DMSTA Model Documentation

BROWN AND CALDWELL

ADJUSTED BASELINE

DMSTA Input Values

Warning: One or More Cells Outside of Calib. Range

Input Variable	Units	Value
Design Case Name	-	Case1
Starting Date for Simulation	-	01/01/65
Ending Date for Simulation	-	12/31/95
Starting Date for Output	-	01/01/65
Steps Per Day	-	3
Number of Iterations	-	2
Output Averaging Interval	days	7
Reservoir H2O Residence Time	days	0
Max Inflow / Mean Inflow	-	0
Max Reservoir Storage	hm3	0
Reservoir P Decay Rate	1/yr/ppb	0
Rainfall P Conc	ppb	10
Atmospheric P Load (Dry)	mg/m2-yr	20

Case Description: **Filename:** **AdjBaseline.xls**

Inputs for Cells 1 - 3 are the same as in the Strategy Paper
Cell 4 inputs based on preliminary design features
SAV_C4 for STA 2/Cell 4
Adjusted Baseline Data

Output Variable	Units	Value
Water Balance Error	%	0.0%
Mass Balance Error	%	0.2%
Flow-Wtd Conc - With Bypass	ppb	12.8
Flow-Wtd Conc - Without Bypass	ppb	12.8
Geometric Mean Conc	ppb	9.4
95th Percentile Conc	ppb	16.7
Freq Cell Outflow > 10 ppb	%	25%
Bypass Load	%	0.0%

Cell Number -->		1	2	3	4	5	6
Cell Label	-	1	2	3	4		
Vegetation Type	------->	STA2_1	STA2_1	SAV_C4	SAV_C4		
Inflow Fraction	-	0.218257478	0.275520085	0.275520085	0.230702351		
Downstream Cell Number	-	0	0	0	0		
Surface Area	km2	7.280	9.190	9.190	7.695		
Mean Width of Flow Path	km	1.58	2.00	2.00	2.50		
Number of Tanks in Series	-	3	3	3	3		
Outflow Control Depth	cm	40	40	60	42		
Outflow Coefficient - Exponent	-	2.63	3.1	2.84	2.84		
Outflow Coefficient - Intercept	-	0.52	0.66	0.57	0.57		
Bypass Depth	cm	0	0	0	0		
Maximum Inflow	hm3/day	0	0	0	0		
Maximum Outflow	hm3/day	0	0	0	0		
Inflow Seepage Rate	(cm/d) / cm	0.008	0	0	0.004		
Inflow Seepage Control Elev	cm	76	0	0	67		
Inflow Seepage Conc	ppb	20	20	20	90		
Outflow Seepage Rate	(cm/d) / cm	0.004	0.006	0.01	0.006		
Outflow Seepage Control Elev	cm	-61	-61	-30	12		
Max Outflow Seepage Conc	ppb	20	20	20	20		
Seepage Recycle Fraction	-	0.78	0.78	0.79	0.79		
Seepage Discharge Fraction	-	0	0	0	0		
Initial Water Column Conc	ppb	30	30	30	30		
Initial P Storage Per Unit Area	mg/m2	500	500	500	500		
Initial Water Column Depth	cm	50	50	50	50		
C0 = WC Conc at 0 g/m2 P Storage	ppb	*2*	*2*	*4*	*4*		
C1 = WC Conc at 1 g/m2 P storage	ppb	*22*	*22*	*22*	*22*		
K = Net Settling Rate at Steady State	m/yr	*41*	*41*	*80.10*	*80.10*		
Zx = Depth Scale Factor	cm	*60*	*60*	*60*	*60*		
C0 - Periphyton	ppb	*0*	*0*	*0*	*0*		
C1 - Periphyton	ppb	*0*	*0*	*0*	*0*		
K - Periphyton	1/yr	*0.00*	*0.00*	*0.00*	*0.00*		
Zx - Periphyton	cm	*0*	*0*	*0*	*0*		
Sm = Transition Storage Midpoint	mg/m2	*0*	*0*	*0*	*0*		
Sb = Transition Storage Bandwidth	mg/m2	*0*	*0*	*0*	*0*		

Output Variables	Units	1	2	3	4	5	6	Overall
Execution Time	seconds/yr	0.61	1.19	1.74	2.32			2.32
Run Date	-	03/03/05	03/03/05	03/03/05	03/03/05			03/03/05
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65			01/01/65
Starting Date for Output	-	01/01/65	01/01/65	01/01/65	01/01/65			01/01/65
Ending Date	-	12/31/95	12/31/95	12/31/95	12/31/95			12/31/95
Output Duration	days	11322	11322	11322	11322			11322
Cell Label		1	2	3	4			Total Outflow
Downstream Cell Label		Outflow	Outflow	Outflow	Outflow			-
Surface Area	km2	7.280	9.19	9.19	7.786428			33.4
Mean Water Load	cm/d	2.6	2.6	2.6	2.4			2.5
Max Water Load	cm/d	26.0	25.9	25.9	24.4			25.6
Inflow Volume	hm3/yr	68.4	86.2	86.2	68.9			309.6
Inflow Load	kg/yr	5012.7	6321.6	6321.6	5048.9			22704.8
Inflow Conc	ppb	73.3	73.3	73.3	73.3			73.3
Treated Outflow Volume	hm3/yr	69.8	80.1	78.5	63.2			291.6
Treated Outflow Load	kg/yr	855.5	1014.6	1069.2	805.6			3744.9
Treated FWM Outflow Conc	ppb	12.3	12.7	13.6	12.8			12.8
Total Outflow Volume	hm3/yr	69.8	80.1	78.5	63.2			291.6
Total Outflow Load	kg/yr	855.5	1014.6	1069.2	805.6			3744.9

Case 1 - Adjusted Baseline Data - SAV_C4

Output Variables	Units	1	2	3	4	5	6	Overall
Total FWM Outflow Conc	ppb	12.3	12.7	13.6	12.8			12.8
Bypass Volume	hm3/yr	0.00	0.00	0.00	0.00			0.00
Bypass Load	kg/yr	0.00	0.00	0.00	0.00			0.00
Bypass Conc	ppb	0.0	0.0	0.0	0.0			0.0
Bypass Load	%	0%	0%	0%	0%			0%
Surface Outflow Load Reduc	%	82.9%	84.0%	83.1%	84.0%			83.5%
Outflow Geometric Mean - Daily	ppb	10.4	10.5	9.0	7.7			9.0
Outflow Geo Mean - Composites	ppb	10.5	10.8	8.5	8.0			9.4
Frequency Outflow Conc > 10 ppb	%	100%	100%	#DIV/0!	33%			34%
95th Percentile Outflow Conc	ppb	13.7	15.5	#NUM!	10.1			16.7
Mean Biomass P Storage	mg/m2	729	703	410	389			555
Max Reservoir Storage	hm3	0.00	0.00	0.00	0.00			0.00
Reservoir Load Reduction	%	#N/A	#N/A	#N/A	#N/A			#N/A
Mean Depth	cm	53.9	47.5	58.9	47.9			52.1
Minimum Depth	cm	27.9	1.0	1.7	1.0			7.1
Maximum Depth	cm	126.8	113.4	122.3	117.5			119.7
Frequency Depth < 5 cm	%	0.0%	0.0%	0.0%	0.0%			0.0%
Flow/Width	m2/day	121	110	107	108			111.1
Max 1 Yr Flow-Wtd Conc	ppb	#N/A	#N/A	#N/A	#N/A			18.4
Max 5 Yr Flow-Wtd Conc	ppb	#N/A	#N/A	#N/A	#N/A			14.1
Max 1 Yr Geometric Mn Conc	ppb	#N/A	#N/A	#N/A	#N/A			11.5
Max 5 Yr Geometric Mn Conc	ppb	#N/A	#N/A	#N/A	#N/A			10.6
Depth Percentile vs. Calib Set	%	30%	22%	37%	23%			23%
Q/W Percentile vs. Calib Set	%	56%	51%	50%	50%			50%
Cin Percentile vs. Calib Set	%	72%	70%	68%	69%			72%
Cout Percentile vs. Calib Set	%	-6%	-5%	#N/A	-4%			-4%
Depth Range Flag	-	OK	OK	OK	OK			0.0
Q/W Range Flag	-	OK	OK	OK	OK			0.0
Cin Range Flag	-	OK	OK	OK	OK			0.0
Cout Range Flag	-	FLAG	FLAG		FLAG			3.0
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%			0.00%
Mass Balance Error	%	0.23%	0.19%	0.09%	0.12%			0.16%

DMSTA Input Values

Warning: One or More Cells Outside of Calib. Range

Input Variable	Units	Value
Design Case Name	-	Case1_C3
Starting Date for Simulation	-	01/01/65
Ending Date for Simulation	-	12/31/95
Starting Date for Output	-	01/01/65
Steps Per Day	-	3
Number of Iterations	-	2
Output Averaging Interval	days	7
Reservoir H2O Residence Time	days	0
Max Inflow / Mean Inflow	-	0
Max Reservoir Storage	hm3	0
Reservoir P Decay Rate	1/yr/ppb	0
Rainfall P Conc	ppb	10
Atmospheric P Load (Dry)	mg/m2-yr	20

Case Description: **Filename:** **AdjBaseline.xls**

Inputs for Cells 1 - 3 are the same as in the Strategy Paper
Cell 4 inputs based on preliminary design features
STA2_3 for STA 2/Cell 4
Adjusted Baseline Data

Output Variable	Units	Value
Water Balance Error	%	0.0%
Mass Balance Error	%	0.2%
Flow-Wtd Conc - With Bypass	ppb	14.7
Flow-Wtd Conc - Without Bypass	ppb	14.7
Geometric Mean Conc	ppb	12.1
95th Percentile Conc	ppb	17.6
Freq Cell Outflow > 10 ppb	%	100%
Bypass Load	%	0.0%

Cell Number -->		1	2	3	4	5	6
Cell Label	-	1	2	3	4		
Vegetation Type	------->	STA2_1	STA2_1	STA2_3	STA2_3		
Inflow Fraction	-	0.218257478	0.275520085	0.275520085	0.230702351		
Downstream Cell Number	-	0	0	0	0		
Surface Area	km2	7.280	9.190	9.190	7.695		
Mean Width of Flow Path	km	1.58	2.00	2.00	2.50		
Number of Tanks in Series	-	3	3	3	3		
Outflow Control Depth	cm	40	40	60	42		
Outflow Coefficient - Exponent	-	2.63	3.1	2.84	2.84		
Outflow Coefficient - Intercept	-	0.52	0.66	0.57	0.57		
Bypass Depth	cm	0	0	0	0		
Maximum Inflow	hm3/day	0	0	0	0		
Maximum Outflow	hm3/day	0	0	0	0		
Inflow Seepage Rate	(cm/d) / cm	0.008	0	0	0.004		
Inflow Seepage Control Elev	cm	76	0	0	67		
Inflow Seepage Conc	ppb	20	20	20	90		
Outflow Seepage Rate	(cm/d) / cm	0.004	0.006	0.01	0.006		
Outflow Seepage Control Elev	cm	-61	-61	-30	12		
Max Outflow Seepage Conc	ppb	20	20	20	20		
Seepage Recycle Fraction	-	0.78	0.78	0.79	0.79		
Seepage Discharge Fraction	-	0	0	0	0		
Initial Water Column Conc	ppb	30	30	30	30		
Initial P Storage Per Unit Area	mg/m2	500	500	500	500		
Initial Water Column Depth	cm	50	50	50	50		
C0 = WC Conc at 0 g/m2 P Storage	ppb	*2*	*2*	*2*	*2*		
C1 = WC Conc at 1 g/m2 P storage	ppb	*22*	*22*	*22*	*22*		
K = Net Settling Rate at Steady State	m/yr	*41*	*41*	*28.16*	*28.16*		
Zx = Depth Scale Factor	cm	*60*	*60*	*60*	*60*		
C0 - Periphyton	ppb	*0*	*0*	*0*	*0*		
C1 - Periphyton	ppb	*0*	*0*	*0*	*0*		
K - Periphyton	1/yr	*0.00*	*0.00*	*0.00*	*0.00*		
Zx - Periphyton	cm	*0*	*0*	*0*	*0*		
Sm = Transition Storage Midpoint	mg/m2	*0*	*0*	*0*	*0*		
Sb = Transition Storage Bandwidth	mg/m2	*0*	*0*	*0*	*0*		

Output Variables	Units	1	2	3	4	5	6	Overall
Execution Time	seconds/yr	0.61	1.16	1.74	2.32			2.32
Run Date	-	03/14/05	03/14/05	03/14/05	03/14/05			03/14/05
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65			01/01/65
Starting Date for Output	-	01/01/65	01/01/65	01/01/65	01/01/65			01/01/65
Ending Date	-	12/31/95	12/31/95	12/31/95	12/31/95			12/31/95
Output Duration	days	11322	11322	11322	11322			11322
Cell Label		1	2	3	4			Total Outflow
Downstream Cell Label		Outflow	Outflow	Outflow	Outflow			-
Surface Area	km2	7.280	9.19	9.19	7.786428			33.4
Mean Water Load	cm/d	2.5	2.5	2.5	2.5			2.5
Max Water Load	cm/d	25.6	25.6	25.6	25.6			25.6
Inflow Volume	hm3/yr	67.4	85.1	85.1	72.1			309.6
Inflow Load	kg/yr	4942.0	6238.5	6238.5	5285.7			22704.8
Inflow Conc	ppb	73.3	73.3	73.3	73.3			73.3
Treated Outflow Volume	hm3/yr	68.9	79.0	77.4	71.9			297.1
Treated Outflow Load	kg/yr	834.9	990.7	1288.3	1243.3			4357.1
Treated FWM Outflow Conc	ppb	12.1	12.5	16.6	17.3			14.7
Total Outflow Volume	hm3/yr	68.9	79.0	77.4	71.9			297.1
Total Outflow Load	kg/yr	834.9	990.7	1288.3	1243.3			4357.1

Case 1_C3 - Adjusted Baseline Data - STA2_3

Output Variables	Units	1	2	3	4	5	6	Overall
Total FWM Outflow Conc	ppb	12.1	12.5	16.6	17.3			14.7
Bypass Volume	hm3/yr	0.00	0.00	0.00	0.00			0.00
Bypass Load	kg/yr	0.00	0.00	0.00	0.00			0.00
Bypass Conc	ppb	0.0	0.0	0.0	0.0			0.0
Bypass Load	%	0%	0%	0%	0%			0%
Surface Outflow Load Reduc	%	83.1%	84.1%	79.3%	76.5%			80.8%
Outflow Geometric Mean - Daily	ppb	10.3	10.4	14.1	15.6			11.9
Outflow Geo Mean - Composites	ppb	10.4	10.7	14.0	15.8			12.1
Frequency Outflow Conc > 10 ppb	%	100%	100%	#DIV/0!	100%			82%
95th Percentile Outflow Conc	ppb	13.4	15.5	#NUM!	19.7			17.6
Mean Biomass P Storage	mg/m2	721	695	951	970			835
Max Reservoir Storage	hm3	0.00	0.00	0.00	0.00			0.00
Reservoir Load Reduction	%	#N/A	#N/A	#N/A	#N/A			#N/A
Mean Depth	cm	53.7	47.4	58.8	48.7			52.2
Minimum Depth	cm	27.9	1.0	1.7	20.0			11.5
Maximum Depth	cm	126.1	112.9	121.7	107.6			117.0
Frequency Depth < 5 cm	%	0.0%	0.0%	0.0%	0.0%			0.0%
Flow/Width	m2/day	119	108	106	79			103.1
Max 1 Yr Flow-Wtd Conc	ppb	#N/A	#N/A	#N/A	#N/A			17.9
Max 5 Yr Flow-Wtd Conc	ppb	#N/A	#N/A	#N/A	#N/A			16.2
Max 1 Yr Geometric Mn Conc	ppb	#N/A	#N/A	#N/A	#N/A			15.9
Max 5 Yr Geometric Mn Conc	ppb	#N/A	#N/A	#N/A	#N/A			14.2
Depth Percentile vs. Calib Set	%	30%	22%	36%	24%			24%
Q/W Percentile vs. Calib Set	%	55%	50%	49%	36%			36%
Cin Percentile vs. Calib Set	%	72%	70%	68%	74%			72%
Cout Percentile vs. Calib Set	%	-7%	-5%	#N/A	10%			10%
Depth Range Flag	-	OK	OK	OK	OK			0.0
Q/W Range Flag	-	OK	OK	OK	OK			0.0
Cin Range Flag	-	OK	OK	OK	OK			0.0
Cout Range Flag	-	FLAG	FLAG		OK			2.0
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%			0.00%
Mass Balance Error	%	0.23%	0.19%	0.16%	0.17%			0.19%

25% INCREASE IN ADJUSTED BASELINE FLOWS

DMSTA Input Values

Input Variable	Units	Value
Design Case Name	-	Case1
Starting Date for Simulation	-	01/01/65
Ending Date for Simulation	-	12/31/95
Starting Date for Output	-	01/01/65
Steps Per Day	-	3
Number of Iterations	-	2
Output Averaging Interval	days	7
Reservoir H2O Residence Time	days	0
Max Inflow / Mean Inflow	-	0
Max Reservoir Storage	hm3	0
Reservoir P Decay Rate	1/yr/ppb	0
Rainfall P Conc	ppb	10
Atmospheric P Load (Dry)	mg/m2-yr	20

Case Description: **Filename:** **25%QIncrease_AdjBase.xls**

Inputs for Cells 1 - 3 are the same as in the Strategy Paper
Cell 4 inputs based on preliminary design features
SAV_C4 for STA 2/Cell 4
25% Q Increase - Adjusted Baseline Data

Output Variable	Units	Value
Water Balance Error	%	0.0%
Mass Balance Error	%	0.2%
Flow-Wtd Conc - With Bypass	ppb	14.8
Flow-Wtd Conc - Without Bypass	ppb	14.8
Geometric Mean Conc	ppb	11.6
95th Percentile Conc	ppb	19.2
Freq Cell Outflow > 10 ppb	%	34%
Bypass Load	%	0.0%

Cell Number -->		1	2	3	4	5	6
Cell Label	-	1	2	3	4		
Vegetation Type	------->	STA2_1	STA2_1	SAV_C4	SAV_C4		
Inflow Fraction	-	0.218257478	0.275520085	0.275520085	0.230702351		
Downstream Cell Number	-	0	0	0	0		
Surface Area	km2	7.280	9.190	9.190	7.695		
Mean Width of Flow Path	km	1.58	2.00	2.00	2.50		
Number of Tanks in Series	-	3	3	3	3		
Outflow Control Depth	cm	40	40	60	42		
Outflow Coefficient - Exponent	-	2.63	3.1	2.84	2.84		
Outflow Coefficient - Intercept	-	0.52	0.66	0.57	0.57		
Bypass Depth	cm	0	0	0	0		
Maximum Inflow	hm3/day	0	0	0	0		
Maximum Outflow	hm3/day	0	0	0	0		
Inflow Seepage Rate	(cm/d) / cm	0.008	0	0	0.004		
Inflow Seepage Control Elev	cm	76	0	0	67		
Inflow Seepage Conc	ppb	20	20	20	90		
Outflow Seepage Rate	(cm/d) / cm	0.004	0.006	0.01	0.006		
Outflow Seepage Control Elev	cm	-61	-61	-30	12		
Max Outflow Seepage Conc	ppb	20	20	20	20		
Seepage Recycle Fraction	-	0.78	0.78	0.79	0.79		
Seepage Discharge Fraction	-	0	0	0	0		
Initial Water Column Conc	ppb	30	30	30	30		
Initial P Storage Per Unit Area	mg/m2	500	500	500	500		
Initial Water Column Depth	cm	50	50	50	50		
C0 = WC Conc at 0 g/m2 P Storage	ppb	*2*	*2*	*4*	*4*		
C1 = WC Conc at 1 g/m2 P storage	ppb	*22*	*22*	*22*	*22*		
K = Net Settling Rate at Steady State	m/yr	*41*	*41*	*80.10*	*80.10*		
Zx = Depth Scale Factor	cm	*60*	*60*	*60*	*60*		
C0 - Periphyton	ppb	*0*	*0*	*0*	*0*		
C1 - Periphyton	ppb	*0*	*0*	*0*	*0*		
K - Periphyton	1/yr	*0.00*	*0.00*	*0.00*	*0.00*		
Zx - Periphyton	cm	*0*	*0*	*0*	*0*		
Sm = Transition Storage Midpoint	mg/m2	*0*	*0*	*0*	*0*		
Sb = Transition Storage Bandwidth	mg/m2	*0*	*0*	*0*	*0*		

Output Variables	Units	1	2	3	4	5	6	Overall
Execution Time	seconds/yr	0.61	1.19	1.77	2.32			2.32
Run Date	-	03/16/05	03/16/05	03/16/05	03/16/05			03/16/05
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65			01/01/65
Starting Date for Output	-	01/01/65	01/01/65	01/01/65	01/01/65			01/01/65
Ending Date	-	12/31/95	12/31/95	12/31/95	12/31/95			12/31/95
Output Duration	days	11322	11322	11322	11322			11322
Cell Label		1	2	3	4			Total Outflow
Downstream Cell Label		Outflow	Outflow	Outflow	Outflow			-
Surface Area	km2	7.280	9.19	9.19	7.6951			33.4
Mean Water Load	cm/d	3.2	3.2	3.2	3.2			3.2
Max Water Load	cm/d	32.1	32.1	32.1	32.1			32.1
Inflow Volume	hm3/yr	84.5	106.6	106.6	89.3			387.1
Inflow Load	kg/yr	6194.4	7819.5	7819.5	6547.6			28381.0
Inflow Conc	ppb	73.3	73.3	73.3	73.3			73.3
Treated Outflow Volume	hm3/yr	85.5	100.4	98.8	88.9			373.6
Treated Outflow Load	kg/yr	1237.8	1493.3	1469.8	1313.4			5514.3
Treated FWM Outflow Conc	ppb	14.5	14.9	14.9	14.8			14.8
Total Outflow Volume	hm3/yr	85.5	100.4	98.8	88.9			373.6
Total Outflow Load	kg/yr	1237.8	1493.3	1469.8	1313.4			5514.3

Case 1 - 25% Q Increase - Adjusted Baseline Data - SAV_C4

Output Variables	Units	1	2	3	4	5	6	Overall
Total FWM Outflow Conc	ppb	14.5	14.9	14.9	14.8			14.8
Bypass Volume	hm3/yr	0.00	0.00	0.00	0.00			0.00
Bypass Load	kg/yr	0.00	0.00	0.00	0.00			0.00
Bypass Conc	ppb	0.0	0.0	0.0	0.0			0.0
Bypass Load	%	0%	0%	0%	0%			0%
Surface Outflow Load Reduc	%	80.0%	80.9%	81.2%	79.9%			80.6%
Outflow Geometric Mean - Daily	ppb	12.3	12.4	9.6	9.7			11.4
Outflow Geo Mean - Composites	ppb	12.5	12.7	9.3	9.7			11.6
Frequency Outflow Conc > 10 ppb	%	100%	100%	0%	0%			68%
95th Percentile Outflow Conc	ppb	17.4	17.7	7.5	9.0			19.2
Mean Biomass P Storage	mg/m2	856	829	490	508			667
Max Reservoir Storage	hm3	0.00	0.00	0.00	0.00			0.00
Reservoir Load Reduction	%	#N/A	#N/A	#N/A	#N/A			#N/A
Mean Depth	cm	56.7	50.3	61.4	50.8			54.9
Minimum Depth	cm	28.0	1.0	5.4	20.9			12.7
Maximum Depth	cm	137.6	123.0	132.9	117.1			127.5
Frequency Depth < 5 cm	%	0.0%	0.0%	0.0%	0.0%			0.0%
Flow/Width	m2/day	148	137	135	97			129.9
Max 1 Yr Flow-Wtd Conc	ppb	#N/A	#N/A	#N/A	#N/A			20.2
Max 5 Yr Flow-Wtd Conc	ppb	#N/A	#N/A	#N/A	#N/A			16.1
Max 1 Yr Geometric Mn Conc	ppb	#N/A	#N/A	#N/A	#N/A			14.7
Max 5 Yr Geometric Mn Conc	ppb	#N/A	#N/A	#N/A	#N/A			13.1
Depth Percentile vs. Calib Set	%	34%	26%	40%	26%			26%
Q/W Percentile vs. Calib Set	%	69%	64%	63%	45%			45%
Cin Percentile vs. Calib Set	%	73%	72%	69%	75%			73%
Cout Percentile vs. Calib Set	%	2%	3%	3%	3%			3%
Depth Range Flag	-	OK	OK	OK	OK			0.0
Q/W Range Flag	-	OK	OK	OK	OK			0.0
Cin Range Flag	-	OK	OK	OK	OK			0.0
Cout Range Flag	-	OK	OK	OK	OK			0.0
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%			0.00%
Mass Balance Error	%	0.24%	0.20%	0.12%	0.12%			0.17%

DMSTA Input Values

Input Variable	Units	Value
Design Case Name	-	Case1_C3
Starting Date for Simulation	-	01/01/65
Ending Date for Simulation	-	12/31/95
Starting Date for Output	-	01/01/65
Steps Per Day	-	3
Number of Iterations	-	2
Output Averaging Interval	days	7
Reservoir H2O Residence Time	days	0
Max Inflow / Mean Inflow	-	0
Max Reservoir Storage	hm3	0
Reservoir P Decay Rate	1/yr/ppb	0
Rainfall P Conc	ppb	10
Atmospheric P Load (Dry)	mg/m2-yr	20

Case Description: **Filename:** **25%QIncrease_AdjBase.xls**

Inputs for Cells 1 - 3 are the same as in the Strategy Paper
Cell 4 inputs based on preliminary design features
STA2_3 for STA 2/Cell 4
25% Q Increase - Adjusted Baseline Data

Output Variable	Units	Value
Water Balance Error	%	0.0%
Mass Balance Error	%	0.2%
Flow-Wtd Conc - With Bypass	ppb	17.5
Flow-Wtd Conc - Without Bypass	ppb	17.5
Geometric Mean Conc	ppb	14.7
95th Percentile Conc	ppb	21.0
Freq Cell Outflow > 10 ppb	%	100%
Bypass Load	%	0.0%

Cell Number -->		1	2	3	4	5	6
Cell Label	-	1	2	3	4		
Vegetation Type	------->	STA2_1	STA2_1	STA2_3	STA2_3		
Inflow Fraction	-	0.218257478	0.275520085	0.275520085	0.230702351		
Downstream Cell Number	-	0	0	0	0		
Surface Area	km2	7.280	9.190	9.190	7.695		
Mean Width of Flow Path	km	1.58	2.00	2.00	2.50		
Number of Tanks in Series	-	3	3	3	3		
Outflow Control Depth	cm	40	40	60	42		
Outflow Coefficient - Exponent	-	2.63	3.1	2.84	2.84		
Outflow Coefficient - Intercept	-	0.52	0.66	0.57	0.57		
Bypass Depth	cm	0	0	0	0		
Maximum Inflow	hm3/day	0	0	0	0		
Maximum Outflow	hm3/day	0	0	0	0		
Inflow Seepage Rate	(cm/d) / cm	0.008	0	0	0.004		
Inflow Seepage Control Elev	cm	76	0	0	67		
Inflow Seepage Conc	ppb	20	20	20	90		
Outflow Seepage Rate	(cm/d) / cm	0.004	0.006	0.01	0.006		
Outflow Seepage Control Elev	cm	-61	-61	-30	12		
Max Outflow Seepage Conc	ppb	20	20	20	20		
Seepage Recycle Fraction	-	0.78	0.78	0.79	0.79		
Seepage Discharge Fraction	-	0	0	0	0		
Initial Water Column Conc	ppb	30	30	30	30		
Initial P Storage Per Unit Area	mg/m2	500	500	500	500		
Initial Water Column Depth	cm	50	50	50	50		
C0 = WC Conc at 0 g/m2 P Storage	ppb	*2*	*2*	*2*	*2*		
C1 = WC Conc at 1 g/m2 P storage	ppb	*22*	*22*	*22*	*22*		
K = Net Settling Rate at Steady State	m/yr	*41*	*41*	*28.16*	*28.16*		
Zx = Depth Scale Factor	cm	*60*	*60*	*60*	*60*		
C0 - Periphyton	ppb	*0*	*0*	*0*	*0*		
C1 - Periphyton	ppb	*0*	*0*	*0*	*0*		
K - Periphyton	1/yr	*0.00*	*0.00*	*0.00*	*0.00*		
Zx - Periphyton	cm	*0*	*0*	*0*	*0*		
Sm = Transition Storage Midpoint	mg/m2	*0*	*0*	*0*	*0*		
Sb = Transition Storage Bandwidth	mg/m2	*0*	*0*	*0*	*0*		

Output Variables	Units	1	2	3	4	5	6	Overall
Execution Time	seconds/yr	0.61	1.19	1.77	2.35			2.35
Run Date	-	03/16/05	03/16/05	03/16/05	03/16/05			03/16/05
Starting Date for Simulation	-	01/01/65	01/01/65	01/01/65	01/01/65			01/01/65
Starting Date for Output	-	01/01/65	01/01/65	01/01/65	01/01/65			01/01/65
Ending Date	-	12/31/95	12/31/95	12/31/95	12/31/95			12/31/95
Output Duration	days	11322	11322	11322	11322			11322
Cell Label		1	2	3	4			Total Outflow
Downstream Cell Label		Outflow	Outflow	Outflow	Outflow			-
Surface Area	km2	7.280	9.19	9.19	7.6951			33.4
Mean Water Load	cm/d	3.2	3.2	3.2	3.2			3.2
Max Water Load	cm/d	32.1	32.1	32.1	32.1			32.1
Inflow Volume	hm3/yr	84.5	106.6	106.6	89.3			387.1
Inflow Load	kg/yr	6194.4	7819.5	7819.5	6547.6			28381.0
Inflow Conc	ppb	73.3	73.3	73.3	73.3			73.3
Treated Outflow Volume	hm3/yr	85.5	100.4	98.8	88.9			373.6
Treated Outflow Load	kg/yr	1237.8	1493.3	1949.1	1852.5			6532.6
Treated FWM Outflow Conc	ppb	14.5	14.9	19.7	20.8			17.5
Total Outflow Volume	hm3/yr	85.5	100.4	98.8	88.9			373.6
Total Outflow Load	kg/yr	1237.8	1493.3	1949.1	1852.5			6532.6
Total FWM Outflow Conc	ppb	14.5	14.9	19.7	20.8			17.5
Bypass Volume	hm3/yr	0.00	0.00	0.00	0.00			0.00

Case 1_3C - 25% Q Increase - Adjusted Baseline Data - STA2_3

Output Variables	Units	1	2	3	4	5	6	Overall
Bypass Load	kg/yr	0.00	0.00	0.00	0.00			0.00
Bypass Conc	ppb	0.0	0.0	0.0	0.0			0.0
Bypass Load	%	0%	0%	0%	0%			0%
Surface Outflow Load Reduc	%	80.0%	80.9%	75.1%	71.7%			77.0%
Outflow Geometric Mean - Daily	ppb	12.3	12.4	16.9	19.2			14.5
Outflow Geo Mean - Composites	ppb	12.5	12.7	16.8	19.6			14.7
Frequency Outflow Conc > 10 ppb	%	100%	100%	100%	100%			96%
95th Percentile Outflow Conc	ppb	17.4	17.7	19.3	25.3			21.0
Mean Biomass P Storage	mg/m2	856	829	1113	1159			989
Max Reservoir Storage	hm3	0.00	0.00	0.00	0.00			0.00
Reservoir Load Reduction	%	#N/A	#N/A	#N/A	#N/A			#N/A
Mean Depth	cm	56.7	50.3	61.4	50.8			54.9
Minimum Depth	cm	28.0	1.0	5.4	20.9			12.7
Maximum Depth	cm	137.6	123.0	132.9	117.1			127.5
Frequency Depth < 5 cm	%	0.0%	0.0%	0.0%	0.0%			0.0%
Flow/Width	m2/day	148	137	135	97			129.9
Max 1 Yr Flow-Wtd Conc	ppb	#N/A	#N/A	#N/A	#N/A			21.6
Max 5 Yr Flow-Wtd Conc	ppb	#N/A	#N/A	#N/A	#N/A			19.4
Max 1 Yr Geometric Mn Conc	ppb	#N/A	#N/A	#N/A	#N/A			19.5
Max 5 Yr Geometric Mn Conc	ppb	#N/A	#N/A	#N/A	#N/A			17.3
Depth Percentile vs. Calib Set	%	34%	26%	40%	26%			26%
Q/W Percentile vs. Calib Set	%	69%	64%	63%	45%			45%
Cin Percentile vs. Calib Set	%	73%	72%	70%	75%			73%
Cout Percentile vs. Calib Set	%	2%	3%	16%	18%			18%
Depth Range Flag	-	OK	OK	OK	OK			0.0
Q/W Range Flag	-	OK	OK	OK	OK			0.0
Cin Range Flag	-	OK	OK	OK	OK			0.0
Cout Range Flag	-	OK	OK	OK	OK			0.0
Water Balance Error	%	0.00%	0.00%	0.00%	0.00%			0.00%
Mass Balance Error	%	0.24%	0.20%	0.16%	0.17%			0.19%