Seepage Rate	(cm/d) / cm	0.0058	0.0029	0.0014		0.0038		0.0035		0.0035		0.0035	
Outflow Seepage Control Elev	cm	16	40	-67		-64							
Max Outflow Seepage Conc	ppb	20	20	20	20	20	20	20	20	20	20	20	20
Seepage Recycle to Cell Number	-	1		3		5		7		9		11	
Seepage Recycle Fraction	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Seepage Discharge Fraction	-												
Initial Water Column Conc	ppb	52	12	55	15	55	15	55	15	55	15	55	15
Initial P Storage Per Unit Area	mg/m2	2400	615	2400	615	2400	615	2400	615	2400	615	2400	615
Initial Water Column Depth	cm	60	60	60	60	60	60	60	60	60	60	60	60
C0 = Conc at 0 g/m2 P Storage	ppb	3	3	3	3	3	3	3	3	3	3	3	3
C1 = Conc at 1 g/m2 P storage	ppb	22	22	22	22	22	22	22	22	22	22	22	22
C2 = Conc at Half-Max Uptake	ppb	300	300	300	300	300	300	300	300	300	300	300	300
K = Net Settling Rate at Steady State	m/yr	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5
Z1 = Saturated Uptake Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Z2 = Lower Penalty Depth	cm	100	100	100	100	100	100	100	100	100	100	100	100
Z3 = Upper Penalty Depth	cm	200	200	200	200	200	200	200	200	200	200	200	200

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	31.28	32.66	33.85	35.35	36.54	38.04	39.37	40.99	42.29	43.62	44.95	46.48	46.48
Run Date	-	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65
Starting Date for Output	-	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65
Ending Date	-	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00
Output Duration	days	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784
Cell Label		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	Total
Downstream Cell Label		1B	Outflow	2B	Outflow	3B	Outflow	4B	Outflow	5B	Outflow	6B	Outflow	-
Network Simulation Name	-	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET
Simulation Type	-	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	3.24	4.86	3.24	4.86	3.24	4.86	91.23
Mean Rainfall	cm/yr	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	130.0
Mean ET	cm/yr	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.2
Cell Inflow Volume	hm3/yr	263.1	256.9	219.1	215.3	184.5	176.5	80.6	79.5	80.6	79.5	80.6	79.5	908.6
Cell Inflow Load	kg/yr	21333.9	12954.7	17768.7	10873.7	14966.8	8461.1	6540.1	4303.8	6540.1	4303.8	6540.1	4303.8	73690
Cell Inflow Conc	ppb	81	50	81	51	81	48	81	54	81	54	81	54	81.1
Treated Outflow Volume	hm3/yr	256.9	255.0	215.3	214.8	176.5	176.2	79.5	79.3	79.5	79.3	79.5	79.3	883.9
Treated Outflow Load	kg/yr	12954.7	3813.0	10873.7	3247.0	8461.1	2781.3	4303.8	1197.7	4303.8	1197.7	4303.8	1197.7	13434
Treated FWM Outflow Conc	ppb	50	15	51	15	48	16	54	15	54	15	54	15	15.2
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Outflow Volume + Bypass	hm3/yr	256.9	255.0	215.3	214.8	176.5	176.2	79.5	79.3	79.5	79.3	79.5	79.3	883.9
Total Outflow Load + Bypass	kg/yr	12954.7	3813.0	10873.7	3247.0	8461.1	2781.3	4303.8	1197.7	4303.8	1197.7	4303.8	1197.7	13434.4
Total FWM Outflow Conc	ppb	50.4	15.0	50.5	15.1	47.9	15.8	54.1	15.1	54.1	15.1	54.1	15.1	15.2
Bypass Load	kg/yr	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Bypass Load	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
Maximum Inflow	hm3/d	3.35	3.29	2.79	2.76	2.35	2.30	1.03	1.01	1.03	1.01	1.03	1.01	11.57
Maximum Outflow	hm3/d	3.29	3.28	2.76	2.75	2.30	2.30	1.01	1.01	1.01	1.01	1.01	1.01	11.36
Surface Load Reduction	kg/yr	8379	9142	6895	7627	6506	5680	2236	3106	2236	3106	2236	3106	60255
Load Trapped in Sediments	kg/yr	8321	9580	6973	8020	6182	5979	2263	3269	2263	3269	2263	3269	61651
Overall Load Reduction	%	39%	71%	39%	70%	43%	67%	34%	72%	34%	72%	34%	72%	82%
Lower Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Upper Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Daily Geometric Mean	ppb	42.9	9.7	43.2	9.8	42.6	10.1	46.3	9.5	46.3	9.5	46.3	9.5	#N/A
Outflow Geo Mean - Composites	ppb	44.7	11.4	44.8	11.6	43.0	12.3	48.7	12.1	48.7	12.1	48.7	12.1	11.7
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Frequency Outflow Conc > 10 ppb	%	100%	68%	100%	70%	100%	75%	100%	76%	100%	76%	100%	76%	71%
Frequency Outflow Conc > 20 ppb	%	100%	6%	100%	7%	100%	8%	100%	5%	100%	5%	100%	5%	32%
Frequency Outflow Conc > 50 ppb	%	43%	0%	43%	0%	34%	0%	54%	0%	54%	0%	54%	0%	7%
Freq Outflow Volume > 10 ppb	%	100%	82%	100%	83%	100%	86%	100%	85%	100%	85%	100%	85%	84%
95th Percentile Outflow Conc	ppb	63.39	20.36	63.55	20.64	60.45	21.38	67.61	20.03	67.61	20.03	67.61	20.03	21
Mean Biomass P Storage	mg/m2	2125	681	2129	687	2021	672	2195	675	2195	675	2195	675	1340
Storage Increase / Net Removal	%	-1%	0%	0%	0%	0%	0%	-1%	0%	-1%	0%	-1%	0%	0%
Net Storage Turnover Rate	1/yr	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	17.6
Unit Area P Load	mg/m2-yr	1735	918	1727	928	1557	949	2019	886	2019	886	2019	886	808
Unit Area P Removal	mg/m2-yr	677	679	678	685	643	670	699	673	699	673	699	673	676
Mean Water Load	cm/d	5.9	5.0	5.8	5.0	5.3	5.4	6.8	4.5	6.8	4.5	6.8	4.5	2.7
Max Water Load	cm/d	27.2	23.3	27.1	23.5	24.5	25.8	31.7	20.8	31.7	20.8	31.7	20.8	12.7
Mean Depth	cm	58	56	58	56	49	51	47	47	47	47	47	47	53
Minimum Depth	cm	26.1	21.8	24.4	20.7	14.4	7.6	24.5	18.3	24.5	18.3	24.5	18.3	20
Maximum Depth	cm	98.9	92.3	98.7	90.9	82.8	82.8	74.1	74.1	74.1	74.1	74.1	74.1	87
Frequency Depth < 10 cm	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%
Flow/Width	m2/day	211	156	208	147	104	99	66	65	66	65	66	65	132.9
HRT Days	days	10.0	11.3	10.0	11.1	9.4	9.4	6.9	10.5	6.9	10.5	6.9	10.5	19.4
Mean Velocity	cm/sec	0.42	0.32	0.41	0.30	0.24	0.23	0.16	0.16	0.16	0.16	0.16	0.16	0.28
Seepage Outflow / Total Outflow	%	2%	1%	2%	0%	4%	0%	1%	0%	1%	0%	1%	0%	2%
Release 1 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Release 2 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
95th Percentile Outflow Volume	hm3/d	1.7	1.8	1.5	1.5	1.2	1.3	0.5	0.6	0.5	0.6	0.5	0.6	6.3
95th Percentile Outflow Load	kg/d	99.9	32.6	83.9	27.7	66.4	23.7	33.6	9.9	33.6	9.9	33.6	9.9	113.7
Simulated / Specified Mean Depth	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 1 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 2 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Outflow Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Range Check - Mean Depth	-		0.91		0.90		0.82		0.76		0.76		0.76	6
Range Check - Freq Depth < 10 cm	-						10.00							1
Range Check - Flow/Width	-	1.00	0.97		0.91		0.61		0.40		0.40		0.40	7
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-													0
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mass Balance Error	%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%	0.01%	0.02%	0.01%	0.02%	0.01%	0.02%
Warning or Error Messages		Cell# 1 Flow/Width out of calib. range for EMG_3: 211 vs. 26 - 210 m2/day						Cell# 10 Depth out of calib. range for SAV_3: 47 vs. 62 - 87 cm						14
		Cell# 2 Depth out of calib. range for SAV_3: 56 vs. 62 - 87 cm						Cell# 10 Flow/Width out of calib. range for SAV_3: 65 vs. 162 - 374 m2/day						
		Cell# 2 Flow/Width out of calib. range for SAV_3: 156 vs. 162 - 374 m2/day						Cell# 12 Depth out of calib. range for SAV_3: 47 vs. 62 - 87 cm						
		Cell# 4 Depth out of calib. range for SAV_3: 56 vs. 62 - 87 cm						Cell# 12 Flow/Width out of calib. range for SAV_3: 65 vs. 162 - 374 m2/day						
		Cell# 4 Flow/Width out of calib. range for SAV_3: 147 vs. 162 - 374 m2/day												
		Cell# 6 Depth out of calib. range for SAV_3: 51 vs. 62 - 87 cm												
		Cell# 6 Freq Z < 10 cm out of calib. range for SAV_3: 0 vs. 0 - 0 %												
		Cell# 6 Flow/Width out of calib. range for SAV_3: 99 vs. 162 - 374 m2/day												
		Cell# 8 Depth out of calib. range for SAV_3: 47 vs. 62 - 87 cm												
		Cell# 8 Flow/Width out of calib. range for SAV_3: 65 vs. 162 - 374 m2/day												

Input Variable	Units	Value	Case Description:
Design Case Name	-	STA34	STA-3/4 and the new EAASR STA
Input Series Name		TS_STA34	Inflows distributed uniformly based on area
Starting Date for Simulation	-	01/01/65	New STA hydraulics based on average of existing STA-3/4 hydraulics
Ending Date for Simulation	-	04/30/00	Lake Okeechobee deliveries at 100 ppb
Starting Date for Output	-	05/01/65	The effective treatment area of the new STA, in acres, is estimated at 1800
Integration Steps Per Day	-	4	Simulation Type:
Number of Iterations	-	3	
Output Averaging Interval	days	30	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	19.2	#N/A	#N/A
GM Outflow C (ppb)	14.6	#N/A	#N/A
Load Reduction %	77%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	15	

Cell Number -->	1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Vegetation Type -->	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3
Inflow Fraction	0.355842206		0.29637575		0.249641		0.032726		0.0327261		0.032726	
Downstream Cell Number	2		4		6		8		10		12.00	
Surface Area km2	12.30	14.12	10.29	11.71	9.61	8.92	0.97	1.46	0.97	1.46	0.97	1.46
Mean Width of Flow Path km	3.42	4.50	2.89	4.02	4.88	4.88	3.33	3.33	3.33	3.33	3.33	3.33
Number of Tanks in Series	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Depth for Releases cm												
Release 1 Series Name												
Release 2 Series Name												
Outflow Series Name												
Depth Series Name												
Outflow Control Depth cm	40	40	40	40	40	40	40	40	40	40	40	40
Outflow Weir Depth cm												
Outflow Coefficient - Exponent -	4	4	4	4	4	4	4	4	4	4	4	4
Outflow Coefficient - Intercept -	1	1	1	1	1	1	1	1	1	1	1	1
Bypass Depth cm												
Maximum Inflow hm3/day												
Maximum Outflow hm3/day												
Inflow Seepage Rate (cm/d) / cm												
Inflow Seepage Control Elev cm												
Inflow Seepage Conc ppb												
Outflow Seepage Rate (cm/d) / cm	0.0058	0.0029	0.0014		0.0038		0.0035		0.0035		0.0035	
Outflow Seepage Control Elev cm	16	40	-67		-64							
Max Outflow Seepage Conc ppb	20	20	20	20	20	20	20	20	20	20	20	20
Seepage Recycle to Cell Number -	1		3		5		7		9		11	
Seepage Recycle Fraction -	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Seepage Discharge Fraction -												
Initial Water Column Conc ppb	52	12	55	15	55	15	55	15	55	15	55	15
Initial P Storage Per Unit Area mg/m2	2400	615	2400	615	2400	615	2400	615	2400	615	2400	615
Initial Water Column Depth cm	60	60	60	60	60	60	60	60	60	60	60	60
C0 = Conc at 0 g/m2 P Storage ppb	3	3	3	3	3	3	3	3	3	3	3	3
C1 = Conc at 1 g/m2 P storage ppb	22	22	22	22	22	22	22	22	22	22	22	22
C2 = Conc at Half-Max Uptake ppb	300	300	300	300	300	300	300	300	300	300	300	300
K = Net Settling Rate at Steady State m/yr	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5
Z1 = Saturated Uptake Depth cm	40	40	40	40	40	40	40	40	40	40	40	40
Z2 = Lower Penalty Depth cm	100	100	100	100	100	100	100	100	100	100	100	100
Z3 = Upper Penalty Depth cm	200	200	200	200	200	200	200	200	200	200	200	200

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	32.38	33.80	35.13	36.40	37.82	39.15	41.44	42.83	44.13	45.40	46.68	47.95	47.95
Run Date	-	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06	10/10/06
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65
Starting Date for Output	-	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65
Ending Date	-	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00
Output Duration	days	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784
Cell Label		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	Total
Downstream Cell Label		1B	Outflow	2B	Outflow	3B	Outflow	4B	Outflow	5B	Outflow	6B	Outflow	-
Network Simulation Name	-	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NE
Simulation Type	-	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	0.97	1.46	0.97	1.46	0.97	1.46	74.23
Mean Rainfall	cm/yr	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	130.0
Mean ET	cm/yr	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.2
Cell Inflow Volume	hm3/yr	323.3	316.9	269.3	265.4	226.8	218.7	29.7	29.4	29.7	29.4	29.7	29.4	908.6
Cell Inflow Load	kg/yr	26221.2	17349.0	21839.2	14557.5	18395.4	11465.6	2411.5	1715.2	2411.5	1715.2	2411.5	1715.2	73690
Cell Inflow Conc	ppb	81	55	81	55	81	52	81	58	81	58	81	58	81.1
Treated Outflow Volume	hm3/yr	316.9	314.8	265.4	264.9	218.7	218.3	29.4	29.4	29.4	29.4	29.4	29.4	886.1
Treated Outflow Load	kg/yr	17349.0	5913.8	14557.5	5028.9	11465.6	4313.1	1715.2	572.8	1715.2	572.8	1715.2	572.8	16974
Treated FWM Outflow Conc	ppb	55	19	55	19	52	20	58	20	58	20	58	20	19.2
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Outflow Volume + Bypass	hm3/yr	316.9	314.8	265.4	264.9	218.7	218.3	29.4	29.4	29.4	29.4	29.4	29.4	886.1
Total Outflow Load + Bypass	kg/yr	17349.0	5913.8	14557.5	5028.9	11465.6	4313.1	1715.2	572.8	1715.2	572.8	1715.2	572.8	16974.2
Total FWM Outflow Conc	ppb	54.7	18.8	54.8	19.0	52.4	19.8	58.3	19.5	58.3	19.5	58.3	19.5	19.2
Bypass Load	kg/yr	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Bypass Load	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
Maximum Inflow	hm3/d	4.12	4.05	3.43	3.39	2.89	2.84	0.38	0.37	0.38	0.37	0.38	0.37	11.57
Maximum Outflow	hm3/d	4.05	4.04	3.39	3.39	2.84	2.83	0.37	0.37	0.37	0.37	0.37	0.37	11.38
Surface Load Reduction	kg/yr	8872	11435	7282	9529	6930	7153	696	1142	696	1142	696	1142	56716
Load Trapped in Sediments	kg/yr	8759	11859	7342	9922	6553	7452	707	1191	707	1191	707	1191	57582
Overall Load Reduction	%	34%	66%	33%	65%	38%	62%	29%	67%	29%	67%	29%	67%	77%
Lower Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Upper Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Daily Geometric Mean	ppb	46.7	12.2	46.9	12.3	46.5	12.7	49.6	11.8	49.6	11.8	49.6	11.8	#N/A
Outflow Geo Mean - Composites	ppb	48.7	14.2	48.9	14.4	47.1	15.3	52.6	15.9	52.6	15.9	52.6	15.9	14.6
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Frequency Outflow Conc > 10 ppb	%	100%	80%	100%	81%	100%	84%	100%	88%	100%	88%	100%	88%	81%
Frequency Outflow Conc > 20 ppb	%	100%	27%	100%	28%	100%	31%	100%	31%	100%	31%	100%	31%	54%
Frequency Outflow Conc > 50 ppb	%	54%	0%	55%	0%	51%	0%	62%	0%	62%	0%	62%	0%	29%
Freq Outflow Volume > 10 ppb	%	100%	91%	100%	91%	100%	93%	100%	94%	100%	94%	100%	94%	92%
95th Percentile Outflow Conc	ppb	68.10	26.15	68.29	26.45	65.52	27.25	72.49	25.76	72.49	25.76	72.49	25.76	27
Mean Biomass P Storage	mg/m2	2238	843	2242	850	2142	838	2285	820	2285	820	2285	820	1492
Storage Increase / Net Removal	%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	0%
Net Storage Turnover Rate	1/yr	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	18.2
Unit Area P Load	mg/m2-yr	2132	1229	2123	1243	1914	1285	2482	1177	2482	1177	2482	1177	993
Unit Area P Removal	mg/m2-yr	712	840	714	847	682	835	727	817	727	817	727	817	776
Mean Water Load	cm/d	7.2	6.1	7.2	6.2	6.5	6.7	8.4	5.5	8.4	5.5	8.4	5.5	3.4
Max Water Load	cm/d	33.5	28.7	33.3	28.9	30.1	31.8	39.0	25.7	39.0	25.7	39.0	25.7	15.6
Mean Depth	cm	61	59	61	58	51	53	42	41	42	41	42	41	56
Minimum Depth	cm	27.3	22.8	25.8	22.6	15.5	11.7	24.4	19.7	24.4	19.7	24.4	19.7	22
Maximum Depth	cm	104.2	97.3	104.0	95.7	87.2	87.2	57.8	57.8	57.8	57.8	57.8	57.8	93
Frequency Depth < 10 cm	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%
Flow/Width	m2/day	259	193	256	181	127	123	24	24	24	24	24	24	177.1
HRT Days	days	8.4	9.6	8.5	9.3	7.9	7.9	5.0	7.5	5.0	7.5	5.0	7.5	16.7
Mean Velocity	cm/sec	0.49	0.38	0.49	0.36	0.29	0.27	0.07	0.07	0.07	0.07	0.07	0.07	0.35
Seepage Outflow / Total Outflow	%	2%	0%	1%	0%	3%	0%	1%	0%	1%	0%	1%	0%	2%
Release 1 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Release 2 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
95th Percentile Outflow Volume	hm3/d	2.1	2.2	1.8	1.9	1.5	1.6	0.2	0.2	0.2	0.2	0.2	0.2	6.3
95th Percentile Outflow Load	kg/d	133.2	50.0	111.8	42.6	89.4	36.6	13.1	4.9	13.1	4.9	13.1	4.9	143.1
Simulated / Specified Mean Depth	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 1 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 2 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Outflow Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Range Check - Mean Depth	-		0.95		0.93		0.85		0.67		0.67		0.67	6
Range Check - Freq Depth < 10 cm	-													0
Range Check - Flow/Width	-	1.23		1.22			0.76	0.95	0.15	0.95	0.15	0.95	0.15	9
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-													0
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mass Balance Error	%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.02%
Warning or Error Messages														15

Cell# 1 Flow/Width out of calib. range for EMG_3: 259 vs. 26 - 210 m2/day
Cell# 2 Depth out of calib. range for SAV_3: 59 vs. 62 - 87 cm
Cell# 3 Flow/Width out of calib. range for EMG_3: 256 vs. 26 - 210 m2/day
Cell# 4 Depth out of calib. range for SAV_3: 58 vs. 62 - 87 cm
Cell# 6 Depth out of calib. range for SAV_3: 53 vs. 62 - 87 cm
Cell# 6 Flow/Width out of calib. range for SAV_3: 123 vs. 162 - 374 m2/day
Cell# 7 Flow/Width out of calib. range for EMG_3: 24 vs. 26 - 210 m2/day
Cell# 8 Depth out of calib. range for SAV_3: 41 vs. 62 - 87 cm
Cell# 8 Flow/Width out of calib. range for SAV_3: 24 vs. 162 - 374 m2/day
Cell# 9 Flow/Width out of calib. range for EMG_3: 24 vs. 26 - 210 m2/day
Cell# 10 Depth out of calib. range for SAV_3: 41 vs. 62 - 87 cm
Cell# 10 Flow/Width out of calib. range for SAV_3: 24 vs. 162 - 374 m2/day
Cell# 11 Flow/Width out of calib. range for EMG_3: 24 vs. 26 - 210 m2/day
Cell# 12 Depth out of calib. range for SAV_3: 41 vs. 62 - 87 cm
Cell# 12 Flow/Width out of calib. range for SAV_3: 24 vs. 162 - 374 m2/day

Input Variable	Units	Value	Case Description:
Design Case Name	-	A1	Compartment A-1
Input Series Name		TS_A1	15,200 acres (from A8)
Starting Date for Simulation	-	01/01/65	Inflow volumes, outflow volumes, and depths from SFWMM simulation
Ending Date for Simulation	-	04/30/00	Tested series compare DMSTA simulation with independent sfwmm simulation
Starting Date for Output	-	05/01/65	
Integration Steps Per Day	-	4	Simulation Type:
Number of Iterations	-	0	
Output Averaging Interval	days	30	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	105.7	#N/A	#N/A
GM Outflow C (ppb)	92.8	#N/A	#N/A
Load Reduction %	16%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	1	

Cell Number -->	1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	1											
Vegetation Type	RES_3											
Inflow Fraction	1											
Downstream Cell Number												
Surface Area	61.54											
Mean Width of Flow Pa	6.70											
Number of Tanks in Series	1.0											
Minimum Depth for Releases	15											
Release 1 Series Name	IRRIG											
Release 2 Series Name	TO_A2											
Outflow Series Name	TO_STA											
Depth Series Name	A1_DEPTH											
Outflow Control Depth												
Outflow Weir Depth												
Outflow Coefficient - Exponent	1.5											
Outflow Coefficient - Intercept	8											
Bypass Depth												
Maximum Inflow												
Maximum Outflow	9.05233											
Inflow Seepage Rate												
Inflow Seepage Control Elev												
Inflow Seepage Conc												
Outflow Seepage Rate	0.00081											
Outflow Seepage Control Elev	6											
Max Outflow Seepage Conc	100											
Seepage Recycle to Cell Number	1											
Seepage Recycle Fraction	0.75											
Seepage Discharge Fraction												
Initial Water Column Conc	105											
Initial P Storage Per Unit Area	525											
Initial Water Column Depth	150											
C0 = Conc at 0 g/m2 P Storage	3											
C1 = Conc at 1 g/m2 P storage	150											
C2 = Conc at Half-Max Uptake												
K = Net Settling Rate at Steady State	5.0											
Z1 = Saturated Uptake Depth	40											
Z2 = Lower Penalty Depth	100											
Z3 = Upper Penalty Depth	400											

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	1.47												1.47
Run Date	-	10/10/06												10/10/06
Starting Date for Simulation	-	01/01/65												01/01/65
Starting Date for Output	-	05/01/65												05/01/65
Ending Date	-	04/30/00												04/30/00
Output Duration	days	12784												12784
Cell Label		1												Total
Downstream Cell Label		Outflow												-
Network Simulation Name	-	EAASR_NET												EAASR_NET
Simulation Type	-	Base												Base
Surface Area	km2	61.54												61.54
Mean Rainfall	cm/yr	130.73												130.7
Mean ET	cm/yr	135.34												135.3
Cell Inflow Volume	hm3/yr	717.8												717.8
Cell Inflow Load	kg/yr	89362.2												89362
Cell Inflow Conc	ppb	125												124.5
Treated Outflow Volume	hm3/yr	578.3												578.3
Treated Outflow Load	kg/yr	61128.4												61128
Treated FWM Outflow Conc	ppb	106												105.7
Upper Confidence Limit	ppb	#N/A												#N/A
Lower Confidence Limit	ppb	#N/A												#N/A
Total Outflow Volume + Bypass	hm3/yr	701.7												701.7
Total Outflow Load + Bypass	kg/yr	75325.4												75325.4
Total FWM Outflow Conc	ppb	107.3												107.3
Bypass Load	kg/yr	0												0.0
Bypass Load	%	0%												0.0
Maximum Inflow	hm3/d	11.90												11.90
Maximum Outflow	hm3/d	9.01												9.01
Surface Load Reduction	kg/yr	28234												28234
Load Trapped in Sediments	kg/yr	13999												13999
Overall Load Reduction	%	16%												16%
Lower Confidence Limit	%	#N/A												#N/A
Upper Confidence Limit	%	#N/A												#N/A
Daily Geometric Mean	ppb	87.1												#N/A
Outflow Geo Mean - Composites	ppb	92.8												92.8
Upper Confidence Limit	ppb	#N/A												#N/A
Lower Confidence Limit	ppb	#N/A												#N/A
Frequency Outflow Conc > 10 ppb	%	100%												100%
Frequency Outflow Conc > 20 ppb	%	100%												100%
Frequency Outflow Conc > 50 ppb	%	83%												100%
Freq Outflow Volume > 10 ppb	%	82%												82%
95th Percentile Outflow Conc	ppb	253.89												254
Mean Biomass P Storage	mg/m2	561												561
Storage Increase / Net Removal	%	1%												1%
Net Storage Turnover Rate	1/yr	14.2												14.2
Unit Area P Load	mg/m2-yr	1452												1452
Unit Area P Removal	mg/m2-yr	227												227
Mean Water Load	cm/d	3.2												3.2
Max Water Load	cm/d	19.3												19.3
Mean Depth	cm	220												220
Minimum Depth	cm	1.0												1
Maximum Depth	cm	379.5												379
Frequency Depth < 10 cm	%	6%												5.6%
Flow/Width	m2/day	293												293.3
HRT Days	days	68.8												68.8
Mean Velocity	cm/sec	0.15												0.15
Seepage Outflow / Total Outflow	%	1%												2%
Release 1 Outflow Volume	hm3/yr	0.00												0.0
Release 2 Outflow Volume	hm3/yr	123.43												123.4
95th Percentile Outflow Volume	hm3/d	4.8												4.8
95th Percentile Outflow Load	kg/d	559.7												559.7
Simulated / Specified Mean Depth	%	99%												1.0
Release 1 Demand Met	%	#N/A												#N/A
Release 2 Demand Met	%	98%												1.0
Outflow Demand Met	%	100%												1.0
Range Check - Mean Depth	-													0
Range Check - Freq Depth < 10 cm	-	10.00												1
Range Check - Flow/Width	-													0
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-													0
Water Balance Error	%	0.00%												0.00%
Mass Balance Error	%	0.00%												0.00%
Warning or Error Messages		Cell# 1 Freq Z < 10 cm out of calib. range for RES_3: 0 vs. 0 - 0 %												1

Input Variable	Units	Value	Case Description:
Design Case Name	-	A2	Compartment A-2
Input Series Name	-	TS_A2	13,775 acres of effective area
Starting Date for Simulation	-	01/01/65	Inflow volumes, outflow volumes, and depths from SFWMM simulation
Ending Date for Simulation	-	04/30/00	Tested series compare DMSTA simulation with independent sfwmm simulation
Starting Date for Output	-	05/01/65	
Integration Steps Per Day	-	4	Simulation Type:
Number of Iterations	-	0	
Output Averaging Interval	days	30	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	71.6	#N/A	#N/A
GM Outflow C (ppb)	77.1	#N/A	#N/A
Load Reduction %	22%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	1	

Cell Number -->	1	2	3	4	5	6	7	8	9	10	11	12
Cell Label -	RES_A2											
Vegetation Type -->	RES_3											
Inflow Fraction -	1											
Downstream Cell Number -												
Surface Area km2	55.77											
Mean Width of Flow Pa km	10.00											
Number of Tanks in Series -	1.0											
Minimum Depth for Releases cm	15											
Release 1 Series Name	IRRIG											
Release 2 Series Name												
Outflow Series Name	TO_A1											
Depth Series Name	A2_DEPTH											
Outflow Control Depth cm												
Outflow Weir Depth cm												
Outflow Coefficient - Exponent -	1.5											
Outflow Coefficient - Intercept -	8											
Bypass Depth cm												
Maximum Inflow hm3/day												
Maximum Outflow hm3/day	7.829											
Inflow Seepage Rate (cm/d) / cm												
Inflow Seepage Control Elev cm												
Inflow Seepage Conc ppb												
Outflow Seepage Rate (cm/d) / cm	0.000778											
Outflow Seepage Control Elev cm	6											
Max Outflow Seepage Conc ppb	100											
Seepage Recycle to Cell Number -	1											
Seepage Recycle Fraction -	0.75											
Seepage Discharge Fraction -												
Initial Water Column Conc ppb	90											
Initial P Storage Per Unit Area mg/m2	375											
Initial Water Column Depth cm	200											
C0 = Conc at 0 g/m2 P Storage ppb	3											
C1 = Conc at 1 g/m2 P storage ppb	150											
C2 = Conc at Half-Max Uptake ppb												
K = Net Settling Rate at Steady State m/yr	5.0											
Z1 = Saturated Uptake Depth cm	40											
Z2 = Lower Penalty Depth cm	100											
Z3 = Upper Penalty Depth cm	400											

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	1.56												1.56
Run Date	-	10/10/06												10/10/06
Starting Date for Simulation	-	01/01/65												01/01/65
Starting Date for Output	-	05/01/65												05/01/65
Ending Date	-	04/30/00												04/30/00
Output Duration	days	12784												12784
Cell Label		RES_A2												Total
Downstream Cell Label		Outflow												-
Network Simulation Name	-	EAASR_NET												EAASR_NET
Simulation Type	-	Base												Base
Surface Area	km2	55.77												55.77
Mean Rainfall	cm/yr	128.19												128.2
Mean ET	cm/yr	137.71												137.7
Cell Inflow Volume	hm3/yr	460.7												460.7
Cell Inflow Load	kg/yr	42486.9												42487
Cell Inflow Conc	ppb	92												92.2
Treated Outflow Volume	hm3/yr	232.9												232.9
Treated Outflow Load	kg/yr	16674.4												16674
Treated FWM Outflow Conc	ppb	72												71.6
Upper Confidence Limit	ppb	#N/A												#N/A
Lower Confidence Limit	ppb	#N/A												#N/A
Total Outflow Volume + Bypass	hm3/yr	441.8												441.8
Total Outflow Load + Bypass	kg/yr	33038.7												33038.7
Total FWM Outflow Conc	ppb	74.8												74.8
Bypass Load	kg/yr	0												0.0
Bypass Load	%	0%												0.0
Maximum Inflow	hm3/d	7.58												7.58
Maximum Outflow	hm3/d	4.47												4.47
Surface Load Reduction	kg/yr	25812												25812
Load Trapped in Sediments	kg/yr	10025												10025
Overall Load Reduction	%	22%												22%
Lower Confidence Limit	%	#N/A												#N/A
Upper Confidence Limit	%	#N/A												#N/A
Daily Geometric Mean	ppb	77.5												#N/A
Outflow Geo Mean - Composites	ppb	77.1												77.1
Upper Confidence Limit	ppb	#N/A												#N/A
Lower Confidence Limit	ppb	#N/A												#N/A
Frequency Outflow Conc > 10 ppb	%	100%												100%
Frequency Outflow Conc > 20 ppb	%	100%												100%
Frequency Outflow Conc > 50 ppb	%	97%												100%
Freq Outflow Volume > 10 ppb	%	53%												53%
95th Percentile Outflow Conc	ppb	99.91												100
Mean Biomass P Storage	mg/m2	472												472
Storage Increase / Net Removal	%	1%												1%
Net Storage Turnover Rate	1/yr	13.3												13.3
Unit Area P Load	mg/m2-yr	762												762
Unit Area P Removal	mg/m2-yr	180												180
Mean Water Load	cm/d	2.3												2.3
Max Water Load	cm/d	13.6												13.6
Mean Depth	cm	258												258
Minimum Depth	cm	1.0												1
Maximum Depth	cm	430.6												431
Frequency Depth < 10 cm	%	3%												2.6%
Flow/Width	m2/day	126												126.1
HRT Days	days	113.9												113.9
Mean Velocity	cm/sec	0.06												0.06
Seepage Outflow / Total Outflow	%	2%												4%
Release 1 Outflow Volume	hm3/yr	208.92												208.9
Release 2 Outflow Volume	hm3/yr	0.00												0.0
95th Percentile Outflow Volume	hm3/d	2.3												2.3
95th Percentile Outflow Load	kg/d	157.0												157.0
Simulated / Specified Mean Depth	%	99%												1.0
Release 1 Demand Met	%	97%												1.0
Release 2 Demand Met	%	#N/A												#N/A
Outflow Demand Met	%	100%												1.0
Range Check - Mean Depth	-													0
Range Check - Freq Depth < 10 cm	-	10.00												1
Range Check - Flow/Width	-													0
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-													0
Water Balance Error	%	0.00%												0.00%
Mass Balance Error	%	0.00%												0.00%
Warning or Error Messages		Cell# 1 Freq Z < 10 cm out of calib. range for RES_3: 0 vs. 0 - 0 %												1

Input Variable	Units	Value	Case Description:
Design Case Name	-	STA34	STA-3/4 and the new EAASR STA
Input Series Name		TS_STA34	Inflows distributed uniformly based on area
Starting Date for Simulation	-	01/01/65	New STA hydraulics based on average of existing STA-3/4 hydraulics
Ending Date for Simulation	-	04/30/00	Lake Okeechobee deliveries at 150 ppb
Starting Date for Output	-	05/01/65	The effective treatment area of the new STA, in acres, is estimated at 15,300
Integration Steps Per Day	-	4	
Number of Iterations	-	3	
Output Averaging Interval	days	30	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Simulation Type:

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	11.7	#N/A	#N/A
GM Outflow C (ppb)	8.9	#N/A	#N/A
Load Reduction %	89%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	19	

Cell Number -->		1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Vegetation Type	-->	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3
Inflow Fraction	-	0.204938462		0.170690237		0.143774		0.160206		0.1602061		0.160206	
Downstream Cell Number	-	2		4		6		8		10		12.00	
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	8.26	12.39	8.26	12.39	8.26	12.39
Mean Width of Flow Path	km	3.42	4.50	2.89	4.02	4.88	4.88	3.33	3.33	3.33	3.33	3.33	3.33
Number of Tanks in Series	-	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Depth for Releases	cm												
Release 1 Series Name													
Release 2 Series Name													
Outflow Series Name													
Depth Series Name													
Outflow Control Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Outflow Weir Depth	cm												
Outflow Coefficient - Exponent	-	4	4	4	4	4	4	4	4	4	4	4	4
Outflow Coefficient - Intercept	-	1	1	1	1	1	1	1	1	1	1	1	1
Bypass Depth	cm												
Maximum Inflow	hm3/day												
Maximum Outflow	hm3/day												
Inflow Seepage Rate	(cm/d) / cm												
Inflow Seepage Control Elev	cm												
Inflow Seepage Conc	ppb												
Outflow Seepage Rate	(cm/d) / cm	0.0058	0.0029	0.0014		0.0038		0.0035		0.0035		0.0035	
Outflow Seepage Control Elev	cm	16	40	-67		-64							
Max Outflow Seepage Conc	ppb	20	20	20	20	20	20	20	20	20	20	20	20
Seepage Recycle to Cell Number	-	1		3		5		7		9		11	
Seepage Recycle Fraction	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Seepage Discharge Fraction	-												
Initial Water Column Conc	ppb	52	12	55	15	55	15	55	15	55	15	55	15
Initial P Storage Per Unit Area	mg/m2	2400	615	2400	615	2400	615	2400	615	2400	615	2400	615
Initial Water Column Depth	cm	60	60	60	60	60	60	60	60	60	60	60	60
C0 = Conc at 0 g/m2 P Storage	ppb	3	3	3	3	3	3	3	3	3	3	3	3
C1 = Conc at 1 g/m2 P storage	ppb	22	22	22	22	22	22	22	22	22	22	22	22
C2 = Conc at Half-Max Uptake	ppb	300	300	300	300	300	300	300	300	300	300	300	300
K = Net Settling Rate at Steady State	m/yr	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5
Z1 = Saturated Uptake Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Z2 = Lower Penalty Depth	cm	100	100	100	100	100	100	100	100	100	100	100	100
Z3 = Upper Penalty Depth	cm	200	200	200	200	200	200	200	200	200	200	200	200

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	36.91	38.66	40.00	43.05	44.24	45.68	47.04	48.68	50.07	51.66	53.04	54.57	54.57
Run Date	-	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65
Starting Date for Output	-	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65
Ending Date	-	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00
Output Duration	days	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784
Cell Label		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	Total
Downstream Cell Label		1B	Outflow	2B	Outflow	3B	Outflow	4B	Outflow	5B	Outflow	6B	Outflow	-
Network Simulation Name	-	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET
Simulation Type	-	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	8.26	12.39	8.26	12.39	8.26	12.39	128.89
Mean Rainfall	cm/yr	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	130.0
Mean ET	cm/yr	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.2
Cell Inflow Volume	hm3/yr	186.2	180.6	155.1	151.4	130.6	122.8	145.6	142.4	145.6	142.4	145.6	142.4	908.6
Cell Inflow Load	kg/yr	19151.7	9716.6	15951.1	8160.5	13435.8	6158.3	14971.4	8375.3	14971.4	8375.3	14971.4	8375.3	93453
Cell Inflow Conc	ppb	103	54	103	54	103	50	103	59	103	59	103	59	102.9
Treated Outflow Volume	hm3/yr	180.6	178.9	151.4	150.9	122.8	122.5	142.4	141.9	142.4	141.9	142.4	141.9	878.0
Treated Outflow Load	kg/yr	9716.6	2093.1	8160.5	1786.9	6158.3	1515.6	8375.3	1614.6	8375.3	1614.6	8375.3	1614.6	10240
Treated FWM Outflow Conc	ppb	54	12	54	12	50	12	59	11	59	11	59	11	11.7
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Outflow Volume + Bypass	hm3/yr	180.6	178.9	151.4	150.9	122.8	122.5	142.4	141.9	142.4	141.9	142.4	141.9	878.0
Total Outflow Load + Bypass	kg/yr	9716.6	2093.1	8160.5	1786.9	6158.3	1515.6	8375.3	1614.6	8375.3	1614.6	8375.3	1614.6	10239.6
Total FWM Outflow Conc	ppb	53.8	11.7	53.9	11.8	50.1	12.4	58.8	11.4	58.8	11.4	58.8	11.4	11.7
Bypass Load	kg/yr	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Bypass Load	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
Maximum Inflow	hm3/d	2.37	2.32	1.98	1.95	1.66	1.62	1.85	1.82	1.85	1.82	1.85	1.82	11.57
Maximum Outflow	hm3/d	2.32	2.31	1.95	1.94	1.62	1.61	1.82	1.82	1.82	1.82	1.82	1.82	11.31
Surface Load Reduction	kg/yr	9435	7624	7791	6374	7278	4643	6596	6761	6596	6761	6596	6761	83213
Load Trapped in Sediments	kg/yr	9358	8076	7840	6769	6847	4944	6601	7177	6601	7177	6601	7177	85168
Overall Load Reduction	%	49%	78%	49%	78%	54%	75%	44%	81%	44%	81%	44%	81%	89%
Lower Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Upper Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Daily Geometric Mean	ppb	46.0	7.7	46.3	7.8	45.6	7.9	50.6	7.4	50.6	7.4	50.6	7.4	#N/A
Outflow Geo Mean - Composites	ppb	47.5	8.9	47.6	9.1	44.8	9.7	52.0	8.7	52.0	8.7	52.0	8.7	8.9
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Frequency Outflow Conc > 10 ppb	%	100%	44%	100%	46%	100%	53%	100%	41%	100%	41%	100%	41%	43%
Frequency Outflow Conc > 20 ppb	%	100%	1%	100%	1%	100%	1%	100%	0%	100%	0%	100%	0%	8%
Frequency Outflow Conc > 50 ppb	%	54%	0%	54%	0%	42%	0%	59%	0%	59%	0%	59%	0%	1%
Freq Outflow Volume > 10 ppb	%	100%	63%	100%	64%	100%	69%	100%	61%	100%	61%	100%	61%	63%
95th Percentile Outflow Conc	ppb	73.89	16.50	74.12	16.72	69.61	17.09	79.56	15.86	79.56	15.86	79.56	15.86	16
Mean Biomass P Storage	mg/m2	2391	574	2394	580	2239	556	2511	581	2511	581	2511	581	1391
Storage Increase / Net Removal	%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	0%
Net Storage Turnover Rate	1/yr	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	16.6
Unit Area P Load	mg/m2-yr	1557	688	1551	697	1398	690	1813	676	1813	676	1813	676	725
Unit Area P Removal	mg/m2-yr	761	572	762	578	712	554	799	579	799	579	799	579	661
Mean Water Load	cm/d	4.1	3.5	4.1	3.5	3.7	3.8	4.8	3.1	4.8	3.1	4.8	3.1	1.9
Max Water Load	cm/d	19.3	16.5	19.2	16.6	17.3	18.2	22.4	14.7	22.4	14.7	22.4	14.7	9.0
Mean Depth	cm	55	53	55	52	46	47	52	53	52	53	52	53	52
Minimum Depth	cm	24.4	13.1	22.5	11.3	5.7	6.5	24.3	13.8	24.3	13.8	24.3	13.8	16
Maximum Depth	cm	90.7	84.6	90.5	83.3	75.8	75.8	85.9	85.9	85.9	85.9	85.9	85.9	85
Frequency Depth < 10 cm	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%
Flow/Width	m2/day	149	110	147	103	73	69	120	117	120	117	120	117	114.3
HRT Days	days	13.2	15.0	13.2	14.7	12.4	12.6	10.8	16.9	10.8	16.9	10.8	16.9	27.0
Mean Velocity	cm/sec	0.31	0.24	0.31	0.23	0.18	0.17	0.27	0.25	0.27	0.25	0.27	0.25	0.25
Seepage Outflow / Total Outflow	%	3%	1%	2%	0%	6%	0%	2%	0%	2%	0%	2%	0%	3%
Release 1 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Release 2 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
95th Percentile Outflow Volume	hm3/d	1.3	1.3	1.0	1.1	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	6.2
95th Percentile Outflow Load	kg/d	76.7	18.1	64.5	15.4	49.8	13.2	66.6	13.9	66.6	13.9	66.6	13.9	88.5
Simulated / Specified Mean Depth	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 1 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 2 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Outflow Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Range Check - Mean Depth	-		0.85		0.84		0.76		0.86		0.86		0.86	6
Range Check - Freq Depth < 10 cm	-						10.00							1
Range Check - Flow/Width	-		0.68		0.64		0.43		0.72		0.72		0.72	6
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-		0.79		0.80		0.83		0.77		0.77		0.77	6
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mass Balance Error	%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%
Warning or Error Messages		Cell# 2 Depth out of calib. range for SAV_3: 53 vs. 62 - 87 cm						Cell# 8 Depth out of calib. range for SAV_3: 53 vs. 62 - 87 cm						19
		Cell# 2 Flow/Width out of calib. range for SAV_3: 110 vs. 162 - 374 m2/day						Cell# 8 Flow/Width out of calib. range for SAV_3: 117 vs. 162 - 374 m2/day						
		Cell# 2 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb						Cell# 8 Outflow Conc out of calib. range for SAV_3: 11 vs. 15 - 153 ppb						
		Cell# 4 Depth out of calib. range for SAV_3: 52 vs. 62 - 87 cm						Cell# 10 Depth out of calib. range for SAV_3: 53 vs. 62 - 87 cm						
		Cell# 4 Flow/Width out of calib. range for SAV_3: 103 vs. 162 - 374 m2/day						Cell# 10 Flow/Width out of calib. range for SAV_3: 117 vs. 162 - 374 m2/day						
		Cell# 4 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb						Cell# 10 Outflow Conc out of calib. range for SAV_3: 11 vs. 15 - 153 ppb						
		Cell# 6 Depth out of calib. range for SAV_3: 47 vs. 62 - 87 cm						Cell# 12 Depth out of calib. range for SAV_3: 53 vs. 62 - 87 cm						
		Cell# 6 Freq Z < 10 cm out of calib. range for SAV_3: 0 vs. 0 - 0 %						Cell# 12 Flow/Width out of calib. range for SAV_3: 117 vs. 162 - 374 m2/day						
		Cell# 6 Flow/Width out of calib. range for SAV_3: 69 vs. 162 - 374 m2/day						Cell# 12 Outflow Conc out of calib. range for SAV_3: 11 vs. 15 - 153 ppb						
		Cell# 6 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb												

Input Variable	Units	Value	Case Description:
Design Case Name	-	STA34	STA-3/4 and the new EAASR STA
Input Series Name		TS_STA34	Inflows distributed uniformly based on area
Starting Date for Simulation	-	01/01/65	New STA hydraulics based on average of existing STA-3/4 hydraulics
Ending Date for Simulation	-	04/30/00	Lake Okeechobee deliveries at 150 ppb
Starting Date for Output	-	05/01/65	The effective treatment area of the new STA, in acres, is estimated at 9,900
Integration Steps Per Day	-	4	Simulation Type:
Number of Iterations	-	3	
Output Averaging Interval	days	30	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	14.8	#N/A	#N/A
GM Outflow C (ppb)	11.3	#N/A	#N/A
Load Reduction %	86%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	17	

Cell Number -->		1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Vegetation Type	-->	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3
Inflow Fraction	-	0.246803775		0.205559242		0.173145		0.124839		0.1248392		0.124839	
Downstream Cell Number	-	2		4		6		8		10		12.00	
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	5.34	8.02	5.34	8.02	5.34	8.02
Mean Width of Flow Path	km	3.42	4.50	2.89	4.02	4.88	4.88	3.33	3.33	3.33	3.33	3.33	3.33
Number of Tanks in Series	-	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Depth for Releases	cm												
Release 1 Series Name													
Release 2 Series Name													
Outflow Series Name													
Depth Series Name													
Outflow Control Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Outflow Weir Depth	cm												
Outflow Coefficient - Exponent	-	4	4	4	4	4	4	4	4	4	4	4	4
Outflow Coefficient - Intercept	-	1	1	1	1	1	1	1	1	1	1	1	1
Bypass Depth	cm												
Maximum Inflow	hm3/day												
Maximum Outflow	hm3/day												
Inflow Seepage Rate	(cm/d) / cm												
Inflow Seepage Control Elev	cm												
Inflow Seepage Conc	ppb												
Outflow Seepage Rate	(cm/d) / cm	0.0058	0.0029	0.0014		0.0038		0.0035		0.0035		0.0035	
Outflow Seepage Control Elev	cm	16	40	-67		-64							
Max Outflow Seepage Conc	ppb	20	20	20	20	20	20	20	20	20	20	20	20
Seepage Recycle to Cell Number	-	1		3		5		7		9		11	
Seepage Recycle Fraction	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Seepage Discharge Fraction	-												
Initial Water Column Conc	ppb	52	12	55	15	55	15	55	15	55	15	55	15
Initial P Storage Per Unit Area	mg/m2	2400	615	2400	615	2400	615	2400	615	2400	615	2400	615
Initial Water Column Depth	cm	60	60	60	60	60	60	60	60	60	60	60	60
C0 = Conc at 0 g/m2 P Storage	ppb	3	3	3	3	3	3	3	3	3	3	3	3
C1 = Conc at 1 g/m2 P storage	ppb	22	22	22	22	22	22	22	22	22	22	22	22
C2 = Conc at Half-Max Uptake	ppb	300	300	300	300	300	300	300	300	300	300	300	300
K = Net Settling Rate at Steady State	m/yr	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5
Z1 = Saturated Uptake Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Z2 = Lower Penalty Depth	cm	100	100	100	100	100	100	100	100	100	100	100	100
Z3 = Upper Penalty Depth	cm	200	200	200	200	200	200	200	200	200	200	200	200

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	34.22	35.69	37.42	38.81	40.56	43.19	44.67	45.80	47.27	48.71	50.02	51.57	51.57
Run Date	-	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65
Starting Date for Output	-	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65
Ending Date	-	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00
Output Duration	days	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784
Cell Label		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	Total
Downstream Cell Label		1B	Outflow	2B	Outflow	3B	Outflow	4B	Outflow	5B	Outflow	6B	Outflow	-
Network Simulation Name	-	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET
Simulation Type	-	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	5.34	8.02	5.34	8.02	5.34	8.02	107.02
Mean Rainfall	cm/yr	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	130.0
Mean ET	cm/yr	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.2
Cell Inflow Volume	hm3/yr	224.2	218.4	186.8	183.0	157.3	149.4	113.4	111.5	113.4	111.5	113.4	111.5	908.6
Cell Inflow Load	kg/yr	23064.0	13000.5	19209.7	10918.2	16180.5	8365.0	11666.3	7182.5	11666.3	7182.5	11666.3	7182.5	93453
Cell Inflow Conc	ppb	103	60	103	60	103	56	103	64	103	64	103	64	102.9
Treated Outflow Volume	hm3/yr	218.4	216.6	183.0	182.5	149.4	149.0	111.5	111.1	111.5	111.1	111.5	111.1	881.6
Treated Outflow Load	kg/yr	13000.5	3179.3	10918.2	2713.3	8365.0	2311.4	7182.5	1609.6	7182.5	1609.6	7182.5	1609.6	13033
Treated FWM Outflow Conc	ppb	60	15	60	15	56	16	64	14	64	14	64	14	14.8
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Outflow Volume + Bypass	hm3/yr	218.4	216.6	183.0	182.5	149.4	149.0	111.5	111.1	111.5	111.1	111.5	111.1	881.6
Total Outflow Load + Bypass	kg/yr	13000.5	3179.3	10918.2	2713.3	8365.0	2311.4	7182.5	1609.6	7182.5	1609.6	7182.5	1609.6	13032.7
Total FWM Outflow Conc	ppb	59.5	14.7	59.6	14.9	56.0	15.5	64.4	14.5	64.4	14.5	64.4	14.5	14.8
Bypass Load	kg/yr	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Bypass Load	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
Maximum Inflow	hm3/d	2.86	2.80	2.38	2.35	2.00	1.96	1.44	1.42	1.44	1.42	1.44	1.42	11.57
Maximum Outflow	hm3/d	2.80	2.79	2.35	2.34	1.96	1.95	1.42	1.42	1.42	1.42	1.42	1.42	11.34
Surface Load Reduction	kg/yr	10064	9821	8291	8205	7816	6054	4484	5573	4484	5573	4484	5573	80420
Load Trapped in Sediments	kg/yr	9926	10263	8318	8601	7331	6355	4489	5843	4489	5843	4489	5843	81789
Overall Load Reduction	%	44%	76%	43%	75%	48%	72%	38%	78%	38%	78%	38%	78%	86%
Lower Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Upper Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Daily Geometric Mean	ppb	51.0	9.5	51.3	9.6	50.5	9.9	55.6	9.3	55.6	9.3	55.6	9.3	#N/A
Outflow Geo Mean - Composites	ppb	52.5	11.1	52.7	11.3	50.0	12.0	57.4	11.2	57.4	11.2	57.4	11.2	11.3
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Frequency Outflow Conc > 10 ppb	%	100%	63%	100%	64%	100%	73%	100%	66%	100%	66%	100%	66%	66%
Frequency Outflow Conc > 20 ppb	%	100%	7%	100%	8%	100%	9%	100%	6%	100%	6%	100%	6%	27%
Frequency Outflow Conc > 50 ppb	%	59%	0%	60%	0%	57%	0%	72%	0%	72%	0%	72%	0%	7%
Freq Outflow Volume > 10 ppb	%	100%	80%	100%	80%	100%	83%	100%	80%	100%	80%	100%	80%	81%
95th Percentile Outflow Conc	ppb	80.36	21.19	80.56	21.47	76.58	22.23	87.00	20.45	87.00	20.45	87.00	20.45	21
Mean Biomass P Storage	mg/m2	2536	730	2540	737	2397	715	2638	731	2638	731	2638	731	1547
Storage Increase / Net Removal	%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	0%
Net Storage Turnover Rate	1/yr	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	17.3
Unit Area P Load	mg/m2-yr	1875	921	1867	932	1684	938	2183	896	2183	896	2183	896	873
Unit Area P Removal	mg/m2-yr	807	727	809	734	763	712	840	729	840	729	840	729	764
Mean Water Load	cm/d	5.0	4.2	5.0	4.3	4.5	4.6	5.8	3.8	5.8	3.8	5.8	3.8	2.3
Max Water Load	cm/d	23.2	19.9	23.1	20.0	20.8	21.9	27.0	17.8	27.0	17.8	27.0	17.8	10.8
Mean Depth	cm	57	55	57	54	48	49	50	50	50	50	50	50	52
Minimum Depth	cm	25.3	17.8	23.4	16.0	10.7	7.5	24.4	15.8	24.4	15.8	24.4	15.8	18
Maximum Depth	cm	95.0	88.7	94.9	87.3	79.5	79.5	80.7	80.7	80.7	80.7	80.7	80.7	85
Frequency Depth < 10 cm	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%
Flow/Width	m2/day	180	133	177	125	88	84	93	92	93	92	93	92	118.3
HRT Days	days	11.4	12.9	11.4	12.6	10.7	10.7	8.5	13.2	8.5	13.2	8.5	13.2	22.5
Mean Velocity	cm/sec	0.37	0.28	0.36	0.27	0.21	0.20	0.22	0.21	0.22	0.21	0.22	0.21	0.26
Seepage Outflow / Total Outflow	%	2%	1%	2%	0%	5%	0%	1%	0%	1%	0%	1%	0%	2%
Release 1 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Release 2 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
95th Percentile Outflow Volume	hm3/d	1.5	1.5	1.2	1.3	1.0	1.1	0.8	0.8	0.8	0.8	0.8	0.8	6.3
95th Percentile Outflow Load	kg/d	103.1	27.8	86.7	23.8	67.2	20.6	56.6	13.9	56.6	13.9	56.6	13.9	114.1
Simulated / Specified Mean Depth	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 1 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 2 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Outflow Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Range Check - Mean Depth	-		0.88		0.87		0.79		0.81		0.81		0.81	6
Range Check - Freq Depth < 10 cm	-						10.00							1
Range Check - Flow/Width	-		0.82		0.77		0.52		0.57		0.57		0.57	6
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-		0.99						0.98		0.98		0.98	4
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mass Balance Error	%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Warning or Error Messages		Cell# 2 Depth out of calib. range for SAV_3: 55 vs. 62 - 87 cm Cell# 2 Flow/Width out of calib. range for SAV_3: 133 vs. 162 - 374 m2/day Cell# 2 Outflow Conc out of calib. range for SAV_3: 15 vs. 15 - 153 ppb Cell# 4 Depth out of calib. range for SAV_3: 54 vs. 62 - 87 cm Cell# 4 Flow/Width out of calib. range for SAV_3: 125 vs. 162 - 374 m2/day Cell# 6 Depth out of calib. range for SAV_3: 49 vs. 62 - 87 cm Cell# 6 Freq Z < 10 cm out of calib. range for SAV_3: 0 vs. 0 - 0 % Cell# 6 Flow/Width out of calib. range for SAV_3: 84 vs. 162 - 374 m2/day Cell# 8 Depth out of calib. range for SAV_3: 50 vs. 62 - 87 cm Cell# 8 Flow/Width out of calib. range for SAV_3: 92 vs. 162 - 374 m2/day							Cell# 8 Outflow Conc out of calib. range for SAV_3: 14 vs. 15 - 153 ppb Cell# 10 Depth out of calib. range for SAV_3: 50 vs. 62 - 87 cm Cell# 10 Flow/Width out of calib. range for SAV_3: 92 vs. 162 - 374 m2/day Cell# 10 Outflow Conc out of calib. range for SAV_3: 14 vs. 15 - 153 ppb Cell# 12 Depth out of calib. range for SAV_3: 50 vs. 62 - 87 cm Cell# 12 Flow/Width out of calib. range for SAV_3: 92 vs. 162 - 374 m2/day Cell# 12 Outflow Conc out of calib. range for SAV_3: 14 vs. 15 - 153 ppb		17

Input Variable	Units	Value	Case Description:
Design Case Name	-	STA34	STA-3/4 and the new EAASR STA
Input Series Name		TS_STA34	Inflows distributed uniformly based on area
Starting Date for Simulation	-	01/01/65	New STA hydraulics based on average of existing STA-3/4 hydraulics
Ending Date for Simulation	-	04/30/00	Lake Okeechobee deliveries at 150 ppb
Starting Date for Output	-	05/01/65	The effective treatment area of the new STA, in acres, is estimated at 5,100
Integration Steps Per Day	-	4	Simulation Type:
Number of Iterations	-	3	
Output Averaging Interval	days	30	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	19.1	#N/A	#N/A
GM Outflow C (ppb)	14.5	#N/A	#N/A
Load Reduction %	82%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	14	

Cell Number -->		1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Vegetation Type	-->	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3
Inflow Fraction	-	0.301562864		0.251167283		0.211561		0.07858		0.07858		0.07858	
Downstream Cell Number	-	2		4		6		8		10		12.00	
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	2.75	4.13	2.75	4.13	2.75	4.13
Mean Width of Flow Path	km	3.42	4.50	2.89	4.02	4.88	4.88	3.33	3.33	3.33	3.33	3.33	3.33
Number of Tanks in Series	-	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Depth for Releases	cm												
Release 1 Series Name													
Release 2 Series Name													
Outflow Series Name													
Depth Series Name													
Outflow Control Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Outflow Weir Depth	cm												
Outflow Coefficient - Exponent	-	4	4	4	4	4	4	4	4	4	4	4	4
Outflow Coefficient - Intercept	-	1	1	1	1	1	1	1	1	1	1	1	1
Bypass Depth	cm												
Maximum Inflow	hm3/day												
Maximum Outflow	hm3/day												
Inflow Seepage Rate	(cm/d) / cm												
Inflow Seepage Control Elev	cm												
Inflow Seepage Conc	ppb												
Outflow Seepage Rate	(cm/d) / cm	0.0058	0.0029	0.0014		0.0038		0.0035		0.0035		0.0035	
Outflow Seepage Control Elev	cm	16	40	-67		-64							
Max Outflow Seepage Conc	ppb	20	20	20	20	20	20	20	20	20	20	20	20
Seepage Recycle to Cell Number	-	1		3		5		7		9		11	
Seepage Recycle Fraction	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Seepage Discharge Fraction	-												
Initial Water Column Conc	ppb	52	12	55	15	55	15	55	15	55	15	55	15
Initial P Storage Per Unit Area	mg/m2	2400	615	2400	615	2400	615	2400	615	2400	615	2400	615
Initial Water Column Depth	cm	60	60	60	60	60	60	60	60	60	60	60	60
C0 = Conc at 0 g/m2 P Storage	ppb	3	3	3	3	3	3	3	3	3	3	3	3
C1 = Conc at 1 g/m2 P storage	ppb	22	22	22	22	22	22	22	22	22	22	22	22
C2 = Conc at Half-Max Uptake	ppb	300	300	300	300	300	300	300	300	300	300	300	300
K = Net Settling Rate at Steady State	m/yr	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5
Z1 = Saturated Uptake Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Z2 = Lower Penalty Depth	cm	100	100	100	100	100	100	100	100	100	100	100	100
Z3 = Upper Penalty Depth	cm	200	200	200	200	200	200	200	200	200	200	200	200

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	34.62	36.20	37.53	39.03	40.48	43.22	44.64	45.91	47.86	49.19	50.50	51.97	51.97
Run Date	-	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65
Starting Date for Output	-	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65
Ending Date	-	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00
Output Duration	days	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784
Cell Label		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	Total
Downstream Cell Label		1B	Outflow	2B	Outflow	3B	Outflow	4B	Outflow	5B	Outflow	6B	Outflow	-
Network Simulation Name	-	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET
Simulation Type	-	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	2.75	4.13	2.75	4.13	2.75	4.13	87.59
Mean Rainfall	cm/yr	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	130.0
Mean ET	cm/yr	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.2
Cell Inflow Volume	hm3/yr	274.0	267.8	228.2	224.4	192.2	184.2	71.4	70.5	71.4	70.5	71.4	70.5	908.6
Cell Inflow Load	kg/yr	28181.3	17500.5	23471.8	14694.3	19770.5	11420.5	7343.4	4933.8	7343.4	4933.8	7343.4	4933.8	93454
Cell Inflow Conc	ppb	103	65	103	65	103	62	103	70	103	70	103	70	102.9
Treated Outflow Volume	hm3/yr	267.8	265.9	224.4	223.9	184.2	183.8	70.5	70.3	70.5	70.3	70.5	70.3	884.4
Treated Outflow Load	kg/yr	17500.5	5005.1	14694.3	4267.1	11420.5	3646.1	4933.8	1329.9	4933.8	1329.9	4933.8	1329.9	16908
Treated FWM Outflow Conc	ppb	65	19	65	19	62	20	70	19	70	19	70	19	19.1
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Outflow Volume + Bypass	hm3/yr	267.8	265.9	224.4	223.9	184.2	183.8	70.5	70.3	70.5	70.3	70.5	70.3	884.4
Total Outflow Load + Bypass	kg/yr	17500.5	5005.1	14694.3	4267.1	11420.5	3646.1	4933.8	1329.9	4933.8	1329.9	4933.8	1329.9	16908.0
Total FWM Outflow Conc	ppb	65.3	18.8	65.5	19.1	62.0	19.8	70.0	18.9	70.0	18.9	70.0	18.9	19.1
Bypass Load	kg/yr	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Bypass Load	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
Maximum Inflow	hm3/d	3.49	3.43	2.91	2.87	2.45	2.40	0.91	0.90	0.91	0.90	0.91	0.90	11.57
Maximum Outflow	hm3/d	3.43	3.42	2.87	2.87	2.40	2.39	0.90	0.89	0.90	0.89	0.90	0.89	11.37
Surface Load Reduction	kg/yr	10681	12495	8777	10427	8350	7774	2410	3604	2410	3604	2410	3604	76546
Load Trapped in Sediments	kg/yr	10478	12922	8783	10824	7801	8077	2417	3743	2417	3743	2417	3743	77368
Overall Load Reduction	%	38%	71%	37%	71%	42%	68%	33%	73%	33%	73%	33%	73%	82%
Lower Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Upper Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Daily Geometric Mean	ppb	56.0	12.2	56.3	12.3	55.7	12.7	60.5	11.8	60.5	11.8	60.5	11.8	#N/A
Outflow Geo Mean - Composites	ppb	57.8	14.2	57.9	14.4	55.4	15.2	62.8	15.0	62.8	15.0	62.8	15.0	14.5
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Frequency Outflow Conc > 10 ppb	%	100%	79%	100%	79%	100%	83%	100%	85%	100%	85%	100%	85%	80%
Frequency Outflow Conc > 20 ppb	%	100%	26%	100%	28%	100%	31%	100%	28%	100%	28%	100%	28%	52%
Frequency Outflow Conc > 50 ppb	%	74%	0%	74%	0%	66%	0%	80%	0%	80%	0%	80%	0%	27%
Freq Outflow Volume > 10 ppb	%	100%	89%	100%	89%	100%	91%	100%	91%	100%	91%	100%	91%	90%
95th Percentile Outflow Conc	ppb	87.35	27.19	87.60	27.58	83.70	28.41	93.96	26.86	93.96	26.86	93.96	26.86	27
Mean Biomass P Storage	mg/m2	2677	918	2682	927	2550	908	2758	909	2758	909	2758	909	1724
Storage Increase / Net Removal	%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	0%
Net Storage Turnover Rate	1/yr	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	17.9
Unit Area P Load	mg/m2-yr	2292	1240	2282	1255	2057	1280	2667	1195	2667	1195	2667	1195	1067
Unit Area P Removal	mg/m2-yr	852	915	854	924	812	905	878	907	878	907	878	907	883
Mean Water Load	cm/d	6.1	5.2	6.1	5.2	5.5	5.7	7.1	4.7	7.1	4.7	7.1	4.7	2.8
Max Water Load	cm/d	28.4	24.3	28.3	24.5	25.5	26.9	33.0	21.7	33.0	21.7	33.0	21.7	13.2
Mean Depth	cm	59	57	59	56	50	51	46	46	46	46	46	46	53
Minimum Depth	cm	26.3	22.2	24.6	21.8	14.6	7.6	24.4	19.2	24.4	19.2	24.4	19.2	20
Maximum Depth	cm	100.0	93.3	99.8	91.8	83.6	83.6	71.9	71.9	71.9	71.9	71.9	71.9	88
Frequency Depth < 10 cm	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%
Flow/Width	m2/day	219	163	217	153	108	103	59	58	59	58	59	58	139.0
HRT Days	days	9.7	11.0	9.7	10.7	9.1	9.0	6.5	9.9	6.5	9.9	6.5	9.9	18.8
Mean Velocity	cm/sec	0.43	0.33	0.43	0.32	0.25	0.23	0.15	0.15	0.15	0.15	0.15	0.15	0.29
Seepage Outflow / Total Outflow	%	2%	1%	1%	0%	4%	0%	1%	0%	1%	0%	1%	0%	2%
Release 1 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Release 2 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
95th Percentile Outflow Volume	hm3/d	1.8	1.9	1.5	1.6	1.3	1.3	0.5	0.5	0.5	0.5	0.5	0.5	6.3
95th Percentile Outflow Load	kg/d	136.5	43.4	114.8	36.9	91.6	31.8	38.0	11.3	38.0	11.3	38.0	11.3	145.9
Simulated / Specified Mean Depth	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 1 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 2 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Outflow Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Range Check - Mean Depth	-		0.92		0.90		0.82		0.74		0.74		0.74	6
Range Check - Freq Depth < 10 cm	-						10.00							1
Range Check - Flow/Width	-	1.05		1.03	0.94		0.64		0.36		0.36		0.36	7
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-													0
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mass Balance Error	%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Warning or Error Messages		Cell# 1 Flow/Width out of calib. range for EMG_3: 219 vs. 26 - 210 m2/day						Cell# 10 Depth out of calib. range for SAV_3: 46 vs. 62 - 87 cm						14
		Cell# 2 Depth out of calib. range for SAV_3: 57 vs. 62 - 87 cm						Cell# 10 Flow/Width out of calib. range for SAV_3: 58 vs. 162 - 374 m2/day						
		Cell# 3 Flow/Width out of calib. range for EMG_3: 217 vs. 26 - 210 m2/day						Cell# 12 Depth out of calib. range for SAV_3: 46 vs. 62 - 87 cm						
		Cell# 4 Depth out of calib. range for SAV_3: 56 vs. 62 - 87 cm						Cell# 12 Flow/Width out of calib. range for SAV_3: 58 vs. 162 - 374 m2/day						
		Cell# 4 Flow/Width out of calib. range for SAV_3: 153 vs. 162 - 374 m2/day												
		Cell# 6 Depth out of calib. range for SAV_3: 51 vs. 62 - 87 cm												
		Cell# 6 Freq Z < 10 cm out of calib. range for SAV_3: 0 vs. 0 - 0 %												
		Cell# 6 Flow/Width out of calib. range for SAV_3: 103 vs. 162 - 374 m2/day												
		Cell# 8 Depth out of calib. range for SAV_3: 46 vs. 62 - 87 cm												
		Cell# 8 Flow/Width out of calib. range for SAV_3: 58 vs. 162 - 374 m2/day												

Input Variable	Units	Value	Case Description:
Design Case Name	-	A1	Compartment A-1
Input Series Name	-	TS_A1	15,200 acres (from A8)
Starting Date for Simulation	-	01/01/65	Inflow volumes, outflow volumes, and depths from SFWMM simulation
Ending Date for Simulation	-	04/30/00	Tested series compare DMSTA simulation with independent sfwmm simulation
Starting Date for Output	-	05/01/65	
Integration Steps Per Day	-	4	Simulation Type:
Number of Iterations	-	0	
Output Averaging Interval	days	30	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	134.4	#N/A	#N/A
GM Outflow C (ppb)	111.8	#N/A	#N/A
Load Reduction %	16%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	1	

Cell Number -->	1	2	3	4	5	6	7	8	9	10	11	12
Cell Label -	1											
Vegetation Type -->	RES_3											
Inflow Fraction -	1											
Downstream Cell Number -												
Surface Area km2	61.54											
Mean Width of Flow Pa km	6.70											
Number of Tanks in Series -	1.0											
Minimum Depth for Releases cm	15											
Release 1 Series Name	IRRIG											
Release 2 Series Name	TO_A2											
Outflow Series Name	TO_STA											
Depth Series Name	A1_DEPTH											
Outflow Control Depth cm												
Outflow Weir Depth cm												
Outflow Coefficient - Exponent -	1.5											
Outflow Coefficient - Intercept -	8											
Bypass Depth cm												
Maximum Inflow hm3/day												
Maximum Outflow hm3/day	9.05233											
Inflow Seepage Rate (cm/d) / cm												
Inflow Seepage Control Elev cm												
Inflow Seepage Conc ppb												
Outflow Seepage Rate (cm/d) / cm	0.00081											
Outflow Seepage Control Elev cm	6											
Max Outflow Seepage Conc ppb	100											
Seepage Recycle to Cell Number -	1											
Seepage Recycle Fraction -	0.75											
Seepage Discharge Fraction -												
Initial Water Column Conc ppb	105											
Initial P Storage Per Unit Area mg/m2	525											
Initial Water Column Depth cm	150											
C0 = Conc at 0 g/m2 P Storage ppb	3											
C1 = Conc at 1 g/m2 P storage ppb	150											
C2 = Conc at Half-Max Uptake ppb												
K = Net Settling Rate at Steady State m/yr	5.0											
Z1 = Saturated Uptake Depth cm	40											
Z2 = Lower Penalty Depth cm	100											
Z3 = Upper Penalty Depth cm	400											

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	1.59												1.59
Run Date	-	10/09/06												10/09/06
Starting Date for Simulation	-	01/01/65												01/01/65
Starting Date for Output	-	05/01/65												05/01/65
Ending Date	-	04/30/00												04/30/00
Output Duration	days	12784												12784
Cell Label		1												Total
Downstream Cell Label		Outflow												-
Network Simulation Name	-	EAASR_NET												EAASR_NET
Simulation Type	-	Base												Base
Surface Area	km2	61.54												61.54
Mean Rainfall	cm/yr	130.73												130.7
Mean ET	cm/yr	135.34												135.3
Cell Inflow Volume	hm3/yr	717.8												717.8
Cell Inflow Load	kg/yr	114562.8												114563
Cell Inflow Conc	ppb	160												159.6
Treated Outflow Volume	hm3/yr	578.3												578.3
Treated Outflow Load	kg/yr	77736.8												77737
Treated FWM Outflow Conc	ppb	134												134.4
Upper Confidence Limit	ppb	#N/A												#N/A
Lower Confidence Limit	ppb	#N/A												#N/A
Total Outflow Volume + Bypass	hm3/yr	701.7												701.7
Total Outflow Load + Bypass	kg/yr	95947.1												95947.1
Total FWM Outflow Conc	ppb	136.7												136.7
Bypass Load	kg/yr	0												0.0
Bypass Load	%	0%												0.0
Maximum Inflow	hm3/d	11.90												11.90
Maximum Outflow	hm3/d	9.01												9.01
Surface Load Reduction	kg/yr	36826												36826
Load Trapped in Sediments	kg/yr	17376												17376
Overall Load Reduction	%	16%												16%
Lower Confidence Limit	%	#N/A												#N/A
Upper Confidence Limit	%	#N/A												#N/A
Daily Geometric Mean	ppb	105.3												#N/A
Outflow Geo Mean - Composites	ppb	111.8												111.8
Upper Confidence Limit	ppb	#N/A												#N/A
Lower Confidence Limit	ppb	#N/A												#N/A
Frequency Outflow Conc > 10 ppb	%	100%												100%
Frequency Outflow Conc > 20 ppb	%	100%												100%
Frequency Outflow Conc > 50 ppb	%	84%												100%
Freq Outflow Volume > 10 ppb	%	82%												82%
95th Percentile Outflow Conc	ppb	302.53												303
Mean Biomass P Storage	mg/m2	710												710
Storage Increase / Net Removal	%	1%												1%
Net Storage Turnover Rate	1/yr	13.9												13.9
Unit Area P Load	mg/m2-yr	1862												1862
Unit Area P Removal	mg/m2-yr	282												282
Mean Water Load	cm/d	3.2												3.2
Max Water Load	cm/d	19.3												19.3
Mean Depth	cm	220												220
Minimum Depth	cm	1.0												1
Maximum Depth	cm	379.5												379
Frequency Depth < 10 cm	%	6%												5.6%
Flow/Width	m2/day	293												293.3
HRT Days	days	68.8												68.8
Mean Velocity	cm/sec	0.15												0.15
Seepage Outflow / Total Outflow	%	1%												2%
Release 1 Outflow Volume	hm3/yr	0.00												0.0
Release 2 Outflow Volume	hm3/yr	123.43												123.4
95th Percentile Outflow Volume	hm3/d	4.8												4.8
95th Percentile Outflow Load	kg/d	721.7												721.7
Simulated / Specified Mean Depth	%	99%												1.0
Release 1 Demand Met	%	#N/A												#N/A
Release 2 Demand Met	%	98%												1.0
Outflow Demand Met	%	100%												1.0
Range Check - Mean Depth	-													0
Range Check - Freq Depth < 10 cm	-	10.00												1
Range Check - Flow/Width	-													0
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-													0
Water Balance Error	%	0.00%												0.00%
Mass Balance Error	%	0.00%												0.00%
Warning or Error Messages		Cell# 1 Freq Z < 10 cm out of calib. range for RES_3: 0 vs. 0 - 0 %												1

Input Variable	Units	Value	Case Description:
Design Case Name	-	A2	Compartment A-2
Input Series Name		TS_A2	13,775 acres of effective area
Starting Date for Simulation	-	01/01/65	Inflow volumes, outflow volumes, and depths from SFWMM simulation
Ending Date for Simulation	-	04/30/00	Tested series compare DMSTA simulation with independent sfwmm simulation
Starting Date for Output	-	05/01/65	
Integration Steps Per Day	-	4	Simulation Type:
Number of Iterations	-	0	
Output Averaging Interval	days	30	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	75.8	#N/A	#N/A
GM Outflow C (ppb)	82.8	#N/A	#N/A
Load Reduction %	23%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	1	

Cell Number -->	1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	RES_A2											
Vegetation Type -->	RES_3											
Inflow Fraction	1											
Downstream Cell Number												
Surface Area (km2)	55.77											
Mean Width of Flow Pa (km)	10.00											
Number of Tanks in Series	1.0											
Minimum Depth for Releases (cm)	15											
Release 1 Series Name	IRRIG											
Release 2 Series Name												
Outflow Series Name	TO_A1											
Depth Series Name	A2_DEPTH											
Outflow Control Depth (cm)												
Outflow Weir Depth (cm)												
Outflow Coefficient - Exponent	1.5											
Outflow Coefficient - Intercept	8											
Bypass Depth (cm)												
Maximum Inflow (hm3/day)												
Maximum Outflow (hm3/day)	7.829											
Inflow Seepage Rate ((cm/d) / cm)												
Inflow Seepage Control Elev (cm)												
Inflow Seepage Conc (ppb)												
Outflow Seepage Rate ((cm/d) / cm)	0.000778											
Outflow Seepage Control Elev (cm)	6											
Max Outflow Seepage Conc (ppb)	100											
Seepage Recycle to Cell Number	1											
Seepage Recycle Fraction	0.75											
Seepage Discharge Fraction												
Initial Water Column Conc (ppb)	90											
Initial P Storage Per Unit Area (mg/m2)	375											
Initial Water Column Depth (cm)	200											
C0 = Conc at 0 g/m2 P Storage (ppb)	3											
C1 = Conc at 1 g/m2 P storage (ppb)	150											
C2 = Conc at Half-Max Uptake (ppb)												
K = Net Settling Rate at Steady State (m/yr)	5.0											
Z1 = Saturated Uptake Depth (cm)	40											
Z2 = Lower Penalty Depth (cm)	100											
Z3 = Upper Penalty Depth (cm)	400											

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	1.92												1.92
Run Date	-	10/09/06												10/09/06
Starting Date for Simulation	-	01/01/65												01/01/65
Starting Date for Output	-	05/01/65												05/01/65
Ending Date	-	04/30/00												04/30/00
Output Duration	days	12784												12784
Cell Label		RES_A2												Total
Downstream Cell Label		Outflow												-
Network Simulation Name	-	EAASR_NET												EAASR_NE
Simulation Type	-	Base												Base
Surface Area	km2	55.77												55.77
Mean Rainfall	cm/yr	128.19												128.2
Mean ET	cm/yr	137.71												137.7
Cell Inflow Volume	hm3/yr	460.7												460.7
Cell Inflow Load	kg/yr	46355.5												46356
Cell Inflow Conc	ppb	101												100.6
Treated Outflow Volume	hm3/yr	232.9												232.9
Treated Outflow Load	kg/yr	17645.9												17646
Treated FWM Outflow Conc	ppb	76												75.8
Upper Confidence Limit	ppb	#N/A												#N/A
Lower Confidence Limit	ppb	#N/A												#N/A
Total Outflow Volume + Bypass	hm3/yr	441.8												441.8
Total Outflow Load + Bypass	kg/yr	35868.2												35868.2
Total FWM Outflow Conc	ppb	81.2												81.2
Bypass Load	kg/yr	0												0.0
Bypass Load	%	0%												0.0
Maximum Inflow	hm3/d	7.58												7.58
Maximum Outflow	hm3/d	4.47												4.47
Surface Load Reduction	kg/yr	28710												28710
Load Trapped in Sediments	kg/yr	10824												10824
Overall Load Reduction	%	23%												23%
Lower Confidence Limit	%	#N/A												#N/A
Upper Confidence Limit	%	#N/A												#N/A
Daily Geometric Mean	ppb	83.9												#N/A
Outflow Geo Mean - Composites	ppb	82.8												82.8
Upper Confidence Limit	ppb	#N/A												#N/A
Lower Confidence Limit	ppb	#N/A												#N/A
Frequency Outflow Conc > 10 ppb	%	100%												100%
Frequency Outflow Conc > 20 ppb	%	100%												100%
Frequency Outflow Conc > 50 ppb	%	97%												100%
Freq Outflow Volume > 10 ppb	%	53%												53%
95th Percentile Outflow Conc	ppb	117.13												117
Mean Biomass P Storage	mg/m2	518												518
Storage Increase / Net Removal	%	1%												1%
Net Storage Turnover Rate	1/yr	13.1												13.1
Unit Area P Load	mg/m2-yr	831												831
Unit Area P Removal	mg/m2-yr	194												194
Mean Water Load	cm/d	2.3												2.3
Max Water Load	cm/d	13.6												13.6
Mean Depth	cm	258												258
Minimum Depth	cm	1.0												1
Maximum Depth	cm	430.6												431
Frequency Depth < 10 cm	%	3%												2.6%
Flow/Width	m2/day	126												126.1
HRT Days	days	113.9												113.9
Mean Velocity	cm/sec	0.06												0.06
Seepage Outflow / Total Outflow	%	2%												4%
Release 1 Outflow Volume	hm3/yr	208.92												208.9
Release 2 Outflow Volume	hm3/yr	0.00												0.0
95th Percentile Outflow Volume	hm3/d	2.3												2.3
95th Percentile Outflow Load	kg/d	161.2												161.2
Simulated / Specified Mean Depth	%	99%												1.0
Release 1 Demand Met	%	97%												1.0
Release 2 Demand Met	%	#N/A												#N/A
Outflow Demand Met	%	100%												1.0
Range Check - Mean Depth	-													0
Range Check - Freq Depth < 10 cm	-	10.00												1
Range Check - Flow/Width	-													0
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-													0
Water Balance Error	%	0.00%												0.00%
Mass Balance Error	%	0.00%												0.00%
Warning or Error Messages		Cell# 1 Freq Z < 10 cm out of calib. range for RES_3: 0 vs. 0 - 0 %												1

Input Variable	Units	Value	Case Description:
Design Case Name	-	STA34	STA-3/4 and the new EAASR STA
Input Series Name		TS_STA34	Inflows distributed uniformly based on area
Starting Date for Simulation	-	01/01/65	New STA hydraulics based on average of existing STA-3/4 hydraulics
Ending Date for Simulation	-	04/30/00	Lake Okeechobee deliveries at 200 ppb
Starting Date for Output	-	05/01/65	The effective treatment area of the new STA, in acres, is estimated at 17,750
Integration Steps Per Day	-	4	Simulation Type:
Number of Iterations	-	3	
Output Averaging Interval	days	30	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	11.9	#N/A	#N/A
GM Outflow C (ppb)	9.0	#N/A	#N/A
Load Reduction %	91%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	20	

Cell Number -->		1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Vegetation Type	-->	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3
Inflow Fraction	-	0.190293169		0.158492387		0.1335		0.172578		0.1725781		0.172578	
Downstream Cell Number	-	2		4		6		8		10		12.00	
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	9.58	14.37	9.58	14.37	9.58	14.37
Mean Width of Flow Path	km	3.42	4.50	2.89	4.02	4.88	4.88	3.33	3.33	3.33	3.33	3.33	3.33
Number of Tanks in Series	-	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Depth for Releases	cm												
Release 1 Series Name													
Release 2 Series Name													
Outflow Series Name													
Depth Series Name													
Outflow Control Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Outflow Weir Depth	cm												
Outflow Coefficient - Exponent	-	4	4	4	4	4	4	4	4	4	4	4	4
Outflow Coefficient - Intercept	-	1	1	1	1	1	1	1	1	1	1	1	1
Bypass Depth	cm												
Maximum Inflow	hm3/day												
Maximum Outflow	hm3/day												
Inflow Seepage Rate	(cm/d) / cm												
Inflow Seepage Control Elev	cm												
Inflow Seepage Conc	ppb												
Outflow Seepage Rate	(cm/d) / cm	0.0058	0.0029	0.0014		0.0038		0.0035		0.0035		0.0035	
Outflow Seepage Control Elev	cm	16	40	-67		-64							
Max Outflow Seepage Conc	ppb	20	20	20	20	20	20	20	20	20	20	20	20
Seepage Recycle to Cell Number	-	1		3		5		7		9		11	
Seepage Recycle Fraction	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Seepage Discharge Fraction	-												
Initial Water Column Conc	ppb	52	12	55	15	55	15	55	15	55	15	55	15
Initial P Storage Per Unit Area	mg/m2	2400	615	2400	615	2400	615	2400	615	2400	615	2400	615
Initial Water Column Depth	cm	60	60	60	60	60	60	60	60	60	60	60	60
C0 = Conc at 0 g/m2 P Storage	ppb	3	3	3	3	3	3	3	3	3	3	3	3
C1 = Conc at 1 g/m2 P storage	ppb	22	22	22	22	22	22	22	22	22	22	22	22
C2 = Conc at Half-Max Uptake	ppb	300	300	300	300	300	300	300	300	300	300	300	300
K = Net Settling Rate at Steady State	m/yr	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5
Z1 = Saturated Uptake Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Z2 = Lower Penalty Depth	cm	100	100	100	100	100	100	100	100	100	100	100	100
Z3 = Upper Penalty Depth	cm	200	200	200	200	200	200	200	200	200	200	200	200

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	44.64	46.90	48.26	50.33	51.83	53.50	54.77	57.71	59.21	60.57	62.19	63.49	63.49
Run Date	-	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65
Starting Date for Output	-	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65
Ending Date	-	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00
Output Duration	days	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784
Cell Label		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	Total
Downstream Cell Label		1B	Outflow	2B	Outflow	3B	Outflow	4B	Outflow	5B	Outflow	6B	Outflow	-
Network Simulation Name	-	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET
Simulation Type	-	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	9.58	14.37	9.58	14.37	9.58	14.37	138.80
Mean Rainfall	cm/yr	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	130.0
Mean ET	cm/yr	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.2
Cell Inflow Volume	hm3/yr	172.9	167.4	144.0	140.4	121.3	113.6	156.8	153.1	156.8	153.1	156.8	153.1	908.6
Cell Inflow Load	kg/yr	21505.1	10493.1	17911.3	8815.1	15086.8	6567.0	19503.1	10545.6	19503.1	10545.6	19503.1	10545.6	113012
Cell Inflow Conc	ppb	124	63	124	63	124	58	124	69	124	69	124	69	124.4
Treated Outflow Volume	hm3/yr	167.4	165.8	140.4	139.8	113.6	113.2	153.1	152.5	153.1	152.5	153.1	152.5	876.2
Treated Outflow Load	kg/yr	10493.1	1995.3	8815.1	1705.6	6567.0	1437.0	10545.6	1771.3	10545.6	1771.3	10545.6	1771.3	10452
Treated FWM Outflow Conc	ppb	63	12	63	12	58	13	69	12	69	12	69	12	11.9
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Outflow Volume + Bypass	hm3/yr	167.4	165.8	140.4	139.8	113.6	113.2	153.1	152.5	153.1	152.5	153.1	152.5	876.2
Total Outflow Load + Bypass	kg/yr	10493.1	1995.3	8815.1	1705.6	6567.0	1437.0	10545.6	1771.3	10545.6	1771.3	10545.6	1771.3	10451.8
Total FWM Outflow Conc	ppb	62.7	12.0	62.8	12.2	57.8	12.7	68.9	11.6	68.9	11.6	68.9	11.6	11.9
Bypass Load	kg/yr	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Bypass Load	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
Maximum Inflow	hm3/d	2.20	2.15	1.83	1.81	1.54	1.50	2.00	1.96	2.00	1.96	2.00	1.96	11.57
Maximum Outflow	hm3/d	2.15	2.14	1.81	1.80	1.50	1.50	1.96	1.96	1.96	1.96	1.96	1.96	11.30
Surface Load Reduction	kg/yr	11012	8498	9096	7109	8520	5130	8957	8774	8957	8774	8957	8774	102561
Load Trapped in Sediments	kg/yr	10850	8950	9090	7506	7891	5433	8894	9259	8894	9259	8894	9259	104179
Overall Load Reduction	%	51%	81%	51%	81%	56%	78%	46%	83%	46%	83%	46%	83%	91%
Lower Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Upper Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Daily Geometric Mean	ppb	53.8	7.9	54.1	8.0	53.2	8.1	59.3	7.6	59.3	7.6	59.3	7.6	#N/A
Outflow Geo Mean - Composites	ppb	55.0	9.1	55.1	9.3	51.4	9.9	60.7	8.8	60.7	8.8	60.7	8.8	9.0
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Frequency Outflow Conc > 10 ppb	%	100%	47%	100%	48%	100%	55%	100%	43%	100%	43%	100%	43%	46%
Frequency Outflow Conc > 20 ppb	%	100%	1%	100%	2%	100%	2%	100%	1%	100%	1%	100%	1%	12%
Frequency Outflow Conc > 50 ppb	%	65%	0%	65%	0%	58%	0%	74%	0%	74%	0%	74%	0%	1%
Freq Outflow Volume > 10 ppb	%	100%	65%	100%	66%	100%	70%	100%	62%	100%	62%	100%	62%	64%
95th Percentile Outflow Conc	ppb	90.75	17.27	91.08	17.58	85.07	17.97	97.72	16.59	97.72	16.59	97.72	16.59	17
Mean Biomass P Storage	mg/m2	2772	636	2776	643	2580	611	2916	647	2916	647	2916	647	1593
Storage Increase / Net Removal	%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	0%
Net Storage Turnover Rate	1/yr	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	16.5
Unit Area P Load	mg/m2-yr	1749	743	1741	753	1570	736	2035	734	2035	734	2035	734	814
Unit Area P Removal	mg/m2-yr	882	634	884	641	821	609	928	644	928	644	928	644	751
Mean Water Load	cm/d	3.8	3.2	3.8	3.3	3.5	3.5	4.5	2.9	4.5	2.9	4.5	2.9	1.8
Max Water Load	cm/d	17.9	15.3	17.8	15.4	16.1	16.8	20.8	13.7	20.8	13.7	20.8	13.7	8.3
Mean Depth	cm	54	52	54	51	46	47	53	54	53	54	53	54	52
Minimum Depth	cm	24.2	11.7	22.2	9.9	3.9	6.4	24.0	13.2	24.0	13.2	24.0	13.2	16
Maximum Depth	cm	89.0	83.0	88.8	81.7	74.4	74.4	87.5	87.5	87.5	87.5	87.5	87.5	85
Frequency Depth < 10 cm	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.1%
Flow/Width	m2/day	138	102	137	96	68	64	129	126	129	126	129	126	115.4
HRT Days	days	14.0	16.0	14.0	15.6	13.2	13.4	11.8	18.6	11.8	18.6	11.8	18.6	29.2
Mean Velocity	cm/sec	0.30	0.23	0.29	0.22	0.17	0.16	0.28	0.27	0.28	0.27	0.28	0.27	0.25
Seepage Outflow / Total Outflow	%	3%	1%	2%	0%	6%	0%	2%	0%	2%	0%	2%	0%	3%
Release 1 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Release 2 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
95th Percentile Outflow Volume	hm3/d	1.2	1.2	1.0	1.0	0.8	0.8	1.0	1.1	1.0	1.1	1.0	1.1	6.2
95th Percentile Outflow Load	kg/d	84.9	17.6	71.4	15.1	54.3	12.8	86.1	15.6	86.1	15.6	86.1	15.6	92.1
Simulated / Specified Mean Depth	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 1 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 2 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Outflow Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Range Check - Mean Depth	-		0.84		0.82		0.75		0.87		0.87		0.87	6
Range Check - Freq Depth < 10 cm	-				10.00		10.00							2
Range Check - Flow/Width	-		0.63		0.59		0.39		0.78		0.78		0.78	6
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-		0.81		0.82		0.86		0.78		0.78		0.78	6
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mass Balance Error	%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%
Warning or Error Messages														20

Cell# 2 Depth out of calib. range for SAV_3: 52 vs. 62 - 87 cm
Cell# 2 Flow/Width out of calib. range for SAV_3: 102 vs. 162 - 374 m2/day
Cell# 2 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb
Cell# 4 Depth out of calib. range for SAV_3: 51 vs. 62 - 87 cm
Cell# 4 Freq Z < 10 cm out of calib. range for SAV_3: 0 vs. 0 - 0 %
Cell# 4 Flow/Width out of calib. range for SAV_3: 96 vs. 162 - 374 m2/day
Cell# 4 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb
Cell# 6 Depth out of calib. range for SAV_3: 47 vs. 62 - 87 cm
Cell# 6 Freq Z < 10 cm out of calib. range for SAV_3: 0 vs. 0 - 0 %
Cell# 6 Flow/Width out of calib. range for SAV_3: 64 vs. 162 - 374 m2/day
Cell# 6 Outflow Conc out of calib. range for SAV_3: 13 vs. 15 - 153 ppb
Cell# 8 Depth out of calib. range for SAV_3: 54 vs. 62 - 87 cm
Cell# 8 Flow/Width out of calib. range for SAV_3: 126 vs. 162 - 374 m2/day
Cell# 8 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb
Cell# 10 Depth out of calib. range for SAV_3: 54 vs. 62 - 87 cm
Cell# 10 Flow/Width out of calib. range for SAV_3: 126 vs. 162 - 374 m2/day
Cell# 10 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb
Cell# 12 Depth out of calib. range for SAV_3: 54 vs. 62 - 87 cm
Cell# 12 Flow/Width out of calib. range for SAV_3: 126 vs. 162 - 374 m2/day
Cell# 12 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb

Input Variable	Units	Value	Case Description:
Design Case Name	-	STA34	STA-3/4 and the new EAASR STA
Input Series Name		TS_STA34	Inflows distributed uniformly based on area
Starting Date for Simulation	-	01/01/65	New STA hydraulics based on average of existing STA-3/4 hydraulics
Ending Date for Simulation	-	04/30/00	Lake Okeechobee deliveries at 200 ppb
Starting Date for Output	-	05/01/65	The effective treatment area of the new STA, in acres, is estimated at 12,350
Integration Steps Per Day	-	4	Simulation Type:
Number of Iterations	-	3	
Output Averaging Interval	days	30	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	15.1	#N/A	#N/A
GM Outflow C (ppb)	11.4	#N/A	#N/A
Load Reduction %	88%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	16	

Cell Number -->		1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Vegetation Type	-->	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3
Inflow Fraction	-	0.225869374		0.188123286		0.158458		0.142524		0.1425241		0.142524	
Downstream Cell Number	-	2		4		6		8		10		12.00	
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	6.67	10.00	6.67	10.00	6.67	10.00
Mean Width of Flow Path	km	3.42	4.50	2.89	4.02	4.88	4.88	3.33	3.33	3.33	3.33	3.33	3.33
Number of Tanks in Series	-	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Depth for Releases	cm												
Release 1 Series Name													
Release 2 Series Name													
Outflow Series Name													
Depth Series Name													
Outflow Control Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Outflow Weir Depth	cm												
Outflow Coefficient - Exponent	-	4	4	4	4	4	4	4	4	4	4	4	4
Outflow Coefficient - Intercept	-	1	1	1	1	1	1	1	1	1	1	1	1
Bypass Depth	cm												
Maximum Inflow	hm3/day												
Maximum Outflow	hm3/day												
Inflow Seepage Rate	(cm/d) / cm												
Inflow Seepage Control Elev	cm												
Inflow Seepage Conc	ppb												
Outflow Seepage Rate	(cm/d) / cm	0.0058	0.0029	0.0014		0.0038		0.0035		0.0035		0.0035	
Outflow Seepage Control Elev	cm	16	40	-67		-64							
Max Outflow Seepage Conc	ppb	20	20	20	20	20	20	20	20	20	20	20	20
Seepage Recycle to Cell Number	-	1		3		5		7		9		11	
Seepage Recycle Fraction	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Seepage Discharge Fraction	-												
Initial Water Column Conc	ppb	52	12	55	15	55	15	55	15	55	15	55	15
Initial P Storage Per Unit Area	mg/m2	2400	615	2400	615	2400	615	2400	615	2400	615	2400	615
Initial Water Column Depth	cm	60	60	60	60	60	60	60	60	60	60	60	60
C0 = Conc at 0 g/m2 P Storage	ppb	3	3	3	3	3	3	3	3	3	3	3	3
C1 = Conc at 1 g/m2 P storage	ppb	22	22	22	22	22	22	22	22	22	22	22	22
C2 = Conc at Half-Max Uptake	ppb	300	300	300	300	300	300	300	300	300	300	300	300
K = Net Settling Rate at Steady State	m/yr	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5
Z1 = Saturated Uptake Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Z2 = Lower Penalty Depth	cm	100	100	100	100	100	100	100	100	100	100	100	100
Z3 = Upper Penalty Depth	cm	200	200	200	200	200	200	200	200	200	200	200	200

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	34.84	36.26	37.70	39.03	40.48	41.81	43.22	44.78	46.22	47.95	49.65	51.43	51.43
Run Date	-	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65
Starting Date for Output	-	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65
Ending Date	-	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00
Output Duration	days	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784
Cell Label		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	Total
Downstream Cell Label		1B	Outflow	2B	Outflow	3B	Outflow	4B	Outflow	5B	Outflow	6B	Outflow	-
Network Simulation Name	-	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET
Simulation Type	-	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	6.67	10.00	6.67	10.00	6.67	10.00	116.94
Mean Rainfall	cm/yr	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	130.0
Mean ET	cm/yr	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.2
Cell Inflow Volume	hm3/yr	205.2	199.5	170.9	167.2	144.0	136.1	129.5	127.0	129.5	127.0	129.5	127.0	908.6
Cell Inflow Load	kg/yr	25525.5	13828.6	21259.8	11617.9	17907.4	8806.0	16106.7	9576.8	16106.7	9576.8	16106.7	9576.8	113013
Cell Inflow Conc	ppb	124	69	124	69	124	65	124	75	124	75	124	75	124.4
Treated Outflow Volume	hm3/yr	199.5	197.7	167.2	166.7	136.1	135.7	127.0	126.6	127.0	126.6	127.0	126.6	880.0
Treated Outflow Load	kg/yr	13828.6	2981.5	11617.9	2548.5	8806.0	2159.7	9576.8	1861.2	9576.8	1861.2	9576.8	1861.2	13273
Treated FWM Outflow Conc	ppb	69	15	69	15	65	16	75	15	75	15	75	15	15.1
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Outflow Volume + Bypass	hm3/yr	199.5	197.7	167.2	166.7	136.1	135.7	127.0	126.6	127.0	126.6	127.0	126.6	880.0
Total Outflow Load + Bypass	kg/yr	13828.6	2981.5	11617.9	2548.5	8806.0	2159.7	9576.8	1861.2	9576.8	1861.2	9576.8	1861.2	13273.2
Total FWM Outflow Conc	ppb	69.3	15.1	69.5	15.3	64.7	15.9	75.4	14.7	75.4	14.7	75.4	14.7	15.1
Bypass Load	kg/yr	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Bypass Load	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
Maximum Inflow	hm3/d	2.61	2.56	2.18	2.15	1.83	1.79	1.65	1.62	1.65	1.62	1.65	1.62	11.57
Maximum Outflow	hm3/d	2.56	2.55	2.15	2.14	1.79	1.78	1.62	1.62	1.62	1.62	1.62	1.62	11.33
Surface Load Reduction	kg/yr	11697	10847	9642	9069	9101	6646	6530	7716	6530	7716	6530	7716	99740
Load Trapped in Sediments	kg/yr	11469	11288	9611	9466	8438	6949	6487	8054	6487	8054	6487	8054	100843
Overall Load Reduction	%	46%	78%	45%	78%	51%	75%	41%	81%	41%	81%	41%	81%	88%
Lower Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Upper Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Daily Geometric Mean	ppb	59.5	9.8	59.9	9.9	59.1	10.1	65.2	9.5	65.2	9.5	65.2	9.5	#N/A
Outflow Geo Mean - Composites	ppb	60.7	11.3	61.0	11.5	57.4	12.2	66.6	11.2	66.6	11.2	66.6	11.2	11.4
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Frequency Outflow Conc > 10 ppb	%	100%	63%	100%	66%	100%	73%	100%	63%	100%	63%	100%	63%	65%
Frequency Outflow Conc > 20 ppb	%	100%	9%	100%	10%	100%	12%	100%	9%	100%	9%	100%	9%	30%
Frequency Outflow Conc > 50 ppb	%	74%	0%	74%	0%	69%	0%	80%	0%	80%	0%	80%	0%	9%
Freq Outflow Volume > 10 ppb	%	100%	80%	100%	81%	100%	84%	100%	79%	100%	79%	100%	79%	80%
95th Percentile Outflow Conc	ppb	98.05	22.74	98.55	23.04	93.14	23.53	107.08	21.86	107.08	21.86	107.08	21.86	23
Mean Biomass P Storage	mg/m2	2930	803	2935	811	2759	782	3057	808	3057	808	3057	808	1761
Storage Increase / Net Removal	%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	0%
Net Storage Turnover Rate	1/yr	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	17.1
Unit Area P Load	mg/m2-yr	2076	980	2067	992	1863	987	2416	958	2416	958	2416	958	966
Unit Area P Removal	mg/m2-yr	933	800	934	808	878	779	973	805	973	805	973	805	862
Mean Water Load	cm/d	4.6	3.9	4.5	3.9	4.1	4.2	5.3	3.5	5.3	3.5	5.3	3.5	2.1
Max Water Load	cm/d	21.3	18.2	21.2	18.3	19.1	20.0	24.7	16.2	24.7	16.2	24.7	16.2	9.9
Mean Depth	cm	56	54	56	53	47	48	51	52	51	52	51	52	52
Minimum Depth	cm	24.8	15.5	23.0	13.5	8.2	6.7	24.4	14.6	24.4	14.6	24.4	14.6	17
Maximum Depth	cm	92.9	86.7	92.8	85.4	77.7	77.7	83.4	83.4	83.4	83.4	83.4	83.4	85
Frequency Depth < 10 cm	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.1%
Flow/Width	m2/day	164	121	162	114	81	76	106	104	106	104	106	104	115.0
HRT Days	days	12.2	13.9	12.2	13.5	11.5	11.6	9.6	14.9	9.6	14.9	9.6	14.9	24.5
Mean Velocity	cm/sec	0.34	0.26	0.34	0.25	0.20	0.18	0.24	0.23	0.24	0.23	0.24	0.23	0.25
Seepage Outflow / Total Outflow	%	3%	1%	2%	0%	5%	0%	2%	0%	2%	0%	2%	0%	3%
Release 1 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Release 2 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
95th Percentile Outflow Volume	hm3/d	1.4	1.4	1.1	1.2	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	6.2
95th Percentile Outflow Load	kg/d	112.7	26.3	94.8	22.5	72.8	19.2	76.4	16.3	76.4	16.3	76.4	16.3	116.8
Simulated / Specified Mean Depth	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 1 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 2 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Outflow Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Range Check - Mean Depth	-		0.86		0.85		0.78		0.84		0.84		0.84	6
Range Check - Freq Depth < 10 cm	-						10.00							1
Range Check - Flow/Width	-		0.75		0.70		0.47		0.64		0.64		0.64	6
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-								0.99		0.99		0.99	3
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mass Balance Error	%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%
Warning or Error Messages		Cell# 2 Depth out of calib. range for SAV_3: 54 vs. 62 - 87 cm						Cell# 10 Depth out of calib. range for SAV_3: 52 vs. 62 - 87 cm						16
		Cell# 2 Flow/Width out of calib. range for SAV_3: 121 vs. 162 - 374 m2/day						Cell# 10 Flow/Width out of calib. range for SAV_3: 104 vs. 162 - 374 m2/day						
		Cell# 4 Depth out of calib. range for SAV_3: 53 vs. 62 - 87 cm						Cell# 10 Outflow Conc out of calib. range for SAV_3: 15 vs. 15 - 153 ppb						
		Cell# 4 Flow/Width out of calib. range for SAV_3: 114 vs. 162 - 374 m2/day						Cell# 12 Depth out of calib. range for SAV_3: 52 vs. 62 - 87 cm						
		Cell# 6 Depth out of calib. range for SAV_3: 48 vs. 62 - 87 cm						Cell# 12 Flow/Width out of calib. range for SAV_3: 104 vs. 162 - 374 m2/day						
		Cell# 6 Freq Z < 10 cm out of calib. range for SAV_3: 0 vs. 0 - 0 %						Cell# 12 Outflow Conc out of calib. range for SAV_3: 15 vs. 15 - 153 ppb						
		Cell# 6 Flow/Width out of calib. range for SAV_3: 76 vs. 162 - 374 m2/day												
		Cell# 8 Depth out of calib. range for SAV_3: 52 vs. 62 - 87 cm												
		Cell# 8 Flow/Width out of calib. range for SAV_3: 104 vs. 162 - 374 m2/day												
		Cell# 8 Outflow Conc out of calib. range for SAV_3: 15 vs. 15 - 153 ppb												

Input Variable	Units	Value	Case Description:
Design Case Name	-	STA34	STA-3/4 and the new EAASR STA
Input Series Name		TS_STA34	Inflows distributed uniformly based on area
Starting Date for Simulation	-	01/01/65	New STA hydraulics based on average of existing STA-3/4 hydraulics
Ending Date for Simulation	-	04/30/00	Lake Okeechobee deliveries at 200 ppb
Starting Date for Output	-	05/01/65	The effective treatment area of the new STA, in acres, is estimated at 7,800
Integration Steps Per Day	-	4	Simulation Type:
Number of Iterations	-	3	
Output Averaging Interval	days	30	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	19.2	#N/A	#N/A
GM Outflow C (ppb)	14.4	#N/A	#N/A
Load Reduction %	85%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	13	

Cell Number -->		1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Vegetation Type	-->	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3
Inflow Fraction	-	0.268102696		0.2232988		0.188087		0.106846		0.1068464		0.106846	
Downstream Cell Number	-	2		4		6		8		10		12.00	
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	4.21	6.32	4.21	6.32	4.21	6.32
Mean Width of Flow Path	km	3.42	4.50	2.89	4.02	4.88	4.88	3.33	3.33	3.33	3.33	3.33	3.33
Number of Tanks in Series	-	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Depth for Releases	cm												
Release 1 Series Name													
Release 2 Series Name													
Outflow Series Name													
Depth Series Name													
Outflow Control Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Outflow Weir Depth	cm												
Outflow Coefficient - Exponent	-	4	4	4	4	4	4	4	4	4	4	4	4
Outflow Coefficient - Intercept	-	1	1	1	1	1	1	1	1	1	1	1	1
Bypass Depth	cm												
Maximum Inflow	hm3/day												
Maximum Outflow	hm3/day												
Inflow Seepage Rate	(cm/d) / cm												
Inflow Seepage Control Elev	cm												
Inflow Seepage Conc	ppb												
Outflow Seepage Rate	(cm/d) / cm	0.0058	0.0029	0.0014		0.0038		0.0035		0.0035		0.0035	
Outflow Seepage Control Elev	cm	16	40	-67		-64							
Max Outflow Seepage Conc	ppb	20	20	20	20	20	20	20	20	20	20	20	20
Seepage Recycle to Cell Number	-	1		3		5		7		9		11	
Seepage Recycle Fraction	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Seepage Discharge Fraction	-												
Initial Water Column Conc	ppb	52	12	55	15	55	15	55	15	55	15	55	15
Initial P Storage Per Unit Area	mg/m2	2400	615	2400	615	2400	615	2400	615	2400	615	2400	615
Initial Water Column Depth	cm	60	60	60	60	60	60	60	60	60	60	60	60
C0 = Conc at 0 g/m2 P Storage	ppb	3	3	3	3	3	3	3	3	3	3	3	3
C1 = Conc at 1 g/m2 P storage	ppb	22	22	22	22	22	22	22	22	22	22	22	22
C2 = Conc at Half-Max Uptake	ppb	300	300	300	300	300	300	300	300	300	300	300	300
K = Net Settling Rate at Steady State	m/yr	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5
Z1 = Saturated Uptake Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Z2 = Lower Penalty Depth	cm	100	100	100	100	100	100	100	100	100	100	100	100
Z3 = Upper Penalty Depth	cm	200	200	200	200	200	200	200	200	200	200	200	200

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	38.10	41.01	42.51	44.01	45.60	47.01	48.57	50.21	52.59	54.01	55.76	58.08	58.08
Run Date	-	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06	10/09/06
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65
Starting Date for Output	-	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65
Ending Date	-	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00
Output Duration	days	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784
Cell Label		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	Total
Downstream Cell Label		1B	Outflow	2B	Outflow	3B	Outflow	4B	Outflow	5B	Outflow	6B	Outflow	-
Network Simulation Name	-	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET
Simulation Type	-	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	4.21	6.32	4.21	6.32	4.21	6.32	98.52
Mean Rainfall	cm/yr	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	130.0
Mean ET	cm/yr	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.2
Cell Inflow Volume	hm3/yr	243.6	237.6	202.9	199.1	170.9	162.9	97.1	95.6	97.1	95.6	97.1	95.6	908.6
Cell Inflow Load	kg/yr	30298.3	17972.8	25235.0	15098.0	21255.8	11606.2	12074.7	7789.7	12074.7	7789.7	12074.7	7789.7	113013
Cell Inflow Conc	ppb	124	76	124	76	124	71	124	81	124	81	124	81	124.4
Treated Outflow Volume	hm3/yr	237.6	235.7	199.1	198.6	162.9	162.6	95.6	95.3	95.6	95.3	95.6	95.3	882.8
Treated Outflow Load	kg/yr	17972.8	4478.2	15098.0	3825.4	11606.2	3254.0	7789.7	1787.7	7789.7	1787.7	7789.7	1787.7	16921
Treated FWM Outflow Conc	ppb	76	19	76	19	71	20	81	19	81	19	81	19	19.2
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Outflow Volume + Bypass	hm3/yr	237.6	235.7	199.1	198.6	162.9	162.6	95.6	95.3	95.6	95.3	95.6	95.3	882.8
Total Outflow Load + Bypass	kg/yr	17972.8	4478.2	15098.0	3825.4	11606.2	3254.0	7789.7	1787.7	7789.7	1787.7	7789.7	1787.7	16920.7
Total FWM Outflow Conc	ppb	75.6	19.0	75.8	19.3	71.2	20.0	81.5	18.8	81.5	18.8	81.5	18.8	19.2
Bypass Load	kg/yr	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Bypass Load	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
Maximum Inflow	hm3/d	3.10	3.05	2.58	2.55	2.18	2.13	1.24	1.22	1.24	1.22	1.24	1.22	11.57
Maximum Outflow	hm3/d	3.05	3.03	2.55	2.55	2.13	2.12	1.22	1.22	1.22	1.22	1.22	1.22	11.35
Surface Load Reduction	kg/yr	12326	13495	10137	11273	9650	8352	4285	6002	4285	6002	4285	6002	96093
Load Trapped in Sediments	kg/yr	12032	13921	10085	11671	8922	8656	4264	6216	4264	6216	4264	6216	96727
Overall Load Reduction	%	41%	75%	40%	75%	45%	72%	35%	77%	35%	77%	35%	77%	85%
Lower Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Upper Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Daily Geometric Mean	ppb	64.9	12.2	65.4	12.4	64.7	12.7	70.7	11.9	70.7	11.9	70.7	11.9	#N/A
Outflow Geo Mean - Composites	ppb	66.4	14.1	66.6	14.4	63.3	15.2	72.3	14.5	72.3	14.5	72.3	14.5	14.4
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Frequency Outflow Conc > 10 ppb	%	100%	77%	100%	78%	100%	81%	100%	81%	100%	81%	100%	81%	78%
Frequency Outflow Conc > 20 ppb	%	100%	27%	100%	28%	100%	33%	100%	25%	100%	25%	100%	25%	52%
Frequency Outflow Conc > 50 ppb	%	80%	0%	80%	0%	77%	0%	84%	0%	84%	0%	84%	0%	28%
Freq Outflow Volume > 10 ppb	%	100%	88%	100%	88%	100%	90%	100%	89%	100%	89%	100%	89%	89%
95th Percentile Outflow Conc	ppb	106.82	29.55	107.17	30.04	101.49	30.95	116.07	28.69	116.07	28.69	116.07	28.69	30
Mean Biomass P Storage	mg/m2	3074	990	3080	1000	2917	974	3181	987	3181	987	3181	987	1936
Storage Increase / Net Removal	%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%
Net Storage Turnover Rate	1/yr	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	11.1	34.9	17.7
Unit Area P Load	mg/m2-yr	2464	1273	2453	1289	2212	1301	2868	1233	2868	1233	2868	1233	1147
Unit Area P Removal	mg/m2-yr	978	986	980	996	928	970	1013	984	1013	984	1013	984	982
Mean Water Load	cm/d	5.4	4.6	5.4	4.7	4.9	5.0	6.3	4.1	6.3	4.1	6.3	4.1	2.5
Max Water Load	cm/d	25.2	21.6	25.1	21.8	22.6	23.9	29.4	19.3	29.4	19.3	29.4	19.3	11.7
Mean Depth	cm	58	56	57	55	49	50	48	49	48	49	48	49	52
Minimum Depth	cm	25.7	20.2	23.9	18.4	13.2	7.6	24.5	16.9	24.5	16.9	24.5	16.9	19
Maximum Depth	cm	97.0	90.6	96.8	89.1	81.2	81.2	77.7	77.6	77.7	77.6	77.7	77.6	86
Frequency Depth < 10 cm	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%
Flow/Width	m2/day	195	145	193	136	96	91	80	79	80	79	80	79	124.3
HRT Days	days	10.6	12.1	10.6	11.8	10.0	10.0	7.6	11.8	7.6	11.8	7.6	11.8	20.8
Mean Velocity	cm/sec	0.39	0.30	0.39	0.29	0.23	0.21	0.19	0.19	0.19	0.19	0.19	0.19	0.27
Seepage Outflow / Total Outflow	%	2%	1%	2%	0%	4%	0%	1%	0%	1%	0%	1%	0%	2%
Release 1 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Release 2 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
95th Percentile Outflow Volume	hm3/d	1.6	1.7	1.3	1.4	1.1	1.2	0.6	0.7	0.6	0.7	0.6	0.7	6.3
95th Percentile Outflow Load	kg/d	143.9	38.8	121.0	33.2	94.6	28.3	60.9	15.1	60.9	15.1	60.9	15.1	145.2
Simulated / Specified Mean Depth	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 1 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 2 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Outflow Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Range Check - Mean Depth	-		0.90		0.88		0.80		0.79		0.79		0.79	6
Range Check - Freq Depth < 10 cm	-						10.00							1
Range Check - Flow/Width	-		0.89		0.84		0.57		0.49		0.49		0.49	6
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-													0
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mass Balance Error	%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Warning or Error Messages		Cell# 2 Depth out of calib. range for SAV_3: 56 vs. 62 - 87 cm Cell# 2 Flow/Width out of calib. range for SAV_3: 145 vs. 162 - 374 m2/day Cell# 4 Depth out of calib. range for SAV_3: 55 vs. 62 - 87 cm Cell# 4 Flow/Width out of calib. range for SAV_3: 136 vs. 162 - 374 m2/day Cell# 6 Depth out of calib. range for SAV_3: 50 vs. 62 - 87 cm Cell# 6 Freq Z < 10 cm out of calib. range for SAV_3: 0 vs. 0 - 0 % Cell# 6 Flow/Width out of calib. range for SAV_3: 91 vs. 162 - 374 m2/day Cell# 8 Depth out of calib. range for SAV_3: 49 vs. 62 - 87 cm Cell# 8 Flow/Width out of calib. range for SAV_3: 79 vs. 162 - 374 m2/day Cell# 10 Depth out of calib. range for SAV_3: 49 vs. 62 - 87 cm							Cell# 10 Flow/Width out of calib. range for SAV_3: 79 vs. 162 - 374 m2/day Cell# 12 Depth out of calib. range for SAV_3: 49 vs. 62 - 87 cm Cell# 12 Flow/Width out of calib. range for SAV_3: 79 vs. 162 - 374 m2/day			13

Input Variable	Units	Value	Case Description:
Design Case Name	-	STA34_12_2	STA-3/4 and the new EAASR STA
Input Series Name		TS_STA34	Inflows distributed uniformly based on area
Starting Date for Simulation	-	01/01/65	New STA hydraulics based on average of existing STA-3/4 hydraulics
Ending Date for Simulation	-	04/30/00	Lake Okeechobee deliveries at 150 ppb
Starting Date for Output	-	05/01/65	The effective treatment area of the new STA, in acres, is estimated at 18,100
Integration Steps Per Day	-	4	Simulation Type: Base
Number of Iterations	-	3	
Output Averaging Interval	days	365	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	12.0	#N/A	#N/A
GM Outflow C (ppb)	10.3	#N/A	#N/A
Load Reduction %	89%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	0	

Cell Number -->		1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Vegetation Type	-->	EMG_3	none	EMG_3	none	EMG_3	none	EMG_3	none	EMG_3	none	EMG_3	none
Inflow Fraction	-	0.188370128		0.156890714		0.132151		0.174203		0.1742026		0.174203	
Downstream Cell Number	-	2		4		6		8		10		12.00	
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	9.77	14.66	9.77	14.66	9.77	14.66
Mean Width of Flow Path	km	3.42	4.50	2.89	4.02	4.88	4.88	3.33	3.33	3.33	3.33	3.33	3.33
Number of Tanks in Series	-	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Depth for Releases	cm												
Release 1 Series Name													
Release 2 Series Name													
Outflow Series Name													
Depth Series Name													
Outflow Control Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Outflow Weir Depth	cm												
Outflow Coefficient - Exponent	-	4	4	4	4	4	4	4	4	4	4	4	4
Outflow Coefficient - Intercept	-	1	1	1	1	1	1	1	1	1	1	1	1
Bypass Depth	cm												
Maximum Inflow	hm3/day												
Maximum Outflow	hm3/day												
Inflow Seepage Rate	(cm/d) / cm												
Inflow Seepage Control Elev	cm												
Inflow Seepage Conc	ppb												
Outflow Seepage Rate	(cm/d) / cm	0.0058	0.0029	0.0014		0.0038		0.0035		0.0035		0.0035	
Outflow Seepage Control Elev	cm	16	40	-67		-64							
Max Outflow Seepage Conc	ppb	20	20	20	20	20	20	20	20	20	20	20	20
Seepage Recycle to Cell Number	-	1		3		5		7		9		11	
Seepage Recycle Fraction	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Seepage Discharge Fraction	-												
Initial Water Column Conc	ppb	52	12	55	15	55	15	55	15	55	15	55	15
Initial P Storage Per Unit Area	mg/m2	2400	615	2400	615	2400	615	2400	615	2400	615	2400	615
Initial Water Column Depth	cm	60	60	60	60	60	60	60	60	60	60	60	60
C0 = Conc at 0 g/m2 P Storage	ppb	3	3	3	3	3	3	3	3	3	3	3	3
C1 = Conc at 1 g/m2 P storage	ppb	22	22	22	22	22	22	22	22	22	22	22	22
C2 = Conc at Half-Max Uptake	ppb	300	300	300	300	300	300	300	300	300	300	300	300
K = Net Settling Rate at Steady State	m/yr	16.8	43.7	16.8	43.7	16.8	43.7	16.8	43.7	16.8	43.7	16.8	43.7
Z1 = Saturated Uptake Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Z2 = Lower Penalty Depth	cm	100	100	100	100	100	100	100	100	100	100	100	100
Z3 = Upper Penalty Depth	cm	200	200	200	200	200	200	200	200	200	200	200	200

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	18.23	19.64	20.46	21.17	21.94	22.70	23.44	24.23	25.19	26.18	27.23	28.25	28.25
Run Date	-	10/12/06	10/12/06	10/12/06	10/12/06	10/12/06	10/12/06	10/12/06	10/12/06	10/12/06	10/12/06	10/12/06	10/12/06	10/12/06
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65
Starting Date for Output	-	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65
Ending Date	-	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00
Output Duration	days	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784
Cell Label		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	Total
Downstream Cell Label		1B	Outflow	2B	Outflow	3B	Outflow	4B	Outflow	5B	Outflow	6B	Outflow	-
Network Simulation Name	-	none	none	none	none	none	none	none	none	none	none	none	none	none
Simulation Type	-	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	9.77	14.66	9.77	14.66	9.77	14.66	140.22
Mean Rainfall	cm/yr	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	130.0
Mean ET	cm/yr	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.2
Cell Inflow Volume	hm3/yr	171.2	165.7	142.6	139.0	120.1	112.4	158.4	154.6	158.4	154.6	158.4	154.6	909.0
Cell Inflow Load	kg/yr	17603.3	8467.5	14661.5	7110.8	12349.6	5320.7	16279.3	8672.8	16279.3	8672.8	16279.3	8672.8	93452
Cell Inflow Conc	ppb	103	51	103	51	103	47	103	56	103	56	103	56	102.8
Treated Outflow Volume	hm3/yr	165.7	164.1	139.0	138.5	112.4	112.0	154.6	153.9	154.6	153.9	154.6	153.9	876.4
Treated Outflow Load	kg/yr	8467.5	1987.7	7110.8	1697.1	5320.7	1422.1	8672.8	1811.9	8672.8	1811.9	8672.8	1811.9	10542
Treated FWM Outflow Conc	ppb	51	12	51	12	47	13	56	12	56	12	56	12	12.0
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Outflow Volume + Bypass	hm3/yr	165.7	164.1	139.0	138.5	112.4	112.0	154.6	153.9	154.6	153.9	154.6	153.9	876.4
Total Outflow Load + Bypass	kg/yr	8467.5	1987.7	7110.8	1697.1	5320.7	1422.1	8672.8	1811.9	8672.8	1811.9	8672.8	1811.9	10542.5
Total FWM Outflow Conc	ppb	51.1	12.1	51.2	12.3	47.3	12.7	56.1	11.8	56.1	11.8	56.1	11.8	12.0
Bypass Load	kg/yr	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Bypass Load	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
Maximum Inflow	hm3/d	0.90	0.89	0.75	0.74	0.63	0.61	0.83	0.82	0.83	0.82	0.83	0.82	4.75
Maximum Outflow	hm3/d	0.89	0.89	0.74	0.75	0.61	0.61	0.82	0.83	0.82	0.83	0.82	0.83	4.75
Surface Load Reduction	kg/yr	9136	6480	7551	5414	7029	3899	7607	6861	7607	6861	7607	6861	82910
Load Trapped in Sediments	kg/yr	9107	6930	7629	5806	6622	4198	7633	7351	7633	7351	7633	7351	85243
Overall Load Reduction	%	52%	77%	52%	76%	57%	73%	47%	79%	47%	79%	47%	79%	89%
Lower Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Upper Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Daily Geometric Mean	ppb	44.3	8.4	44.6	8.5	43.5	8.6	48.8	8.1	48.8	8.1	48.8	8.1	#N/A
Outflow Geo Mean - Composites	ppb	46.2	10.3	46.2	10.5	42.9	11.0	50.8	10.0	50.8	10.0	50.8	10.0	10.3
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Frequency Outflow Conc > 10 ppb	%	100%	53%	100%	56%	100%	64%	100%	53%	100%	53%	100%	53%	53%
Frequency Outflow Conc > 20 ppb	%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	8%
Frequency Outflow Conc > 50 ppb	%	47%	0%	47%	0%	33%	0%	56%	0%	56%	0%	56%	0%	0%
Freq Outflow Volume > 10 ppb	%	100%	66%	100%	68%	100%	71%	100%	64%	100%	64%	100%	64%	66%
95th Percentile Outflow Conc	ppb	66.13	16.32	66.28	16.54	62.16	16.87	72.54	15.68	72.54	15.68	72.54	15.68	16
Mean Biomass P Storage	mg/m2	2345	605	2349	611	2184	581	2472	618	2472	618	2472	618	1387
Storage Increase / Net Removal	%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%
Net Storage Turnover Rate	1/yr	11.1	28.4	11.1	28.4	11.0	28.4	11.1	28.4	11.1	28.4	11.1	28.4	15.3
Unit Area P Load	mg/m2-yr	1431	600	1425	607	1285	596	1666	592	1666	592	1666	592	666
Unit Area P Removal	mg/m2-yr	741	491	742	496	689	471	781	502	781	502	781	502	608
Mean Water Load	cm/d	3.8	3.2	3.8	3.2	3.4	3.4	4.4	2.9	4.4	2.9	4.4	2.9	1.8
Max Water Load	cm/d	7.3	6.3	7.2	6.4	6.5	6.8	8.5	5.6	8.5	5.6	8.5	5.6	3.4
Mean Depth	cm	54	52	54	51	45	47	53	54	53	54	53	54	52
Minimum Depth	cm	39.1	33.7	38.3	33.1	28.5	29.5	39.1	35.1	39.1	35.1	39.1	35.1	35
Maximum Depth	cm	68.2	64.8	68.1	63.9	57.0	57.8	67.1	68.8	67.1	68.8	67.1	68.8	66
Frequency Depth < 10 cm	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%
Flow/Width	m2/day	137	101	135	95	67	63	130	127	130	127	130	127	115.7
HRT Days	days	14.1	16.1	14.1	15.7	13.3	13.5	11.9	18.9	11.9	18.9	11.9	18.9	29.5
Mean Velocity	cm/sec	0.30	0.23	0.29	0.21	0.17	0.16	0.28	0.27	0.28	0.27	0.28	0.27	0.25
Seepage Outflow / Total Outflow	%	3%	1%	2%	0%	6%	0%	2%	0%	2%	0%	2%	0%	3%
Release 1 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Release 2 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
95th Percentile Outflow Volume	hm3/d	0.8	0.8	0.7	0.7	0.6	0.6	0.8	0.8	0.8	0.8	0.8	0.8	4.5
95th Percentile Outflow Load	kg/d	48.2	12.5	40.5	10.7	30.9	9.0	48.5	11.3	48.5	11.3	48.5	11.3	66.2
Simulated / Specified Mean Depth	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 1 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 2 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Outflow Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Range Check - Mean Depth	-													0
Range Check - Freq Depth < 10 cm	-													0
Range Check - Flow/Width	-													0
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-													0
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mass Balance Error	%	0.01%	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%

Input Variable	Units	Value	Case Description:
Design Case Name	-	STA34_15_1	STA-3/4 and the new EAASR STA
Input Series Name		TS_STA34	Inflows distributed uniformly based on area
Starting Date for Simulation	-	01/01/65	New STA hydraulics based on average of existing STA-3/4 hydraulics
Ending Date for Simulation	-	04/30/00	Lake Okeechobee deliveries at 150 ppb
Starting Date for Output	-	05/01/65	The effective treatment area of the new STA, in acres, is estimated at 12,620
Integration Steps Per Day	-	4	Simulation Type: Base
Number of Iterations	-	3	
Output Averaging Interval	days	365	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	15.0	#N/A	#N/A
GM Outflow C (ppb)	12.8	#N/A	#N/A
Load Reduction %	86%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	0	

Cell Number -->		1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Vegetation Type	-->	EMG_3	none	EMG_3	none	EMG_3	none	EMG_3	none	EMG_3	none	EMG_3	none
Inflow Fraction	-	0.223777561		0.186381045		0.156991		0.144291		0.1442912		0.144291	
Downstream Cell Number	-	2		4		6		8		10		12.00	
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	6.81	10.22	6.81	10.22	6.81	10.22
Mean Width of Flow Path	km	3.42	4.50	2.89	4.02	4.88	4.88	3.33	3.33	3.33	3.33	3.33	3.33
Number of Tanks in Series	-	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Depth for Releases	cm												
Release 1 Series Name													
Release 2 Series Name													
Outflow Series Name													
Depth Series Name													
Outflow Control Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Outflow Weir Depth	cm												
Outflow Coefficient - Exponent	-	4	4	4	4	4	4	4	4	4	4	4	4
Outflow Coefficient - Intercept	-	1	1	1	1	1	1	1	1	1	1	1	1
Bypass Depth	cm												
Maximum Inflow	hm3/day												
Maximum Outflow	hm3/day												
Inflow Seepage Rate	(cm/d) / cm												
Inflow Seepage Control Elev	cm												
Inflow Seepage Conc	ppb												
Outflow Seepage Rate	(cm/d) / cm	0.0058	0.0029	0.0014		0.0038		0.0035		0.0035		0.0035	
Outflow Seepage Control Elev	cm	16	40	-67		-64							
Max Outflow Seepage Conc	ppb	20	20	20	20	20	20	20	20	20	20	20	20
Seepage Recycle to Cell Number	-	1		3		5		7		9		11	
Seepage Recycle Fraction	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Seepage Discharge Fraction	-												
Initial Water Column Conc	ppb	52	12	55	15	55	15	55	15	55	15	55	15
Initial P Storage Per Unit Area	mg/m2	2400	615	2400	615	2400	615	2400	615	2400	615	2400	615
Initial Water Column Depth	cm	60	60	60	60	60	60	60	60	60	60	60	60
C0 = Conc at 0 g/m2 P Storage	ppb	3	3	3	3	3	3	3	3	3	3	3	3
C1 = Conc at 1 g/m2 P storage	ppb	22	22	22	22	22	22	22	22	22	22	22	22
C2 = Conc at Half-Max Uptake	ppb	300	300	300	300	300	300	300	300	300	300	300	300
K = Net Settling Rate at Steady State	m/yr	16.8	43.7	16.8	43.7	16.8	43.7	16.8	43.7	16.8	43.7	16.8	43.7
Z1 = Saturated Uptake Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Z2 = Lower Penalty Depth	cm	100	100	100	100	100	100	100	100	100	100	100	100
Z3 = Upper Penalty Depth	cm	200	200	200	200	200	200	200	200	200	200	200	200

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	18.09	18.77	19.47	20.12	20.80	21.57	22.25	22.93	23.63	24.37	25.19	26.07	26.07
Run Date	-	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65
Starting Date for Output	-	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65
Ending Date	-	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00
Output Duration	days	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784
Cell Label		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	Total
Downstream Cell Label		1B	Outflow	2B	Outflow	3B	Outflow	4B	Outflow	5B	Outflow	6B	Outflow	-
Network Simulation Name	-	none	none	none	none	none	none	none	none	none	none	none	none	none
Simulation Type	-	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	6.81	10.22	6.81	10.22	6.81	10.22	118.04
Mean Rainfall	cm/yr	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	130.0
Mean ET	cm/yr	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.2
Cell Inflow Volume	hm3/yr	203.4	197.7	169.4	165.7	142.7	134.9	131.2	128.6	131.2	128.6	131.2	128.6	909.1
Cell Inflow Load	kg/yr	20912.1	11171.6	17417.4	9382.4	14670.9	7131.7	13484.1	7907.2	13484.1	7907.2	13484.1	7907.2	93453
Cell Inflow Conc	ppb	103	57	103	57	103	53	103	61	103	61	103	61	102.8
Treated Outflow Volume	hm3/yr	197.7	195.9	165.7	165.2	134.9	134.5	128.6	128.2	128.6	128.2	128.6	128.2	880.2
Treated Outflow Load	kg/yr	11171.6	2931.9	9382.4	2502.7	7131.7	2107.8	7907.2	1884.8	7907.2	1884.8	7907.2	1884.8	13197
Treated FWM Outflow Conc	ppb	57	15	57	15	53	16	61	15	61	15	61	15	15.0
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Outflow Volume + Bypass	hm3/yr	197.7	195.9	165.7	165.2	134.9	134.5	128.6	128.2	128.6	128.2	128.6	128.2	880.2
Total Outflow Load + Bypass	kg/yr	11171.6	2931.9	9382.4	2502.7	7131.7	2107.8	7907.2	1884.8	7907.2	1884.8	7907.2	1884.8	13196.7
Total FWM Outflow Conc	ppb	56.5	15.0	56.6	15.1	52.9	15.7	61.5	14.7	61.5	14.7	61.5	14.7	15.0
Bypass Load	kg/yr	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Bypass Load	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
Maximum Inflow	hm3/d	1.06	1.05	0.89	0.88	0.75	0.73	0.69	0.68	0.69	0.68	0.69	0.68	4.75
Maximum Outflow	hm3/d	1.05	1.06	0.88	0.89	0.73	0.73	0.68	0.69	0.68	0.69	0.68	0.69	4.75
Surface Load Reduction	kg/yr	9741	8240	8035	6880	7539	5024	5577	6022	5577	6022	5577	6022	80256
Load Trapped in Sediments	kg/yr	9660	8680	8094	7272	7101	5323	5597	6364	5597	6364	5597	6364	82011
Overall Load Reduction	%	47%	74%	46%	73%	51%	70%	41%	76%	41%	76%	41%	76%	86%
Lower Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Upper Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Daily Geometric Mean	ppb	49.0	10.3	49.3	10.5	48.5	10.6	53.7	10.1	53.7	10.1	53.7	10.1	#N/A
Outflow Geo Mean - Composites	ppb	51.1	12.6	51.2	12.8	47.9	13.5	55.7	12.6	55.7	12.6	55.7	12.6	12.8
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Frequency Outflow Conc > 10 ppb	%	100%	75%	100%	75%	100%	83%	100%	72%	100%	72%	100%	72%	75%
Frequency Outflow Conc > 20 ppb	%	100%	6%	100%	6%	100%	8%	100%	6%	100%	6%	100%	6%	36%
Frequency Outflow Conc > 50 ppb	%	56%	0%	56%	0%	53%	0%	64%	0%	64%	0%	64%	0%	6%
Freq Outflow Volume > 10 ppb	%	100%	82%	100%	82%	100%	85%	100%	81%	100%	81%	100%	81%	82%
95th Percentile Outflow Conc	ppb	73.01	20.42	73.19	20.69	68.25	21.15	79.05	19.71	79.05	19.71	79.05	19.71	20
Mean Biomass P Storage	mg/m2	2486	757	2490	764	2340	735	2598	766	2598	766	2598	766	1537
Storage Increase / Net Removal	%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%
Net Storage Turnover Rate	1/yr	11.1	28.4	11.1	28.4	11.1	28.4	11.1	28.5	11.1	28.5	11.1	28.5	15.8
Unit Area P Load	mg/m2-yr	1700	791	1693	801	1527	800	1979	774	1979	774	1979	774	792
Unit Area P Removal	mg/m2-yr	785	615	787	621	739	597	822	623	822	623	822	623	695
Mean Water Load	cm/d	4.5	3.8	4.5	3.9	4.1	4.1	5.3	3.4	5.3	3.4	5.3	3.4	2.1
Max Water Load	cm/d	8.6	7.5	8.6	7.6	7.8	8.2	10.1	6.7	10.1	6.7	10.1	6.7	4.0
Mean Depth	cm	56	54	55	53	47	48	51	52	51	52	51	52	52
Minimum Depth	cm	40.4	35.4	39.9	34.6	30.7	30.2	38.6	34.7	38.6	34.7	38.6	34.7	36
Maximum Depth	cm	70.9	67.5	70.8	66.5	59.3	60.2	63.7	65.3	63.7	65.3	63.7	65.3	66
Frequency Depth < 10 cm	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%
Flow/Width	m2/day	163	120	161	113	80	76	108	106	108	106	108	106	114.9
HRT Days	days	12.3	14.0	12.3	13.6	11.5	11.6	9.6	15.1	9.6	15.1	9.6	15.1	24.7
Mean Velocity	cm/sec	0.34	0.26	0.34	0.25	0.20	0.18	0.25	0.24	0.25	0.24	0.25	0.24	0.25
Seepage Outflow / Total Outflow	%	3%	1%	2%	0%	5%	0%	2%	0%	2%	0%	2%	0%	3%
Release 1 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Release 2 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
95th Percentile Outflow Volume	hm3/d	1.0	1.0	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	4.5
95th Percentile Outflow Load	kg/d	62.5	18.4	52.6	15.7	40.6	13.2	43.5	11.6	43.5	11.6	43.5	11.6	82.1
Simulated / Specified Mean Depth	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 1 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 2 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Outflow Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Range Check - Mean Depth	-													0
Range Check - Freq Depth < 10 cm	-													0
Range Check - Flow/Width	-													0
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-													0
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mass Balance Error	%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%

Input Variable	Units	Value	Case Description:
Design Case Name	-	STA34_19_2	STA-3/4 and the new EAASR STA
Input Series Name		TS_STA34	Inflows distributed uniformly based on area
Starting Date for Simulation	-	01/01/65	New STA hydraulics based on average of existing STA-3/4 hydraulics
Ending Date for Simulation	-	04/30/00	Lake Okeechobee deliveries at 150 ppb
Starting Date for Output	-	05/01/65	The effective treatment area of the new STA, in acres, is estimated at 7,726
Integration Steps Per Day	-	4	Simulation Type: Base
Number of Iterations	-	3	
Output Averaging Interval	days	365	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	19.0	#N/A	#N/A
GM Outflow C (ppb)	16.1	#N/A	#N/A
Load Reduction %	82%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	0	

Cell Number -->		1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Vegetation Type	-->	EMG_3	none	EMG_3	none	EMG_3	none	EMG_3	none	EMG_3	none	EMG_3	none
Inflow Fraction	-	0.268920486		0.223979926		0.188661		0.106156		0.1061555		0.106156	
Downstream Cell Number	-	2		4		6		8		10		12.00	
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	4.17	6.26	4.17	6.26	4.17	6.26
Mean Width of Flow Path	km	3.42	4.50	2.89	4.02	4.88	4.88	3.33	3.33	3.33	3.33	3.33	3.33
Number of Tanks in Series	-	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Depth for Releases	cm												
Release 1 Series Name													
Release 2 Series Name													
Outflow Series Name													
Depth Series Name													
Outflow Control Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Outflow Weir Depth	cm												
Outflow Coefficient - Exponent	-	4	4	4	4	4	4	4	4	4	4	4	4
Outflow Coefficient - Intercept	-	1	1	1	1	1	1	1	1	1	1	1	1
Bypass Depth	cm												
Maximum Inflow	hm3/day												
Maximum Outflow	hm3/day												
Inflow Seepage Rate	(cm/d) / cm												
Inflow Seepage Control Elev	cm												
Inflow Seepage Conc	ppb												
Outflow Seepage Rate	(cm/d) / cm	0.0058	0.0029	0.0014		0.0038		0.0035		0.0035		0.0035	
Outflow Seepage Control Elev	cm	16	40	-67		-64							
Max Outflow Seepage Conc	ppb	20	20	20	20	20	20	20	20	20	20	20	20
Seepage Recycle to Cell Number	-	1		3		5		7		9		11	
Seepage Recycle Fraction	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Seepage Discharge Fraction	-												
Initial Water Column Conc	ppb	52	12	55	15	55	15	55	15	55	15	55	15
Initial P Storage Per Unit Area	mg/m2	2400	615	2400	615	2400	615	2400	615	2400	615	2400	615
Initial Water Column Depth	cm	60	60	60	60	60	60	60	60	60	60	60	60
C0 = Conc at 0 g/m2 P Storage	ppb	3	3	3	3	3	3	3	3	3	3	3	3
C1 = Conc at 1 g/m2 P storage	ppb	22	22	22	22	22	22	22	22	22	22	22	22
C2 = Conc at Half-Max Uptake	ppb	300	300	300	300	300	300	300	300	300	300	300	300
K = Net Settling Rate at Steady State	m/yr	16.8	43.7	16.8	43.7	16.8	43.7	16.8	43.7	16.8	43.7	16.8	43.7
Z1 = Saturated Uptake Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Z2 = Lower Penalty Depth	cm	100	100	100	100	100	100	100	100	100	100	100	100
Z3 = Upper Penalty Depth	cm	200	200	200	200	200	200	200	200	200	200	200	200

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	19.16	19.84	20.52	21.34	22.36	23.38	24.26	25.28	26.30	27.26	28.53	29.35	29.35
Run Date	-	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65
Starting Date for Output	-	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65
Ending Date	-	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00
Output Duration	days	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784
Cell Label		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	Total
Downstream Cell Label		1B	Outflow	2B	Outflow	3B	Outflow	4B	Outflow	5B	Outflow	6B	Outflow	-
Network Simulation Name	-	none	none	none	none	none	none	none	none	none	none	none	none	none
Simulation Type	-	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	4.17	6.26	4.17	6.26	4.17	6.26	98.22
Mean Rainfall	cm/yr	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	130.0
Mean ET	cm/yr	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.2
Cell Inflow Volume	hm3/yr	244.5	238.5	203.6	199.9	171.5	163.5	96.5	95.0	96.5	95.0	96.5	95.0	909.1
Cell Inflow Load	kg/yr	25130.8	14794.9	20931.1	12424.2	17630.5	9577.4	9920.3	6352.0	9920.3	6352.0	9920.3	6352.0	93453
Cell Inflow Conc	ppb	103	62	103	62	103	59	103	67	103	67	103	67	102.8
Treated Outflow Volume	hm3/yr	238.5	236.6	199.9	199.3	163.5	163.2	95.0	94.8	95.0	94.8	95.0	94.8	883.3
Treated Outflow Load	kg/yr	14794.9	4450.1	12424.2	3795.6	9577.4	3207.4	6352.0	1775.7	6352.0	1775.7	6352.0	1775.7	16780
Treated FWM Outflow Conc	ppb	62	19	62	19	59	20	67	19	67	19	67	19	19.0
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Outflow Volume + Bypass	hm3/yr	238.5	236.6	199.9	199.3	163.5	163.2	95.0	94.8	95.0	94.8	95.0	94.8	883.3
Total Outflow Load + Bypass	kg/yr	14794.9	4450.1	12424.2	3795.6	9577.4	3207.4	6352.0	1775.7	6352.0	1775.7	6352.0	1775.7	16780.1
Total FWM Outflow Conc	ppb	62.0	18.8	62.2	19.0	58.6	19.7	66.8	18.7	66.8	18.7	66.8	18.7	19.0
Bypass Load	kg/yr	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Bypass Load	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
Maximum Inflow	hm3/d	1.28	1.27	1.06	1.06	0.90	0.88	0.50	0.50	0.50	0.50	0.50	0.50	4.75
Maximum Outflow	hm3/d	1.27	1.27	1.06	1.07	0.88	0.89	0.50	0.51	0.50	0.51	0.50	0.51	4.75
Surface Load Reduction	kg/yr	10336	10345	8507	8629	8053	6370	3568	4576	3568	4576	3568	4576	76673
Load Trapped in Sediments	kg/yr	10201	10770	8549	9020	7560	6669	3586	4785	3586	4785	3586	4785	77885
Overall Load Reduction	%	41%	70%	41%	69%	46%	67%	36%	72%	36%	72%	36%	72%	82%
Lower Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Upper Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Daily Geometric Mean	ppb	53.8	13.0	54.2	13.1	53.4	13.4	58.5	12.7	58.5	12.7	58.5	12.7	#N/A
Outflow Geo Mean - Composites	ppb	56.2	15.8	56.3	16.0	53.0	16.7	60.8	16.1	60.8	16.1	60.8	16.1	16.1
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Frequency Outflow Conc > 10 ppb	%	100%	86%	100%	89%	100%	94%	100%	94%	100%	94%	100%	94%	92%
Frequency Outflow Conc > 20 ppb	%	100%	28%	100%	31%	100%	33%	100%	25%	100%	25%	100%	25%	58%
Frequency Outflow Conc > 50 ppb	%	64%	0%	64%	0%	58%	0%	78%	0%	78%	0%	78%	0%	28%
Freq Outflow Volume > 10 ppb	%	100%	90%	100%	90%	100%	92%	100%	91%	100%	91%	100%	91%	91%
95th Percentile Outflow Conc	ppb	79.64	25.72	79.86	26.09	75.38	26.68	85.17	25.26	85.17	25.26	85.17	25.26	26
Mean Biomass P Storage	mg/m2	2623	937	2628	946	2489	919	2717	939	2717	939	2717	939	1704
Storage Increase / Net Removal	%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%	0%	-1%
Net Storage Turnover Rate	1/yr	11.1	28.5	11.1	28.5	11.1	28.5	11.1	28.5	11.1	28.5	11.1	28.5	16.3
Unit Area P Load	mg/m2-yr	2043	1048	2035	1061	1835	1074	2379	1015	2379	1015	2379	1015	951
Unit Area P Removal	mg/m2-yr	829	763	831	770	787	748	860	765	860	765	860	765	793
Mean Water Load	cm/d	5.4	4.6	5.4	4.7	4.9	5.0	6.3	4.2	6.3	4.2	6.3	4.2	2.5
Max Water Load	cm/d	10.4	9.0	10.3	9.1	9.3	9.9	12.1	8.0	12.1	8.0	12.1	8.0	4.8
Mean Depth	cm	57	56	57	55	48	50	48	49	48	49	48	49	52
Minimum Depth	cm	41.6	37.6	41.2	36.8	32.9	31.8	37.9	34.3	37.9	34.3	37.9	34.3	37
Maximum Depth	cm	73.9	70.5	73.8	69.4	61.8	62.8	58.8	60.1	58.8	60.1	58.8	60.1	66
Frequency Depth < 10 cm	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%
Flow/Width	m2/day	196	145	193	136	96	92	79	78	79	78	79	78	124.6
HRT Days	days	10.6	12.0	10.6	11.7	9.9	9.9	7.6	11.7	7.6	11.7	7.6	11.7	20.7
Mean Velocity	cm/sec	0.39	0.30	0.39	0.29	0.23	0.21	0.19	0.19	0.19	0.19	0.19	0.19	0.27
Seepage Outflow / Total Outflow	%	2%	1%	2%	0%	4%	0%	1%	0%	1%	0%	1%	0%	2%
Release 1 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Release 2 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
95th Percentile Outflow Volume	hm3/d	1.2	1.2	1.0	1.0	0.8	0.8	0.5	0.5	0.5	0.5	0.5	0.5	4.5
95th Percentile Outflow Load	kg/d	81.6	27.6	68.6	23.5	53.5	19.9	34.5	10.7	34.5	10.7	34.5	10.7	103.1
Simulated / Specified Mean Depth	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 1 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 2 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Outflow Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Range Check - Mean Depth	-													0
Range Check - Freq Depth < 10 cm	-													0
Range Check - Flow/Width	-													0
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-													0
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mass Balance Error	%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%

Input Variable	Units	Value
Design Case Name	-	A1
Input Series Name		TS_A1
Starting Date for Simulation	-	01/01/65
Ending Date for Simulation	-	04/30/00
Starting Date for Output	-	05/01/65
Integration Steps Per Day	-	4
Number of Iterations	-	0
Output Averaging Interval	days	365
Inflow Conc Scale Factor	-	1
Rainfall P Conc	ppb	10
Atmospheric P Load (Dry)	mg/m2-yr	20
Cell Number -->		**1**
Cell Label	-	1
Vegetation Type	-->	none
Inflow Fraction	-	1
Downstream Cell Number	-	
Surface Area	km2	61.54
Mean Width of Flow Pa	km	6.70
Number of Tanks in Series	-	1.0
Minimum Depth for Releases	cm	15
Release 1 Series Name		IRRIG
Release 2 Series Name		TO_A2
Outflow Series Name		TO_STA
Depth Series Name		A1_DEPTH
Outflow Control Depth	cm	
Outflow Weir Depth	cm	
Outflow Coefficient - Exponent	-	1.5
Outflow Coefficient - Intercept	-	8
Bypass Depth	cm	
Maximum Inflow	hm3/day	
Maximum Outflow	hm3/day	9.05233
Inflow Seepage Rate	(cm/d) / cm	
Inflow Seepage Control Elev	cm	
Inflow Seepage Conc	ppb	
Outflow Seepage Rate	(cm/d) / cm	0.00081
Outflow Seepage Control Elev	cm	6
Max Outflow Seepage Conc	ppb	100
Seepage Recycle to Cell Number	-	1
Seepage Recycle Fraction	-	0.75
Seepage Discharge Fraction	-	
Initial Water Column Conc	ppb	105
Initial P Storage Per Unit Area	mg/m2	525
Initial Water Column Depth	cm	150
C0 = Conc at 0 g/m2 P Storage	ppb	3
C1 = Conc at 1 g/m2 P storage	ppb	150
C2 = Conc at Half-Max Uptake	ppb	
K = Net Settling Rate at Steady State	m/yr	9.0
Z1 = Saturated Uptake Depth	cm	40
Z2 = Lower Penalty Depth	cm	100
Z3 = Upper Penalty Depth	cm	400

Case Description:

Compartment A-1
15,200 acres (from A8)
Inflow volumes, outflow volumes, and depths from SFWMM simulation
Tested series compare DMSTA simulation with independent sfwmm simulation

Simulation Type:

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	96.5	#N/A	#N/A
GM Outflow C (ppb)	76.1	#N/A	#N/A
Load Reduction %	21%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	0	

Output Variables	Units	1	Overall
Execution Time	sec/yr	1.33	1.33
Run Date	-	10/13/06	10/13/06
Starting Date for Simulation	-	01/01/65	01/01/65
Starting Date for Output	-	05/01/65	05/01/65
Ending Date	-	04/30/00	04/30/00
Output Duration	days	12784	12784
Cell Label		1	Total
Downstream Cell Label		Outflow	-
Network Simulation Name	-	EAASR_NET	EAASR_NE
Simulation Type	-	Base	Base
Surface Area	km2	61.54	61.54
Mean Rainfall	cm/yr	130.73	130.7
Mean ET	cm/yr	135.34	135.3
Cell Inflow Volume	hm3/yr	717.8	717.8
Cell Inflow Load	kg/yr	87205.1	87205
Cell Inflow Conc	ppb	121	121.5
Treated Outflow Volume	hm3/yr	578.3	578.3
Treated Outflow Load	kg/yr	55795.5	55796
Treated FWM Outflow Conc	ppb	96	96.5
Upper Confidence Limit	ppb	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A
Total Outflow Volume + Bypass	hm3/yr	701.7	701.7
Total Outflow Load + Bypass	kg/yr	68849.9	68849.9
Total FWM Outflow Conc	ppb	98.1	98.1
Bypass Load	kg/yr	0	0.0
Bypass Load	%	0%	0.0
Maximum Inflow	hm3/d	4.33	4.33
Maximum Outflow	hm3/d	3.99	3.99
Surface Load Reduction	kg/yr	31410	31410
Load Trapped in Sediments	kg/yr	18519	18519
Overall Load Reduction	%	21%	21%
Lower Confidence Limit	%	#N/A	#N/A
Upper Confidence Limit	%	#N/A	#N/A
Daily Geometric Mean	ppb	69.0	#N/A
Outflow Geo Mean - Composites	ppb	76.1	76.1
Upper Confidence Limit	ppb	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A
Frequency Outflow Conc > 10 ppb	%	100%	100%
Frequency Outflow Conc > 20 ppb	%	100%	100%
Frequency Outflow Conc > 50 ppb	%	83%	100%
Freq Outflow Volume > 10 ppb	%	82%	82%
95th Percentile Outflow Conc	ppb	130.61	131
Mean Biomass P Storage	mg/m2	493	493
Storage Increase / Net Removal	%	1%	1%
Net Storage Turnover Rate	1/yr	21.4	21.4
Unit Area P Load	mg/m2-yr	1417	1417
Unit Area P Removal	mg/m2-yr	301	301
Mean Water Load	cm/d	3.2	3.2
Max Water Load	cm/d	7.0	7.0
Mean Depth	cm	222	222
Minimum Depth	cm	31.3	31
Maximum Depth	cm	365.4	365
Frequency Depth < 10 cm	%	0%	0.0%
Flow/Width	m2/day	293	293.3
HRT Days	days	69.6	69.6
Mean Velocity	cm/sec	0.15	0.15
Seepage Outflow / Total Outflow	%	1%	2%
Release 1 Outflow Volume	hm3/yr	0.00	0.0
Release 2 Outflow Volume	hm3/yr	123.43	123.4
95th Percentile Outflow Volume	hm3/d	3.2	3.2
95th Percentile Outflow Load	kg/d	404.0	404.0
Simulated / Specified Mean Depth	%	99%	1.0
Release 1 Demand Met	%	#N/A	#N/A
Release 2 Demand Met	%	98%	1.0
Outflow Demand Met	%	101%	1.0
Range Check - Mean Depth	-		0
Range Check - Freq Depth < 10 cm	-		0
Range Check - Flow/Width	-		0
Range Check - Inflow Conc	-		0
Range Check - Outflow Conc	-		0
Water Balance Error	%	0.00%	0.00%
Mass Balance Error	%	0.00%	0.00%

Input Variable	Units	Value	Case Description:
Design Case Name	-	A2	Compartment A-2
Input Series Name		TS_A2	13,775 acres of effective area
Starting Date for Simulation	-	01/01/65	Inflow volumes, outflow volumes, and depths from SFWMM simulation
Ending Date for Simulation	-	04/30/00	Tested series compare DMSTA simulation with independent sfwmm simulation
Starting Date for Output	-	05/01/65	
Integration Steps Per Day	-	4	Simulation Type:
Number of Iterations	-	0	
Output Averaging Interval	days	365	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	62.3	#N/A	#N/A
GM Outflow C (ppb)	64.6	#N/A	#N/A
Load Reduction %	31%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	0	

Cell Number -->		1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	-	RES_A2											
Vegetation Type	-->	none											
Inflow Fraction	-	1											
Downstream Cell Number	-												
Surface Area	km2	55.77											
Mean Width of Flow Pa	km	10.00											
Number of Tanks in Series	-	1.0											
Minimum Depth for Releases	cm	15											
Release 1 Series Name		IRRIG											
Release 2 Series Name													
Outflow Series Name		TO_A1											
Depth Series Name		A2_DEPTH											
Outflow Control Depth	cm												
Outflow Weir Depth	cm												
Outflow Coefficient - Exponent	-	1.5											
Outflow Coefficient - Intercept	-	8											
Bypass Depth	cm												
Maximum Inflow	hm3/day												
Maximum Outflow	hm3/day	7.829											
Inflow Seepage Rate	(cm/d) / cm												
Inflow Seepage Control Elev	cm												
Inflow Seepage Conc	ppb												
Outflow Seepage Rate	(cm/d) / cm	0.000778											
Outflow Seepage Control Elev	cm	6											
Max Outflow Seepage Conc	ppb	100											
Seepage Recycle to Cell Number	-	1											
Seepage Recycle Fraction	-	0.75											
Seepage Discharge Fraction	-												
Initial Water Column Conc	ppb	90											
Initial P Storage Per Unit Area	mg/m2	375											
Initial Water Column Depth	cm	200											
C0 = Conc at 0 g/m2 P Storage	ppb	3											
C1 = Conc at 1 g/m2 P storage	ppb	150											
C2 = Conc at Half-Max Uptake	ppb												
K = Net Settling Rate at Steady State	m/yr	9.0											
Z1 = Saturated Uptake Depth	cm	40											
Z2 = Lower Penalty Depth	cm	100											
Z3 = Upper Penalty Depth	cm	400											

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	1.36												1.36
Run Date	-	10/13/06												10/13/06
Starting Date for Simulation	-	01/01/65												01/01/65
Starting Date for Output	-	05/01/65												05/01/65
Ending Date	-	04/30/00												04/30/00
Output Duration	days	12784												12784
Cell Label		RES_A2												Total
Downstream Cell Label		Outflow												
Network Simulation Name	-	EAASR_NET												EAASR_NET
Simulation Type	-	Base												Base
Surface Area	km2	55.77												55.77
Mean Rainfall	cm/yr	128.19												128.2
Mean ET	cm/yr	137.71												137.7
Cell Inflow Volume	hm3/yr	460.7												460.7
Cell Inflow Load	kg/yr	41383.2												41383
Cell Inflow Conc	ppb	90												89.8
Treated Outflow Volume	hm3/yr	232.9												232.9
Treated Outflow Load	kg/yr	14517.4												14517
Treated FWM Outflow Conc	ppb	62												62.3
Upper Confidence Limit	ppb	#N/A												#N/A
Lower Confidence Limit	ppb	#N/A												#N/A
Total Outflow Volume + Bypass	hm3/yr	441.8												441.8
Total Outflow Load + Bypass	kg/yr	28757.0												28757.0
Total FWM Outflow Conc	ppb	65.1												65.1
Bypass Load	kg/yr	0												0.0
Bypass Load	%	0%												0.0
Maximum Inflow	hm3/d	1.90												1.90
Maximum Outflow	hm3/d	1.30												1.30
Surface Load Reduction	kg/yr	26866												26866
Load Trapped in Sediments	kg/yr	13277												13277
Overall Load Reduction	%	31%												31%
Lower Confidence Limit	%	#N/A												#N/A
Upper Confidence Limit	%	#N/A												#N/A
Daily Geometric Mean	ppb	66.0												#N/A
Outflow Geo Mean - Composites	ppb	64.6												64.6
Upper Confidence Limit	ppb	#N/A												#N/A
Lower Confidence Limit	ppb	#N/A												#N/A
Frequency Outflow Conc > 10 ppb	%	100%												100%
Frequency Outflow Conc > 20 ppb	%	100%												100%
Frequency Outflow Conc > 50 ppb	%	89%												100%
Freq Outflow Volume > 10 ppb	%	53%												53%
95th Percentile Outflow Conc	ppb	86.41												86
Mean Biomass P Storage	mg/m2	409												409
Storage Increase / Net Removal	%	1%												1%
Net Storage Turnover Rate	1/yr	20.4												20.4
Unit Area P Load	mg/m2-yr	742												742
Unit Area P Removal	mg/m2-yr	238												238
Mean Water Load	cm/d	2.3												2.3
Max Water Load	cm/d	3.4												3.4
Mean Depth	cm	260												260
Minimum Depth	cm	50.9												51
Maximum Depth	cm	391.6												392
Frequency Depth < 10 cm	%	0%												0.0%
Flow/Width	m2/day	126												126.1
HRT Days	days	115.1												115.1
Mean Velocity	cm/sec	0.06												0.06
Seepage Outflow / Total Outflow	%	2%												4%
Release 1 Outflow Volume	hm3/yr	208.92												208.9
Release 2 Outflow Volume	hm3/yr	0.00												0.0
95th Percentile Outflow Volume	hm3/d	1.2												1.2
95th Percentile Outflow Load	kg/d	68.2												68.2
Simulated / Specified Mean Depth	%	99%												1.0
Release 1 Demand Met	%	97%												1.0
Release 2 Demand Met	%	#N/A												#N/A
Outflow Demand Met	%	101%												1.0
Range Check - Mean Depth	-													0
Range Check - Freq Depth < 10 cm	-													0
Range Check - Flow/Width	-													0
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-													0
Water Balance Error	%	0.00%												0.00%
Mass Balance Error	%	0.00%												0.00%

Input Variable	Units	Value	Case Description:
Design Case Name	-	STA34	STA-3/4 and the new EAASR STA
Input Series Name		TS_STA34	Inflows distributed uniformly based on area
Starting Date for Simulation	-	01/01/65	New STA hydraulics based on average of existing STA-3/4 hydraulics
Ending Date for Simulation	-	04/30/00	Lake Okeechobee deliveries at 150 ppb
Starting Date for Output	-	05/01/65	The effective treatment area of the new STA, in acres, is estimated at 14,640
Integration Steps Per Day	-	4	
Number of Iterations	-	3	
Output Averaging Interval	days	365	
Inflow Conc Scale Factor	-	1	
Rainfall P Conc	ppb	10	
Atmospheric P Load (Dry)	mg/m2-yr	20	

Simulation Type:

Output Variable	Mean	Lower CL	Upper CL
FWM Outflow C (ppb)	11.8	#N/A	#N/A
GM Outflow C (ppb)	10.0	#N/A	#N/A
Load Reduction %	88%	#N/A	#N/A
Bypass Load (%)	0.0%		

Diagnostics		
H20 Balance Error Mean & Max	0.0%	0.0%
Mass Balance Error Mean & Max	0.0%	0.0%
Iterations & Convergence	3	0.0%
Warning/Error Messages	18	

Cell Number -->		1	2	3	4	5	6	7	8	9	10	11	12
Cell Label	-	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Vegetation Type	-->	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3	EMG_3	SAV_3
Inflow Fraction	-	0.211928632		0.176512247		0.148678		0.154301		0.1543009		0.154301	
Downstream Cell Number	-	2		4		6		8		10		12.00	
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	7.69	11.54	7.69	11.54	7.69	11.54
Mean Width of Flow Path	km	3.42	4.50	2.89	4.02	4.88	4.88	3.33	3.33	3.33	3.33	3.33	3.33
Number of Tanks in Series	-	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Depth for Releases	cm												
Release 1 Series Name													
Release 2 Series Name													
Outflow Series Name													
Depth Series Name													
Outflow Control Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Outflow Weir Depth	cm												
Outflow Coefficient - Exponent	-	4	4	4	4	4	4	4	4	4	4	4	4
Outflow Coefficient - Intercept	-	1	1	1	1	1	1	1	1	1	1	1	1
Bypass Depth	cm												
Maximum Inflow	hm3/day												
Maximum Outflow	hm3/day												
Inflow Seepage Rate	(cm/d) / cm												
Inflow Seepage Control Elev	cm												
Inflow Seepage Conc	ppb												
Outflow Seepage Rate	(cm/d) / cm	0.0058	0.0029	0.0014		0.0038		0.0035		0.0035		0.0035	
Outflow Seepage Control Elev	cm	16	40	-67		-64							
Max Outflow Seepage Conc	ppb	20	20	20	20	20	20	20	20	20	20	20	20
Seepage Recycle to Cell Number	-	1		3		5		7		9		11	
Seepage Recycle Fraction	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Seepage Discharge Fraction	-												
Initial Water Column Conc	ppb	52	12	55	15	55	15	55	15	55	15	55	15
Initial P Storage Per Unit Area	mg/m2	2400	615	2400	615	2400	615	2400	615	2400	615	2400	615
Initial Water Column Depth	cm	60	60	60	60	60	60	60	60	60	60	60	60
C0 = Conc at 0 g/m2 P Storage	ppb	3	3	3	3	3	3	3	3	3	3	3	3
C1 = Conc at 1 g/m2 P storage	ppb	22	22	22	22	22	22	22	22	22	22	22	22
C2 = Conc at Half-Max Uptake	ppb	300	300	300	300	300	300	300	300	300	300	300	300
K = Net Settling Rate at Steady State	m/yr	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5	16.8	52.5
Z1 = Saturated Uptake Depth	cm	40	40	40	40	40	40	40	40	40	40	40	40
Z2 = Lower Penalty Depth	cm	100	100	100	100	100	100	100	100	100	100	100	100
Z3 = Upper Penalty Depth	cm	200	200	200	200	200	200	200	200	200	200	200	200

Output Variables	Units	1	2	3	4	5	6	7	8	9	10	11	12	Overall
Execution Time	sec/yr	29.81	31.16	32.58	33.71	35.30	37.48	38.83	40.02	41.35	42.60	43.87	45.26	45.26
Run Date	-	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06	10/13/06
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65	01/01/65
Starting Date for Output	-	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65	05/01/65
Ending Date	-	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00	04/30/00
Output Duration	days	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784	12784
Cell Label		1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	Total
Downstream Cell Label		1B	Outflow	2B	Outflow	3B	Outflow	4B	Outflow	5B	Outflow	6B	Outflow	-
Network Simulation Name	-	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET	EAASR_NET
Simulation Type	-	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Surface Area	km2	12.30	14.12	10.29	11.71	9.61	8.92	7.69	11.54	7.69	11.54	7.69	11.54	124.63
Mean Rainfall	cm/yr	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	129.99	130.0
Mean ET	cm/yr	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.17	134.2
Cell Inflow Volume	hm3/yr	192.6	186.9	160.4	156.7	135.1	127.3	140.2	137.3	140.2	137.3	140.2	137.3	908.6
Cell Inflow Load	kg/yr	18674.7	9703.1	15553.9	8148.8	13101.2	6178.2	13596.7	7771.4	13596.7	7771.4	13596.7	7771.4	88120
Cell Inflow Conc	ppb	97	52	97	52	97	49	97	57	97	57	97	57	97.0
Treated Outflow Volume	hm3/yr	186.9	185.2	156.7	156.2	127.3	126.9	137.3	136.8	137.3	136.8	137.3	136.8	878.7
Treated Outflow Load	kg/yr	9703.1	2183.0	8148.8	1863.1	6178.2	1583.1	7771.4	1573.6	7771.4	1573.6	7771.4	1573.6	10350
Treated FWM Outflow Conc	ppb	52	12	52	12	49	12	57	12	57	12	57	12	11.8
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Outflow Volume + Bypass	hm3/yr	186.9	185.2	156.7	156.2	127.3	126.9	137.3	136.8	137.3	136.8	137.3	136.8	878.7
Total Outflow Load + Bypass	kg/yr	9703.1	2183.0	8148.8	1863.1	6178.2	1583.1	7771.4	1573.6	7771.4	1573.6	7771.4	1573.6	10350.2
Total FWM Outflow Conc	ppb	51.9	11.8	52.0	11.9	48.5	12.5	56.6	11.5	56.6	11.5	56.6	11.5	11.8
Bypass Load	kg/yr	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Bypass Load	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0
Maximum Inflow	hm3/d	1.01	1.00	0.84	0.84	0.71	0.69	0.73	0.73	0.73	0.73	0.73	0.73	4.75
Maximum Outflow	hm3/d	1.00	1.00	0.84	0.84	0.69	0.69	0.73	0.74	0.73	0.74	0.73	0.74	4.75
Surface Load Reduction	kg/yr	8972	7520	7405	6286	6923	4595	5825	6198	5825	6198	5825	6198	77770
Load Trapped in Sediments	kg/yr	8909	7970	7464	6679	6539	4895	5841	6584	5841	6584	5841	6584	79732
Overall Load Reduction	%	48%	78%	48%	77%	53%	74%	43%	80%	43%	80%	43%	80%	88%
Lower Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Upper Confidence Limit	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Daily Geometric Mean	ppb	44.2	7.8	44.5	7.9	43.8	8.0	48.4	7.6	48.4	7.6	48.4	7.6	#N/A
Outflow Geo Mean - Composites	ppb	46.1	10.0	46.2	10.1	43.2	10.8	50.3	9.8	50.3	9.8	50.3	9.8	10.0
Upper Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Lower Confidence Limit	ppb	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Frequency Outflow Conc > 10 ppb	%	100%	50%	100%	53%	100%	58%	100%	50%	100%	50%	100%	50%	50%
Frequency Outflow Conc > 20 ppb	%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	100%	0%	8%
Frequency Outflow Conc > 50 ppb	%	50%	0%	50%	0%	44%	0%	56%	0%	56%	0%	56%	0%	0%
Freq Outflow Volume > 10 ppb	%	100%	64%	100%	65%	100%	70%	100%	62%	100%	62%	100%	62%	64%
95th Percentile Outflow Conc	ppb	69.59	15.65	69.74	15.86	64.66	16.36	75.94	14.99	75.94	14.99	75.94	14.99	15
Mean Biomass P Storage	mg/m2	2297	579	2301	585	2159	564	2406	585	2406	585	2406	585	1352
Storage Increase / Net Removal	%	-1%	0%	-1%	0%	0%	0%	-1%	0%	-1%	0%	-1%	0%	0%
Net Storage Turnover Rate	1/yr	11.0	34.1	11.0	34.1	11.0	34.1	11.0	34.1	11.0	34.1	11.0	34.1	16.6
Unit Area P Load	mg/m2-yr	1519	687	1512	696	1363	693	1768	674	1768	674	1768	674	707
Unit Area P Removal	mg/m2-yr	724	565	726	570	680	549	759	571	759	571	759	571	640
Mean Water Load	cm/d	4.3	3.6	4.3	3.7	3.8	3.9	5.0	3.3	5.0	3.3	5.0	3.3	2.0
Max Water Load	cm/d	8.2	7.1	8.2	7.1	7.3	7.7	9.5	6.3	9.5	6.3	9.5	6.3	3.8
Mean Depth	cm	55	53	55	52	46	48	51	53	51	53	51	53	52
Minimum Depth	cm	40.1	34.7	39.4	34.1	30.1	29.9	38.7	34.9	38.7	34.9	38.7	34.9	36
Maximum Depth	cm	70.1	66.7	70.0	65.7	58.5	59.4	64.9	66.5	64.9	66.5	64.9	66.5	66
Frequency Depth < 10 cm	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.0%
Flow/Width	m2/day	154	114	152	107	76	71	115	113	115	113	115	113	114.3
HRT Days	days	12.8	14.6	12.8	14.3	12.1	12.2	10.3	16.2	10.3	16.2	10.3	16.2	26.1
Mean Velocity	cm/sec	0.32	0.25	0.32	0.24	0.19	0.17	0.26	0.25	0.26	0.25	0.26	0.25	0.25
Seepage Outflow / Total Outflow	%	3%	1%	2%	0%	5%	0%	2%	0%	2%	0%	2%	0%	3%
Release 1 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
Release 2 Outflow Volume	hm3/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
95th Percentile Outflow Volume	hm3/d	1.0	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	4.5
95th Percentile Outflow Load	kg/d	54.8	13.6	46.0	11.6	35.5	9.8	43.1	9.6	43.1	9.6	43.1	9.6	63.7
Simulated / Specified Mean Depth	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 1 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Release 2 Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Outflow Demand Met	%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Range Check - Mean Depth	-		0.85		0.84		0.77		0.85		0.85		0.85	6
Range Check - Freq Depth < 10 cm	-													0
Range Check - Flow/Width	-		0.70		0.66		0.44		0.70		0.70		0.70	6
Range Check - Inflow Conc	-													0
Range Check - Outflow Conc	-		0.79		0.80		0.84		0.77		0.77		0.77	6
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mass Balance Error	%	0.01%	0.00%	0.01%	0.00%	0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.01%	0.00%	0.01%
Warning or Error Messages		Cell# 2 Depth out of calib. range for SAV_3: 53 vs. 62 - 87 cm Cell# 2 Flow/Width out of calib. range for SAV_3: 114 vs. 162 - 374 m2/day Cell# 2 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb Cell# 4 Depth out of calib. range for SAV_3: 52 vs. 62 - 87 cm Cell# 4 Flow/Width out of calib. range for SAV_3: 107 vs. 162 - 374 m2/day Cell# 4 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb Cell# 6 Depth out of calib. range for SAV_3: 48 vs. 62 - 87 cm Cell# 6 Flow/Width out of calib. range for SAV_3: 71 vs. 162 - 374 m2/day Cell# 6 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb Cell# 8 Depth out of calib. range for SAV_3: 53 vs. 62 - 87 cm							Cell# 8 Flow/Width out of calib. range for SAV_3: 113 vs. 162 - 374 m2/day Cell# 8 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb Cell# 10 Depth out of calib. range for SAV_3: 53 vs. 62 - 87 cm Cell# 10 Flow/Width out of calib. range for SAV_3: 113 vs. 162 - 374 m2/day Cell# 10 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb Cell# 12 Depth out of calib. range for SAV_3: 53 vs. 62 - 87 cm Cell# 12 Flow/Width out of calib. range for SAV_3: 113 vs. 162 - 374 m2/day Cell# 12 Outflow Conc out of calib. range for SAV_3: 12 vs. 15 - 153 ppb		18