STA1-E Central & Western Flow Path 360-Day Averages 06/01/05 thru

04/30/11 Cumulative

Cum Rain cm/yr

Cum HLR cm/d

02/01/05 thru

12/3/2012

04/30/11

Rainfall





Dashed Lines = EAA Basin Long-Term Average, 10th & 90th Percentiles



Inflow Hydraulic Loads









Inflow Phosphorus Loads Per Unit Area







Inflow Concentrations







Mean Depths

Dashed Lines = 80% Prediction Interval







Outflow Volumes Per Unit Area









Outflow Loads Per Unit Area







**Outflow Concentrations** 







K - Steady State Model, C\*=4, n = 6, q\* = 0 cm/d

Dashed Line = RS Design Simulation

Dashed Line = RS Design Simulation



Outflow Volume, Load, Conc vs. Date - 2 Yr Rolling







Outflow Load g/m2-yr

Dashed Lines = 80% Prediction Interval











Outflow Volume, Load, & Conc vs. Depth



30-Day Averages

Outflow Load mg/m2-d





Blue = Predicted, Red = Observed

250





15

20

Depth, Load, & Conc vs. Outflow Volume / Area







Outflow Volume, Load, Conc vs. Julian Day















Depth, Settling Rate, Log Conc vs. Julian Day



Inflow - Outflow Volume, Load, & Conc vs. Julian Day



Outflow Conc vs. Increase in Depth, Inflow, & Outflow



Outflow Volume, Load, & Conc vs. Inflow Hydraulic Load





Increase = Mean of Interval - Mean of Previous Interval



360-Day Averages







1000

400

Outflow C ppb

100 200 300 Julian Day









Outflow Conc ppb

Outflow Volume, Load, & Conc vs. Mean Depth



Depth vs. Hydraulic Load, Outflow Load & Conc vs. Inflow Load











Steady-State Model K Values vs. Depth, HLR, & P Load







K m/yr

Outflow Conc Reduction, Conc, & K vs. Inflow Conc



0.2

0.4

Pred Load g/m2-yr

0.6



Inflow Conc ppb



Pred Flow cm/d









90%

95%

Residual Statistics	Int	erval =	360	06/01/05	04/30/11
Variable	Flow	Load	Conc	Depth	К
count	6	6	6	6	6
resid mean	0.044	0.185	39.0	1.5	-5.6
resid std dev	0.100	0.256	52.3	4.1	8.6
resid rms	0.109	0.316	65.2	4.3	10.2
obs mean	1.905	0.362	52.1	50.2	13.7
obs std dev	1.028	0.235	50.6	7.6	12.1
pred mean	1.861	0.177	26.1	48.6	19.2
pred std dev	0.958	0.840	1.1	4.8	6.2
r squared	0.99	0.00	0.00	0.68	0.28
resid std %	5%	144%	200%	8%	45%
resid rms %	6%	178%	250%	9%	53%
bias mean %	2%	104%	149%	3%	-29%
bias std error %	2%	59%	82%	3%	18%
bias t	1.1	1.8	1.8	0.9	-1.6
bias signif	0.34	0.15	0.14	0.41	0.19
80% prediction intervals fo	r prototype dat	asets (STA-	2 & STA-34	)	
% of predicted	14%	34%	30%	16%	24%
12/3/2012					

STA-1W, Cells 1-5

360-Day Averages 06/27/00 thru 04/30/11 Cumulative 05/28/00 thru 04/30/11

Cum Rain cm/yr

Cum HLR cm/d







Dashed Lines = EAA Basin Long-Term Average, 10th & 90th Percentiles





Dashed Lines = RS Design Long-Term Mean







Inflow Phosphorus Loads Per Unit Area







Inflow Concentrations

12/3/2012







Cum Inflow Conc ppb

Cum Outflow cm/d

Mean Depths

Dashed Lines = 80% Prediction Interval







Outflow Volumes Per Unit Area







Outflow Loads Per Unit Area





Outflow Load g/m2-yr



Outflow Concentrations







K - Steady State Model, C\*=4, n = 6, q\* = 0 cm/d



Dashed Line = RS Design Simulation





720-day Averages













Outflow Volume, Load, & Conc vs. Inflow Hydraulic Load



30-Day Averages







Outflow Volume, Load, & Conc vs. Depth



P-CW/60 Pool 10 Depth cm



Depth, Load, & Conc vs. Outflow Volume / Area







Outflow Volume, Load, Conc vs. Julian Day















Depth, Settling Rate, Log Conc vs. Julian Day



200



Inflow - Outflow Volume, Load, & Conc vs. Julian Day



Outflow Conc vs. Increase in Depth, Inflow, & Outflow



Outflow Volume, Load, & Conc vs. Inflow Hydraulic Load

360-Day Averages

-0.5

Outflow C ppb















0.0

0.5

Inflow Increase cm/d/d

1.0

800

600







Outflow Conc ppb

Outflow Volume, Load, & Conc vs. Mean Depth



Depth vs. Hydraulic Load, Outflow Load & Conc vs. Inflow Load



Steady-State Model K Values vs. Depth, HLR, & P Load















K m/yr



100%

80%

60%

40%

20%

0%

Observed vs. Predicted Values

9

8

7

6 5

0

0

2

4

Pred Flow cm/d

Obs Flow cm/d

0

100

Conc Reduction %



0.5

1

Pred Load g/m2-yr

1.5

1

0.5

0

0





6







Pred Conc Reduc %



720-day Averages







Residual Statistics	Inte	Interval =		06/27/00	04/30/11
Variable	Flow	Load	Conc	Depth	К
count	11	11	11	11	11
resid mean	0.125	0.306	31.3	3.3	-8.2
resid std dev	0.239	0.326	33.4	14.2	5.4
resid rms	0.270	0.447	45.8	14.5	9.8
obs mean	2.988	0.651	59.7	54.7	15.3
obs std dev	2.004	0.542	33.9	16.9	9.1
pred mean	2.862	0.345	33.0	51.4	23.5
pred std dev	1.851	1.624	2.1	10.6	9.9
r squared	0.98	0.32	0.00	0.26	0.00
resid std %	8%	94%	101%	28%	23%
resid rms %	9%	130%	139%	28%	42%
bias mean %	4%	89%	95%	6%	-35%
bias std error %	3%	28%	30%	8%	7%
bias t	1.7	3.1	3.1	0.8	-5.0
bias signif	0.12	0.01	0.01	0.46	0.00
80% prediction intervals fo	r prototype data	asets (STA-2	2 & STA-34	)	
% of predicted	14%	34%	30%	16%	24%
12/3/2012					

STA2 Cells 1-3, Original Hydraulics 360-Day Averages 06/23/01 thru

Cumulative 06/23/01

Cum Rain cm/yr

Cum HLR cm/d

Cum Inflow Load g/m2-yr

04/30/11

12/3/2012 04/30/11

Rainfall





Dashed Lines = EAA Basin Long-Term Average, 10th & 90th Percentiles



thru



20 15 10 5 0 06/01 03/04 12/06 09/09















Inflow Concentrations

file:///C//Users/Bill/Dropbox/Everglades/Science%20Plan/Web/dmsta\_examples/sta2\_plan\_c123-out.htm[2/17/2014 5:46:34 PM]







Mean Depths

Dashed Lines = 80% Prediction Interval







Outflow Volumes Per Unit Area









Outflow Loads Per Unit Area







Outflow Concentrations













720-day Averages

K m/yr

45

40

35

30

25

20

15

10 5

0

06/01

03/04

12/06

09/09

Dashed Line = RS Design Simulation

Dashed Line = RS Design Simulation



Dashed Lines = 80% Prediction Interval







Outflow Volume, Load, & Conc vs. Inflow Hydraulic Load





30-Day Averages









Outflow Load mg/m2-d Depth cm

Depth, Load, & Conc vs. Outflow Volume / Area







Outflow Volume, Load, Conc vs. Julian Day





Outflow cm/d

Outflow Load







Depth, Settling Rate, Log Conc vs. Julian Day



Inflow - Outflow Volume, Load, & Conc vs. Julian Day



Outflow Conc vs. Increase in Depth, Inflow, & Outflow



Outflow Volume, Load, & Conc vs. Inflow Hydraulic Load





Increase = Mean of Interval - Mean of Previous Interval



360-Day Averages







![](_page_23_Figure_13.jpeg)

![](_page_24_Figure_0.jpeg)

![](_page_24_Figure_1.jpeg)

![](_page_24_Figure_2.jpeg)

Outflow Conc ppb

Outflow Conc ppb

45

40

35

30

25

20

15

10

5

0

0

Outflow Volume, Load, & Conc vs. Mean Depth

![](_page_24_Figure_4.jpeg)

Depth vs. Hydraulic Load, Outflow Load & Conc vs. Inflow Load

![](_page_24_Figure_6.jpeg)

0.7 0.6 0.5 0.4 0.3 0.2 0.1 0 0 20 40 60 80 Depth cm

![](_page_24_Figure_8.jpeg)

![](_page_24_Figure_9.jpeg)

50

Depth cm

Steady-State Model K Values vs. Depth, HLR, & P Load

![](_page_25_Figure_0.jpeg)

![](_page_25_Figure_1.jpeg)

![](_page_25_Figure_2.jpeg)

K m/yr

Outflow Conc Reduction, Conc, & K vs. Inflow Conc

![](_page_25_Figure_4.jpeg)

![](_page_25_Figure_5.jpeg)

![](_page_25_Figure_6.jpeg)

![](_page_25_Figure_7.jpeg)

![](_page_25_Figure_8.jpeg)

![](_page_25_Figure_9.jpeg)

![](_page_26_Figure_0.jpeg)

![](_page_26_Figure_1.jpeg)

![](_page_26_Figure_2.jpeg)

![](_page_26_Figure_3.jpeg)

80%

85%

Residual Statistics	Inte	Interval =		06/23/01	04/30/11
Variable	Flow	Load	Conc	<u>Depth</u>	К
count	10	10	10	10	10
resid mean	0.292	0.021	-0.4	-2.7	1.3
resid std dev	0.331	0.100	7.1	3.7	5.3
resid rms	0.442	0.102	7.2	4.6	5.5
obs mean	3.479	0.285	22.4	45.9	23.6
obs std dev	0.992	0.143	9.7	5.9	6.9
pred mean	3.187	0.263	22.6	48.5	22.3
pred std dev	0.701	0.615	0.8	4.1	5.8
r squared	0.80	0.49	0.46	0.39	0.37
resid std %	10%	38%	32%	8%	24%
resid rms %	14%	39%	32%	9%	25%
bias mean %	9%	8%	-2%	-5%	6%
bias std error %	3%	12%	10%	2%	8%
bias t	2.8	0.7	-0.2	-2.3	0.8
bias signif	0.02	0.52	0.86	0.05	0.45
80% prediction intervals for	or prototype data	sets (STA-2	2 & STA-34	)	
% of predicted	14%	34%	30%	16%	24%
12/3/2012					

Rainfall

![](_page_27_Figure_3.jpeg)

![](_page_27_Figure_4.jpeg)

06/06/04

Dashed Lines = EAA Basin Long-Term Average, 10th & 90th Percentiles

thru

04/30/11

Cumulative

Cum Rain cm/yr

Cum HLR cm/d

![](_page_27_Figure_5.jpeg)

thru

04/30/11

06/06/04

Inflow Hydraulic Loads

![](_page_27_Figure_7.jpeg)

![](_page_27_Figure_8.jpeg)

STA-34 Cells 1-3

360-Day Averages

![](_page_27_Figure_9.jpeg)

![](_page_27_Figure_10.jpeg)

Inflow Phosphorus Loads Per Unit Area

![](_page_27_Figure_12.jpeg)

![](_page_27_Figure_13.jpeg)

![](_page_27_Figure_14.jpeg)

Inflow Concentrations

![](_page_28_Figure_0.jpeg)

![](_page_28_Figure_1.jpeg)

![](_page_28_Figure_2.jpeg)

Mean Depths

Dashed Lines = 80% Prediction Interval

![](_page_28_Figure_5.jpeg)

![](_page_28_Figure_6.jpeg)

![](_page_28_Figure_7.jpeg)

Outflow Volumes Per Unit Area

![](_page_28_Figure_9.jpeg)

![](_page_28_Figure_10.jpeg)

![](_page_28_Figure_11.jpeg)

![](_page_28_Figure_12.jpeg)

Outflow Loads Per Unit Area

![](_page_29_Figure_0.jpeg)

![](_page_29_Figure_1.jpeg)

![](_page_29_Figure_2.jpeg)

**Outflow Concentrations** 

![](_page_29_Figure_4.jpeg)

![](_page_29_Figure_5.jpeg)

![](_page_29_Figure_6.jpeg)

K - Steady State Model, C\*=4, n = 6, q\* = 0 cm/d

![](_page_29_Figure_8.jpeg)

Outflow Volume, Load, Conc vs. Date - 2 Yr Rolling

![](_page_29_Figure_10.jpeg)

720-day Averages

Dashed Line = RS Design Simulation

Dashed Line = RS Design Simulation

![](_page_29_Figure_12.jpeg)

Dashed Lines = 80% Prediction Interval

![](_page_29_Figure_16.jpeg)

![](_page_30_Figure_0.jpeg)

![](_page_30_Figure_1.jpeg)

![](_page_30_Figure_2.jpeg)

Blue = Predicted, Red = Observed

50

40

30

0

0

Outflow C ppb

Outflow Volume, Load, & Conc vs. Inflow Hydraulic Load

![](_page_30_Figure_4.jpeg)

Outflow Volume, Load, & Conc vs. Depth

![](_page_30_Figure_6.jpeg)

30-Day Averages

Outflow Load mg/m2-d

0

0

20

40

![](_page_30_Figure_8.jpeg)

![](_page_30_Figure_9.jpeg)

60 80

Depth cm

100 120

![](_page_30_Figure_10.jpeg)

5

HLR cm/d

10

Depth, Load, & Conc vs. Outflow Volume / Area

![](_page_31_Figure_0.jpeg)

![](_page_31_Figure_1.jpeg)

![](_page_31_Figure_2.jpeg)

Outflow Volume, Load, Conc vs. Julian Day

![](_page_31_Figure_4.jpeg)

![](_page_31_Figure_5.jpeg)

![](_page_31_Figure_6.jpeg)

![](_page_31_Figure_7.jpeg)

Depth cm

![](_page_31_Figure_8.jpeg)

Depth, Settling Rate, Log Conc vs. Julian Day

![](_page_32_Figure_0.jpeg)

Inflow - Outflow Volume, Load, & Conc vs. Julian Day

![](_page_32_Figure_2.jpeg)

Outflow Conc vs. Increase in Depth, Inflow, & Outflow

![](_page_32_Figure_4.jpeg)

Outflow Volume, Load, & Conc vs. Inflow Hydraulic Load

![](_page_32_Figure_6.jpeg)

![](_page_32_Figure_7.jpeg)

600

500

400

300

200

100

0

0

100

200

Julian Day

300

400

Inflow - Outflow Conc ppb

![](_page_32_Figure_8.jpeg)

Increase = Mean of Interval - Mean of Previous Interval

![](_page_32_Figure_10.jpeg)

![](_page_32_Figure_11.jpeg)

![](_page_32_Figure_12.jpeg)

360-Day Averages

![](_page_33_Figure_0.jpeg)

![](_page_33_Figure_1.jpeg)

![](_page_33_Figure_2.jpeg)

Outflow Conc ppb

Outflow Volume, Load, & Conc vs. Mean Depth

![](_page_33_Figure_4.jpeg)

Depth vs. Hydraulic Load, Outflow Load & Conc vs. Inflow Load

![](_page_33_Figure_6.jpeg)

![](_page_33_Figure_8.jpeg)

![](_page_33_Figure_9.jpeg)

![](_page_33_Figure_10.jpeg)

Steady-State Model K Values vs. Depth, HLR, & P Load

![](_page_34_Figure_0.jpeg)

![](_page_34_Figure_1.jpeg)

![](_page_34_Figure_2.jpeg)

K m/yr

Outflow Conc Reduction, Conc, & K vs. Inflow Conc

![](_page_34_Figure_4.jpeg)

Observed vs. Predicted Values

![](_page_34_Figure_6.jpeg)

Inflow Conc ppb

K m/yr

![](_page_34_Figure_7.jpeg)

![](_page_34_Figure_8.jpeg)

![](_page_34_Figure_9.jpeg)

![](_page_34_Figure_10.jpeg)

![](_page_35_Figure_0.jpeg)

![](_page_35_Figure_1.jpeg)

![](_page_35_Figure_2.jpeg)

![](_page_35_Figure_3.jpeg)

720-day Averages

![](_page_35_Figure_5.jpeg)

![](_page_35_Figure_6.jpeg)

![](_page_35_Figure_7.jpeg)

Residual Statistics	Inte	erval =	360	06/06/04	04/30/11	
Variable	Flow	Load	Conc	<u>Depth</u>	К	
count	7	7	7	7	7	
resid mean	0.122	-0.006	-1.3	0.4	1.5	
resid std dev	0.214	0.043	4.9	7.7	4.0	
resid rms	0.247	0.044	5.1	7.7	4.3	
obs mean	2.562	0.163	17.5	50.6	23.3	
obs std dev	0.967	0.075	4.4	5.6	10.1	
pred mean	2.440	0.170	19.1	50.2	21.8	
pred std dev	0.864	0.757	1.0	7.0	8.8	
r squared	0.93	0.66	0.00	0.00	0.82	
resid std %	9%	25%	26%	15%	19%	
resid rms %	10%	26%	27%	15%	20%	
bias mean %	5%	-4%	-7%	1%	7%	
bias std error %	3%	10%	10%	6%	7%	
bias t	1.5	-0.4	-0.7	0.1	1.0	
bias signif	0.19	0.71	0.52	0.89	0.38	
80% prediction intervals for prototype datasets (STA-2 & STA-34)						
% of predicted	14%	34%	30%	16%	24%	
12/3/2012						
STA5 Cells 1 & 2 with Emergent Calibration in 1B & 2B 360-Day Averages 07/03/99 thru 04/30/11

Dashed Lines = EAA Basin Long-Term Average, 10th & 90th Percentiles

Cum Rain cm/yr

Cum HLR cm/d

Cum Inflow Load g/m2-yr

12/3/2012

04/30/11

Rainfall







thru



















Inflow Concentrations







Mean Depths

Dashed Lines = 80% Prediction Interval







Outflow Volumes Per Unit Area





Cum Outflow cm/d



Outflow Loads Per Unit Area



**Outflow Concentrations** 





Dashed Line = RS Design Simulation







Dashed Line = RS Design Simulation



Outflow Volume, Load, Conc vs. Date - 2 Yr Rolling





720-day Averages

Dashed Lines = 80% Prediction Interval









Outflow Volume, Load, & Conc vs. Inflow Hydraulic Load











Outflow Volume, Load, & Conc vs. Depth



PCW/bu peop 15 - 10 - 5 - 0 - 20 40 60 80 100 Depth cm



Depth, Load, & Conc vs. Outflow Volume / Area







Outflow Volume, Load, Conc vs. Julian Day















Depth, Settling Rate, Log Conc vs. Julian Day



Inflow - Outflow Volume, Load, & Conc vs. Julian Day



Outflow Conc vs. Increase in Depth, Inflow, & Outflow



Outflow Volume, Load, & Conc vs. Inflow Hydraulic Load









Julian Day

100

400

300

Inflow - Outflow Load mg/m2-d

30

25

20

15

10

5

0

-5

360-Day Averages













Outflow Conc ppb

Outflow Volume, Load, & Conc vs. Mean Depth



Depth vs. Hydraulic Load, Outflow Load & Conc vs. Inflow Load



Steady-State Model K Values vs. Depth, HLR, & P Load















K m/yr

Outflow Conc Reduction, Conc, & K vs. Inflow Conc



Observed vs. Predicted Values



K m/yr





Inflow Conc ppb











Observed vs. Predicted Values - 2 years



720-day Averages





Residual Statistics	Inte	Interval =		07/03/99	04/30/11
Variable	Flow	Load	Conc	<u>Depth</u>	К
count	12	12	12	12	12
resid mean	0.071	0.152	33.5	-7.1	-2.1
resid std dev	0.185	0.207	42.0	10.5	2.8
resid rms	0.198	0.257	53.7	12.7	3.5
obs mean	1.709	0.597	95.7	40.9	6.7
obs std dev	1.198	0.483	46.4	9.3	4.7
pred mean	1.638	0.444	74.3	48.1	8.8
pred std dev	1.196	1.049	1.4	14.7	6.0
r squared	0.97	0.72	0.00	0.00	0.44
resid std %	11%	46%	57%	22%	32%
resid rms %	12%	58%	72%	26%	40%
bias mean %	4%	34%	45%	-15%	-24%
bias std error %	3%	13%	16%	6%	9%
bias t	1.3	2.6	2.8	-2.3	-2.6
bias signif	0.21	0.03	0.02	0.04	0.03
80% prediction intervals for	prototype data	asets (STA-2	2 & STA-34	)	
% of predicted	14%	34%	30%	16%	24%
12/3/2012					

STA5 Cells 1 & 2 with PEW Calibration in 1B & 2B 360-Day Averages 07/03/99 thru 04/30/11

Dashed Lines = EAA Basin Long-Term Average, 10th & 90th Percentiles

Cum Rain cm/yr

Cum HLR cm/d

12/3/2012

04/30/11

Rainfall







thru





Dashed Lines = RS Design Long-Term Mean





Inflow Phosphorus Loads Per Unit Area







Inflow Concentrations







Mean Depths

Dashed Lines = 80% Prediction Interval







Outflow Volumes Per Unit Area









Outflow Loads Per Unit Area



**Outflow Concentrations** 













Dashed Line = RS Design Simulation



Outflow Volume, Load, Conc vs. Date - 2 Yr Rolling

K - Steady State Model, C\*=4, n = 6, q\* = 0 cm/d







720-day Averages

Dashed Lines = 80% Prediction Interval



















Outflow Volume, Load, & Conc vs. Depth



PCW/bu peol 15 - 10 - 5 - 0 - 20 40 60 80 100 Depth cm



Depth, Load, & Conc vs. Outflow Volume / Area







Outflow Volume, Load, Conc vs. Julian Day















Depth, Settling Rate, Log Conc vs. Julian Day



Inflow - Outflow Volume, Load, & Conc vs. Julian Day



Outflow Conc vs. Increase in Depth, Inflow, & Outflow



Outflow Volume, Load, & Conc vs. Inflow Hydraulic Load





400

300

200

100

-100

-200

-300

0

Inflow - Outflow Conc ppb







360-Day Averages



300

400

200

Julian Day









Outflow Conc ppb

Outflow Volume, Load, & Conc vs. Mean Depth



Depth vs. Hydraulic Load, Outflow Load & Conc vs. Inflow Load



Steady-State Model K Values vs. Depth, HLR, & P Load















Outflow Conc Reduction, Conc, & K vs. Inflow Conc



Inflow Conc ppb

K m/yr

Observed vs. Predicted Values

















Observed vs. Predicted Values - 2 years



720-day Averages





Residual Statistics	Inte	Interval =		07/03/99	04/30/11
Variable	Flow	Load	Conc	<u>Depth</u>	К
count	12	12	12	12	12
resid mean	0.071	0.336	61.3	-7.1	-7.4
resid std dev	0.185	0.282	39.7	10.5	4.9
resid rms	0.198	0.439	73.1	12.7	8.9
obs mean	1.709	0.597	95.7	40.9	6.7
obs std dev	1.198	0.483	46.4	9.3	4.7
pred mean	1.638	0.261	43.6	48.1	14.1
pred std dev	1.196	1.049	1.4	14.7	8.9
r squared	0.97	0.17	0.00	0.00	0.00
resid std %	11%	108%	91%	22%	35%
resid rms %	12%	168%	168%	26%	63%
bias mean %	4%	129%	141%	-15%	-52%
bias std error %	3%	31%	26%	6%	10%
bias t	1.3	4.1	5.3	-2.3	-5.2
bias signif	0.21	0.00	0.00	0.04	0.00
80% prediction intervals for	prototype data	sets (STA-2	2 & STA-34	)	
% of predicted	14%	34%	30%	16%	24%
12/3/2012					

Rainfall





05/16/08

Dashed Lines = EAA Basin Long-Term Average, 10th & 90th Percentiles

thru

04/30/11

Cumulative

Cum Rain cm/yr

Cum HLR cm/d



thru

04/30/11

04/16/08

Inflow Hydraulic Loads





STA6 Sections 1 & 2

360-Day Averages





Inflow Phosphorus Loads Per Unit Area







Inflow Concentrations







Mean Depths

Dashed Lines = 80% Prediction Interval







Depth cm

Cum Outflow cm/d

Outflow Volumes Per Unit Area







Outflow Loads Per Unit Area







Outflow Concentrations







K - Steady State Model, C\*=4, n = 6, q\* = 0 cm/d

Dashed Line = RS Design Simulation

Dashed Line = RS Design Simulation



Outflow Volume, Load, Conc vs. Date - 2 Yr Rolling

35 30 25 20 15 10 5 0 04/08 08/09 01/11



720-day Averages

K m/yr

Dashed Lines = 80% Prediction Interval











30-Day Averages





Blue = Predicted, Red = Observed

0

0



15







Depth, Load, & Conc vs. Outflow Volume / Area

Outflow Volume, Load, & Conc vs. Depth























Depth, Settling Rate, Log Conc vs. Julian Day



Inflow - Outflow Volume, Load, & Conc vs. Julian Day



Outflow Conc vs. Increase in Depth, Inflow, & Outflow



Outflow Volume, Load, & Conc vs. Inflow Hydraulic Load









25

20

15

10

360-Day Averages

Increase = Mean of Interval - Mean of Previous Interval





Blue = Predicted, Red = Observed

file:///Cl/Users/Bill/Dropbox/Dmsta\_Calib/web/track/30/sta6\_plan\_c235\_pew-out.htm[2/17/2014 6:34:47 PM]







Outflow Conc ppb

Outflow Conc ppb

Outflow Volume, Load, & Conc vs. Mean Depth















Steady-State Model K Values vs. Depth, HLR, & P Load







K m/yr

Outflow Conc Reduction, Conc, & K vs. Inflow Conc



Observed vs. Predicted Values





























Residual Statistics	Interval =		360	05/16/08	04/30/11	
Variable	Flow	Load	Conc	Depth	К	
count	3	3	3	3	3	
resid mean	-0.114	0.163	24.7	2.4	-6.5	
resid std dev	0.402	0.123	26.6	3.9	5.6	
resid rms	0.418	0.205	36.3	4.6	8.6	
obs mean	2.446	0.445	49.9	39.2	13.2	
obs std dev	0.732	0.166	34.5	15.0	5.9	
pred mean	2.560	0.282	30.2	36.8	19.8	
pred std dev	0.808	0.708	0.9	11.3	5.8	
r squared	0.67	0.00	0.00	0.91	0.00	
resid std %	16%	44%	88%	11%	28%	
resid rms %	16%	73%	120%	12%	44%	
bias mean %	-4%	58%	82%	7%	-33%	
bias std error %	9%	25%	51%	6%	16%	
bias t	-0.5	2.3	1.6	1.1	-2.0	
bias signif	0.71	0.26	0.35	0.47	0.29	
80% prediction intervals for prototype datasets (STA-2 & STA-34)						
% of predicted	14%	34%	30%	16%	24%	
12/3/2012						

STA6 - Cells 3 & 5

360-Day Averages 07/08/98 thru 04/30/11 Cumulative 01/09/98 thru 04/30/11

Cum Rain cm/yr

Cum HLR cm/d

Cum Inflow Load g/m2-yr

Rainfall





Dashed Lines = EAA Basin Long-Term Average, 10th & 90th Percentiles













Inflow Phosphorus Loads Per Unit Area







Inflow Concentrations

160 <sub>1</sub>







Cum Inflow Conc ppb

Cum Outflow cm/d

Mean Depths

Dashed Lines = 80% Prediction Interval







Outflow Volumes Per Unit Area







Outflow Loads Per Unit Area







Outflow Load g/m2-yr









K - Steady State Model, C\*=4, n = 6, q\* = 0 cm/d

**Outflow Concentrations** 



Outflow Volume, Load, Conc vs. Date - 2 Yr Rolling











720-day Averages











Outflow Volume, Load, & Conc vs. Depth



30-Day Averages





Blue = Predicted, Red = Observed





Depth, Load, & Conc vs. Outflow Volume / Area







Outflow Volume, Load, Conc vs. Julian Day





10











Depth, Settling Rate, Log Conc vs. Julian Day



Inflow - Outflow Volume, Load, & Conc vs. Julian Day



Outflow Conc vs. Increase in Depth, Inflow, & Outflow



Outflow Volume, Load, & Conc vs. Inflow Hydraulic Load





Increase = Mean of Interval - Mean of Previous Interval



360-Day Averages















Outflow Volume, Load, & Conc vs. Mean Depth



Depth vs. Hydraulic Load, Outflow Load & Conc vs. Inflow Load



Steady-State Model K Values vs. Depth, HLR, & P Load















60

Pred Conc ppb

Outflow Conc Reduction, Conc, & K vs. Inflow Conc



Pred Load g/m2-yr

Pred Flow cm/d

K m/yr







Observed vs. Predicted Values - 2 years









Residual Statistics	Interval =		360	07/08/98	04/30/11	
Variable	Flow	Load	Conc	<u>Depth</u>	К	
count	13	13	13	13	13	
resid mean	-0.992	-0.130	0.0	1.1	4.1	
resid std dev	0.929	0.118	10.5	4.5	9.3	
resid rms	1.359	0.176	10.5	4.7	10.2	
obs mean	2.072	0.167	22.0	29.1	22.3	
obs std dev	1.222	0.098	10.0	9.5	12.0	
pred mean	3.064	0.297	26.6	28.0	18.3	
pred std dev	1.593	1.398	1.8	7.9	6.6	
r squared	0.00	0.00	0.00	0.76	0.28	
resid std %	30%	40%	39%	16%	51%	
resid rms %	44%	59%	39%	17%	56%	
bias mean %	-32%	-44%	0%	4%	22%	
bias std error %	8%	11%	11%	4%	14%	
bias t	-3.8	-4.0	0.0	0.9	1.6	
bias signif	0.00	0.00	1.00	0.40	0.15	
80% prediction intervals for prototype datasets (STA-2 & STA-34)						
% of predicted	14%	34%	30%	16%	24%	
12/3/2012						