APPENDIX E

LA-QUAL Model Vector Diagram

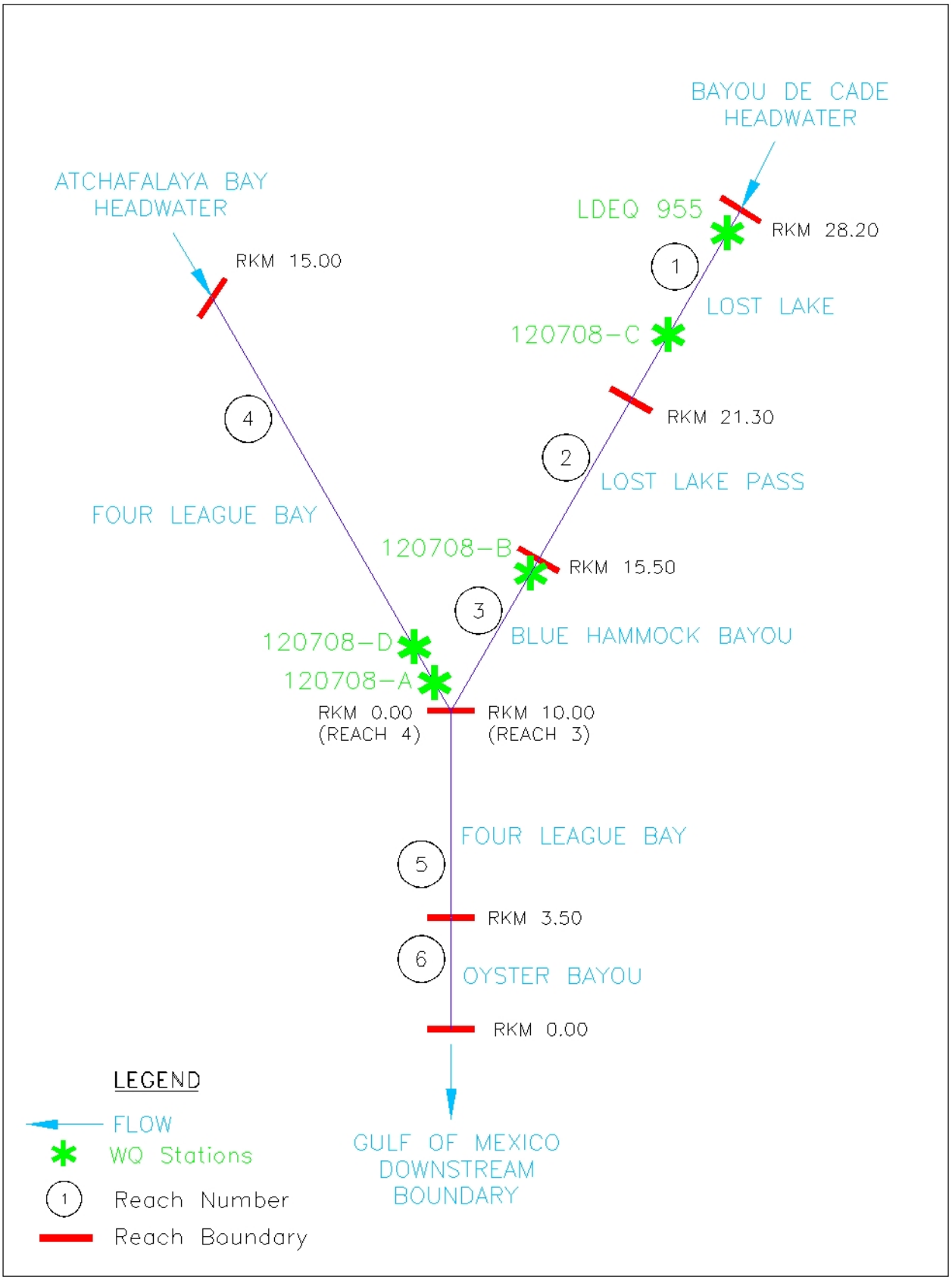

Figure E.1. LA-QUAL Vector Diagram for Lost Lake and Four League Bay.

APPENDIX F

Calculation of Net Dissolved Oxygen Added per Unit of Chlorophyll

STEADY STATE CALCULATION OF NET DO FROM PHOTOSYNTHESIS AND RESPIRATION FOR LAKE CONCORDIA

Value and units	Description of parameter	Data source / comments
49 ug/L	Chlorophyll a concentration	Observed value at station 1231 during FTN intensive field survey
60	Carbon to chlorophyll ratio	Table 6-4 in Rates, Constants, Kinetics manual
1.00 /day	Algal growth rate at solar noon	"Calibrated" to maintain steady state chl a conc. (within range of values in Table 6-5 in Rates, Constants, Kinetics manual)
0.16 /day	Algal respiration rate	"Calibrated" to maintain steady state chl a conc. (within range of values in Table 6-18 in Rates, Constants, Kinetics manual)
0.19 m/day	Algal settling rate	"Calibrated" to maintain steady state chl a conc. (within range of values in Table 6-19 in Rates, Constants, Kinetics manual
1.56 m	Depth of photic zone	Equations 7.27 and 7.28 of Thomann and Mueller (1987) and assumed secchi depth of 2.0 ft
2.67 g O2 / g C	Oxygen produced per unit of algal growth	Table 3-29 in Rates, Constants, Kinetics manual (consistent with stoichiometric ratio of 1 mole O2 per mole C in photosynthesis)
2.00 g O2 / g C	Oxygen depleted per unit of algal respiration	Table 3-30 in Rates, Constants, Kinetics manual
5:25 AM	Time of sunrise	For midpoint of calibration period (Aug. 5, 2002) for Ferriday, LA
6:58 PM	Time of sunset	For midpoint of calibration period (Aug. 5, 2002) for Ferriday, LA

Notes:

1. Limitation of algal growth due to sunlight was assumed to vary during the day as a triangular function between sunrise and sunset.
2. Algae conc (mg/L of C) = Chl a conc (ug/L) / 1000 (ug/L per mg/L) * Carbon:Chl a ratio (mg/L C per mg/L chl a)
3. Algal growth (mg/L of C per day) = Max growth rate (1/day) * limitation of max growth rate * Algae conc. (mg/L of C)
4. Algal respiration (mg/L of C per day) = Respiration rate (1/day) * Algae conc. (mg/L of C)
5. Algal settling (mg/L of C per day) = Settling rate (m/day) / Photic zone depth (m) * Algae conc. (mg/L of C)
6. Photic zone depth (m) = 4.61 / Light extinction coefficient (1/m)
7. Light extinction coefficient (1/m) = 1.8 / Secchi depth (m)
8. Rate of O2 produced from photosynthesis = Algal growth (mg/L of C per day) * 2.67 g O2 / g C
9. Rate of O2 consumed from respiration = Algal respiration (mg/L of C per day) * 2.00 g O2 / g C

Time of day	Limitation of max. algal growth due to sunlight	Algal growth (mg/L of C per day)	Algal respiration (mg/L of C per day)	Algal settling (mg/L of C per day)	Rate of O2 production by photosynth. (mg/L/day)	Rate of O2 consumption by respiration (mg/L/day)
12:00 AM	0	0	0.47	0.36	0	0.94
12:30 AM	0	0	0.47	0.36	0	0.94
1:00 AM	0	0	0.47	0.36	0	0.94
1:30 AM	0	0	0.47	0.36	0	0.94
2:00 AM	0	0	0.47	0.36	0	0.94
2:30 AM	0	0	0.47	0.36	0	0.94
3:00 AM	0	0	0.47	0.36	0	0.94
3:30 AM	0	0	0.47	0.36	0	0.94
4:00 AM	0	0	0.47	0.36	0	0.94
4:30 AM	0	0	0.47	0.36	0	0.94
5:00 AM	0	0	0.47	0.36	0	0.94
5:30 AM	0.012	0.04	0.47	0.36	0.10	0.94
6:00 AM	0.086	0.25	0.47	0.36	0.68	0.94
6:30 AM	0.160	0.47	0.47	0.36	1.25	0.94
7:00 AM	0.234	0.69	0.47	0.36	1.83	0.94
7:30 AM	0.308	0.90	0.47	0.36	2.41	0.94
8:00 AM	0.381	1.12	0.47	0.36	2.99	0.94
8:30 AM	0.455	1.34	0.47	0.36	3.57	0.94
9:00 AM	0.529	1.55	0.47	0.36	4.15	0.94
9:30 AM	0.603	1.77	0.47	0.36	4.73	0.94
10:00 AM	0.677	1.99	0.47	0.36	5.30	0.94
10:30 AM	0.750	2.21	0.47	0.36	5.88	0.94
11:00 AM	0.824	2.42	0.47	0.36	6.46	0.94
11:30 AM	0.898	2.64	0.47	0.36	7.04	0.94
12:00 PM	0.972	2.86	0.47	0.36	7.62	0.94
12:30 PM	0.954	2.81	0.47	0.36	7.48	0.94
1:00 PM	0.881	2.59	0.47	0.36	6.90	0.94
1:30 PM	0.807	2.37	0.47	0.36	6.33	0.94
2:00 PM	0.733	2.16	0.47	0.36	5.75	0.94
2:30 PM	0.659	1.94	0.47	0.36	5.17	0.94
3:00 PM	0.585	1.72	0.47	0.36	4.59	0.94
3:30 PM	0.512	1.50	0.47	0.36	4.01	0.94
4:00 PM	0.438	1.29	0.47	0.36	3.43	0.94
4:30 PM	0.364	1.07	0.47	0.36	2.85	0.94
5:00 PM	0.290	0.85	0.47	0.36	2.28	0.94
5:30 PM	0.216	0.64	0.47	0.36	1.70	0.94

Time of day	Limitation of max. algal growth due to sunlight	Algal growth (mg/L of C per day)	Algal respiration (mg/L of C per day)	Algal settling (mg/L of C per day)	Rate of O2 production by photosynth. (mg/L/day)	Rate of O2 consumption by respiration (mg/L/day)
6:00 PM	0.143	0.42	0.47	0.36	1.12	0.94
6:30 PM	0.069	0.20	0.47	0.36	0.54	0.94
7:00 PM	0	0	0.47	0.36	0	0.94
7:30 PM	0	0	0.47	0.36	0	0.94
8:00 PM	0	0	0.47	0.36	0	0.94
8:30 PM	0	0	0.47	0.36	0	0.94
9:00 PM	0	0	0.47	0.36	0	0.94
9:30 PM	0	0	0.47	0.36	0	0.94
10:00 PM	0	0	0.47	0.36	0	0.94
10:30 PM	0	0	0.47	0.36	0	0.94
11:00 PM	0	0	0.47	0.36	0	0.94
11:30 PM	0	0	0.47	0.36	0	0.94
24-hour averages =		0.83	0.47	0.36	2.21	0.94

Net rate of change in algal biomass = 0.83 – 0.47 – 0.36 = 0.00 mg/L of C per day (zero means steady state)

Net rate of change in DO over 24 hrs = 2.21 – 0.94 = 1.27 mg/L of O2 per day

Net DO added to water per unit of chlorophyll over 24 hrs = 1.27 / 49 = 0.026 mg/L of O2 per day per ug/L of chl a

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APPENDIX G

Calibration Model Inputs

APPENDIX G. CALIBRATION MODEL INPUT DATA AND SOURCES.

Table G.1. Calibration Inputs for Hydraulics (Data Type 9).

Parameter Name or Description	Reach(es)	Value used in Model	Data Source /Comment
Width Coefficient A	1	2556.16	Surface area of Lost Lake divided by reach length in LA-QUAL model
	2	547.79	Based on eight cross sections measured in Lost Lake Pass from a DOQQ
	3	546.58	Based on eleven cross sections measured in Blue Hammock Bayou from a DOQQ
	4	4298.26	Surface area of Four League Bay divided by reach length in LA-QUAL model
	5	2974.87	Surface area of Four League Bay divided by reach length in LA-QUAL model
	6	209.31	Based on eight cross sections measured in Oyster Bayou from a DOQQ
Width Coefficient B and C	1-6	0	Set to zero to hold the width constant
Depth Coefficient D	1	0.85	Average of data from FTN survey for stations 955 and 120708-C and four topographic spot depths
	2	0.76	Average of four spot depths found on topographic maps
	3	2.26	Average of depth from FTN survey for station 120708-B and five spot depths from topographic maps
	4	1.24	Average of depths from FTN survey for stations 120708-A and 120708-D and 31 topographic spot depths
	5	0.75	Average of nine spot depths found on topographic maps
	6	4.00	Based on one spot depth from topographic map and adjusted based on best professional judgment
Depth Coefficients E and F	1-6	0	Set to zero to hold the depth constant

Table G.2. Calibration Inputs for Dispersion and Lower Boundary Conditions (Data Types 10 and 27).

Parameter Name or Description	Reach(es)	Value used in Model	Data Source / Comment
Dispersion	1	0.30 m^2/sec	Used as a tuning knob with the specific conductivity since most transport will be from dispersion and not advective flow
	2	0.40 m^2/sec	
	3	0.50 m^2/sec	
	4	0.45 m^2/sec	
	5	0.65 m^2/sec	
	6	0.65 m^2/sec	
Temperature	1-6	30.175°C	Average of 2 July values measured in Caillou Bayou South of Bayou Grand Caillou (LDEQ 957). CBODu was set equal to the average TOC times a CBODu to TOC ratio developed from the FTN survey.
Salinity	NA	21.350 ppt	
Specific Conductivity	NA	33,905 µmhos/cm	
DO	NA	6.105 mg/L	
CBODu	NA	6.27 mg/L	
Organic Nitrogen	NA	0.6 mg/L	
Ammonia Nitrogen	NA	0.1 mg/L	

Table G.3. Calibration Inputs for Initial Conditions (Data Type 11).

Parameter Name or Description	Reach(es)	Value used in Model	Data Source / Comment
Temperature (ºC)	1	32.00	Average of two temperatures measured at FTN survey Stations 955 and 120708-C
	2	31.10	Temperature measured at FTN survey Station 120708-C
	3	31.00	Temperature measured at FTN survey Station 120708-B
	4	31.80	Average of two temperatures measured at FTN survey Stations 120708-D and 120708-A
	5	31.80	Same as each 5 since reaches 5 and 6 are both Four League Bay
	6	31.70	Temperature measured at FTN survey Station 120708-A
DO (mg/L)	1	6.15	Average of two estimated minimum DO +1 mg/L for FTN survey Stations 955 and 120708-C
	2	5.80	Estimated min DO + 1 mg/L for FTN survey Station 120708-C
	3	5.20	Estimated min DO + 1 mg/L for FTN survey Station 120708-B
	4	6.16	Average of two estimated min DO + 1 mg/L for FTN survey Stations 120708-D and 120708-A
	5	6.16	Same as reach 5 since reaches 5 and 6 are both Four League Bay
	6	6.16	Estimated min DO + 1 mg/L 120708-A (Stations 120708-A and 120708-D had the same estimated min DO + 1 mg/L)
Ammonia (mg/L)	1-6	0.1	Concentration measured at every station was below the detection limit of 0.1 mg/L, so it was set to 0.1 mg/L
Chlorophyll a (µg/L)	1-6	58	Average of values measured at FTN survey Station 120708-A, 120708-B, and 120708-C

Table G.4. Calibration Inputs for NPS Loads (Data Types 12, 13, and 19).

Reach	Organic Nitrogen (kgs/day)	Benthic NH_3 rate ($gm/m^2/day$)	CBODu (kg/day)	Sediment Oxygen Demand ($gm/m^2/day$)	Comment
1	600	0	42,000	0.25	These are used as tunning knobs to calibrate the model as described in Section 4.8.
2	90	0	2,000	1.90	
3	300	0	5,500	3.05	
4	2,400	0	125,000	0.53	
5	500	0	20,000	0.90	
6	100	0	4,000	2.10	

Table G.5. Calibration Inputs for Headwaters (Data Types 20 and 21).

Name of Inflow	Parameter Name	Value Used in Model	Data Source / Comment
Bayou De Cade	Flow rate	0.028 m^3/sec	Flow recommended by LTP when no other flow is available (1 cfs).
	Salinity	4.78 ppt	Values measured at 120708-F during FTN intensive survey. Since the ammonia measured at 120708-F was below the detection limit of 0.1 mg/L, it was set equal to the detection limit. Organic N was TKN minus ammonia.
	Specific Conductivity	8,320 µmhos/cm	
	DO	7.80 mg/L	
	CBODu	5.88 mg/L	
	Organic N	1.40 mg/L	
	Ammonia N	0.10 mg/L	
Four League Bay	Flow rate	0.028 m^3/sec	Flow recommended by LTP when no other flow is available (1 cfs).
	Salinity	1.95 ppt	Average of values measured at LDEQ station 1204 during low flow conditions (flow < 150,000 cfs).
	Specific Conductivity	3,058 µmhos/cm	
	DO	7.8 mg/L	
	CBODu	6.01 mg/L	
	Organic N	0.57 mg/L	
	Ammonia N	0.10 mg/L	

APPENDIX H

TOC to CBODu Ratio Calculations

Table H.1. Calculation of TOC to CBODu ratio and CBODu decay rate for Lost Lake and Four League Bay LA-QUAL model.

Subsegment No.	Site Number	Site Name	Sampling Date	TOC (mg/L)	CBODu (mg/L)	CBODu/ TOC	CBODu decay (1/day)
120304	340	Intracoastal Waterway east of Houma, LA	7/21/06	5.90	3.65	0.62	0.43
	120304-A	Intracoastal Waterway at Larose, LA	7/21/06	6.60	3.80	0.58	0.38
120401	120401-A	Bayou Penchant southeast of Bayou Chene	7/18/06	7.00	16.08	2.30	0.05
	120401-C	Bayou Copsaw near Bayou Penchant	7/20/06	8.10	6.17	0.76	0.18
	120401-D	Bayou Penchant nera Brady Canal	7/20/06	7.90	5.21	0.66	0.59
	120401-G	Bayou Penchant near Kent Bayou Oil and Gas Field	7/18/06	6.70	19.33	2.89	0.15
120403	120403-D	Intracoastal Waterway west of Minors Canal	7/20/06	6.90	3.29	0.48	0.10
	120403-G-1	Bayou Boeuf at Amelia, LA	7/18/06	7.90	27.57	3.49	0.04
	120403-G-2	Bayou Boeuf at Amelia, LA	7/18/06	7.70	15.20	1.97	0.31
	120403-H	Intracoastal Waterway near lock at Morgan City	7/18/06	4.80	2.40	0.50	0.60
	120403-I	Bayou Chene near Intracoastal Waterway	7/18/06	7.50	13.79	1.84	0.43
	120403-J	Houma Navigation Canal near Houma	7/21/06	6.50	3.67	0.56	0.22
120404	935	Peoples Canal north of Bayou Mauvais Bois Ridge, LA	7/20/06	6.80	3.42	0.50	0.36
	120404-A	Lake Penchant	7/20/06	6.60	3.01	0.46	0.27
120405	936	Minors Canal north of Marmande Ridge, LA	7/17/06	7.50	7.16	0.96	0.35
	120405-A-1	Lake Hatch	7/21/06	11.00	28.07	2.55	0.04
	120405-A-2	Lake Hatch	7/21/06	10.00	37.98	3.80	0.04
	120405-D	Marmande Canal east of Minors Canal	7/17/06	7.10	4.50	0.63	0.60
120406	937	Lake deCade (western part)	7/17/06	7.20	2.72	0.38	0.31
	120406-A	Falgout Canal Bayou	7/17/06	8.30	5.26	0.63	0.33
120604	945	Bayou Blue SSW of Larose, LA	7/21/06	7.70	4.04	0.53	0.36
	945-2	Bayou Blue SSW of Larose, LA	7/21/06	7.80	4.02	0.52	0.34
120708	120708-A	Four League Bay	7/17/06	5.20	5.75	1.11	0.39
	120708-B	Blue Hammock Bayou	7/17/06	5.00	5.51	1.10	0.60
	120708-C	Lost Lake (western part)	7/17/06	7.60	8.04	1.06	0.38
	120708-F	Bayou de Cade near Lost Lake	7/17/06	8.20	5.88	0.72	0.22
					Min	0.38	0.05
					Median	0.72	0.33
					Average	1.09	0.32
					Max	2.89	0.60

Note: The duplicates at 120405-A and 945 have been averaged to give one value for each day. The statistics also are adjusted to use the average of the two duplicates and not both duplicates.

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APPENDIX I

Wind-Aided Reaeration Calculations for Calibration

Table I.1. Wind-Aided Reaeration for Lost Lake and Four League Bay Calibration Model.

Wind-Aided Reaeration Coefficient Equation (Eq.3-23 from Rates, Constants, and Kinetics publication)

$K_{L\ with\ wind} = K_{L\ without\ wind} [1+(0.2395V_w^{1.643})]$ **Equation 1**

V_w = wind velocity in meters per second
K_2 = reaeration in 1/day that does not account for wind effects. For LA-QUAL defualt K_L = 0.7 m/day.
D = depth in meters
$K_L = K_2 * D$ (=oxygen transfer coefficient "a" in model)

Formula to correct wind speed for elevation (obtained from LDEQ):

$V_{w@\ height\ z} = V_{w@\ height\ s} [(z/s)^{0.143}]$ **Equation 2**

CALCULATIONS FOR CALIBRATION PERIOD:

Calibration Period: July 17, 2006 (FTN intensive survey on Lost Lake and Four League Bay)

Station	Average Wind Speed (knots)	Average Wind Speed (m/s)	Height of Wind Measurement (m)	Height for Calculating Wind-Aided K_L (m)	Wind Speed at Surface using Eqn 2 (m/s)	K_L without wind (m/day)	K_L with wind using Eqn 1 (m/day)
Houma, LA (Hourly)	4.1	2.1	10	0.1	1.1	0.7	0.89

Raw data (windspeed in m/sec)

Time	Value
5	4.1
1050	0
1150	0
1250	0
1400	0
1450	2.1
1600	3.1
1650	2.6
1750	0
1950	7.2
2005	3.6
2050	2.6
avg =	2.1

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APPENDIX J

NBOD Decay Rates

Table J.1. Summary of GSBOD data collected by LDEQ in the Terrebonne basin.

Sample No.	NBODu (mg/L)	NBODu rate (1/day)	CBODu (mg/L)	CBODu rate (1/day)	TBODu (mg/L)	TOC (mg/L)	CBODu / TOC
CC-03	4.17	0.10	19.33	0.09	23.50	11.50	1.68
BLB-01	3.56	0.09	16.53	0.09	20.08	12.10	1.37
BLB-04	4.78	0.17	20.15	0.09	24.93	13.00	1.55
BLB-05	3.94	0.12	16.36	0.09	20.31	12.30	1.33
BLB-07	2.92	0.10	12.09	0.08	15.01	13.90	0.87
LL-02	4.99	0.13	21.31	0.10	26.29	11.70	1.82
LL-02FD	5.79	0.08	22.39	0.10	28.18	11.70	1.91
AC-01	3.32	0.09	7.80	0.07	11.12	6.80	1.15
UHC-02	3.18	0.10	9.19	0.09	12.37	6.70	1.37
TC-01	2.89	0.09	10.47	0.09	13.36	9.50	1.10
MCM-01	1.81	0.09	8.24	0.06	10.05	11.00	0.75
BCUT-07	2.23	0.10	9.60	0.06	11.82	12.50	0.77
DMC-01	2.84	0.10	10.97	0.08	13.81	16.30	0.67
LF-02	4.17	0.09	22.43	0.09	26.60	20.30	1.10
LF-02FD	4.45	0.10	23.73	0.09	28.17	20.80	1.14
UHC-01	0.84	0.12	7.12	0.05	7.96	11.50	0.62
BL-01	4.05	0.09	13.89	0.10	17.95	18.40	0.76
ICWW-02	2.81	0.06	8.99	0.08	11.81	12.30	0.73
AC-02	2.58	0.10	9.19	0.05	11.77	18.80	0.49
FA-01	6.87	0.21	11.61	0.09	18.48	18.60	0.62
TFC-01	4.64	0.11	10.11	0.06	14.75	17.10	0.59
ICWW-01	2.54	0.06	4.16	0.22	6.71	9.80	0.42
LHC-01	2.52	0.13	13.02	0.09	15.54	15.80	0.82
OFC-02	1.99	0.10	11.16	0.07	13.16	12.20	0.92
OFC-02FD	2.34	0.11	11.96	0.08	14.30	12.50	0.96
LV1	1.69	0.06	4.74	0.05	6.43	7.50	0.63
LV1FD	1.74	0.07	4.62	0.05	6.36	7.30	0.63
LGBY2	1.16	0.10	7.13	0.05	8.29	10.40	0.69
LGBY3	1.32	0.09	6.63	0.06	7.96	9.80	0.68
LGBY4	1.25	0.09	6.23	0.06	7.47	10.00	0.62
LGBY5	2.19	0.11	8.93	0.09	11.12	8.50	1.05
LV2	3.87	0.09	16.43	0.11	20.31	8.10	2.03
BYS1	3.85	0.11	13.64	0.10	17.49	8.90	1.53
MB1	1.01	0.08	6.32	0.05	7.33	10.20	0.62
MB1FD	1.01	0.08	5.93	0.05	6.94	10.20	0.58
BYC1	1.27	0.05	7.15	0.07	8.42	7.10	1.01
BYC2	2.28	0.11	10.54	0.08	12.82	9.40	1.12
PST1	1.94	0.08	10.48	0.08	12.42	10.20	1.03
BYCO1	0.78	0.09	4.97	0.06	5.76	8.90	0.56
BYCO1FD	0.77	0.09	4.97	0.05	5.75	8.90	0.56
UNC2	1.16	0.08	5.75	0.08	6.91	8.50	0.68
BA1	1.02	0.08	5.80	0.07	6.83	8.50	0.68
LBL1	0.75	0.09	6.09	0.07	6.84	9.20	0.66

Sample No.	NBODu (mg/L)	NBODu rate (1/day)	CBODu (mg/L)	CBODu rate (1/day)	TBODu (mg/L)	TOC (mg/L)	CBODu / TOC
WC1	2.54	0.09	8.20	0.09	10.74	8.60	0.95
WCL1	2.26	0.10	9.58	0.09	11.83	8.30	1.15
BC-05	3.24	0.13	17.05	0.07	20.29	21.20	0.80
BC-07	3.36	0.09	15.77	0.07	19.13	18.80	0.84
BC-09	3.16	0.12	14.97	0.07	18.13	17.20	0.87
LB-03	2.92	0.17	13.06	0.07	15.99	13.90	0.94
BB-02	4.45	0.06	18.21	0.08	22.66	0.00	
BC-01	2.55	0.10	9.15	0.10	11.71	18.30	0.50
BC-01,FD	2.80	0.10	10.10	0.10	12.90	18.00	0.56
BC-02	2.43	0.09	10.16	0.08	12.59	17.30	0.59
BC-03	1.90	0.13	11.46	0.06	13.37	21.50	0.53
BD01	2.96	0.11	10.90	0.08	13.86	12.90	0.84
CO1	5.64	0.20	10.74	0.06	16.39	21.30	0.50
CO2	4.87	0.29	13.35	0.08	18.22	21.10	0.63
CO3	2.80	0.09	12.40	0.04	15.19	29.80	0.42
CO4	4.57	0.21	12.51	0.07	17.07	15.40	0.81
CO5	3.03	0.13	10.36	0.06	13.38	21.60	0.48
DC01	4.24	0.09	19.48	0.07	23.72	19.40	1.00
LB01	3.42	0.09	16.10	0.06	19.52	17.60	0.92
LB02	3.47	0.09	15.13	0.07	18.60	14.90	1.02
LB06	3.27	0.09	17.86	0.05	21.13	17.30	1.03
LB09	3.28	0.17	20.06	0.05	23.34	15.40	1.30
LB09FD	3.33	0.13	19.79	0.05	23.13	14.60	1.36
LB11	2.08	0.09	12.64	0.04	14.71	11.20	1.13
LB11FD	2.25	0.09	13.30	0.04	15.55	10.00	1.33
MC01	2.31	0.10	11.31	0.06	13.62	10.60	1.07
NC01	3.28	0.09	20.05	0.05	23.33	14.00	1.43
PC01	3.63	0.11	15.52	0.06	19.14	13.60	1.14
PC02	2.36	0.10	10.19	0.05	12.55	9.60	1.06
SL01	2.09	0.19	15.44	0.05	17.53	25.10	0.62
SL02	1.73	0.18	15.16	0.04	16.89	19.50	0.78
GC1	3.12	0.29	10.88	0.04	14.01	9.10	1.20
GC2	5.12	0.42	10.29	0.07	15.41	6.90	1.49
GC3	3.46	0.23	6.08	0.07	9.54	7.50	0.81
GC3FD	3.56	0.23	6.14	0.07	9.70	8.80	0.70
GC4	2.66	0.24	7.37	0.07	10.02	9.10	0.81
GC5	1.78	0.15	6.80	0.06	8.58	8.30	0.82
GC6	2.37	0.15	13.51	0.09	15.88	21.40	0.63
GC7	1.46	0.09	9.17	0.05	10.64	15.50	0.59
UNC1	6.20	0.51	9.08	0.05	15.28	10.20	0.89
SLC1	1.92	0.35	14.27	0.04	16.19	32.60	0.44
BPC1	2.07	0.14	6.70	0.08	8.77	7.90	0.85
PC2	2.35	0.10	10.76	0.08	13.11	10.50	1.03
PC3	2.32	0.21	8.25	0.08	10.57	8.80	0.94
PC3A	1.38	0.10	6.44	0.06	7.82	8.10	0.79

Table J.1. Summary of GSBOD data.

Sample No.	NBODu (mg/L)	NBODu rate (1/day)	CBODu (mg/L)	CBODu rate (1/day)	TBODu (mg/L)	TOC (mg/L)	CBODu / TOC
PC4	1.61	0.07	24.97	0.01	26.58	8.10	3.08
PC5	1.52	0.14	7.04	0.07	8.56	10.10	0.70
PC6	2.04	0.13	6.93	0.09	8.97	9.90	0.70
PC6FD	2.29	0.11	7.21	0.10	9.50	9.90	0.73
BGT1B	2.01	0.16	5.89	0.06	7.90	7.10	0.83
BGT2	3.97	0.12	17.22	0.09	21.19	7.50	2.30
BGT3	3.23	0.11	15.41	0.07	18.64	12.40	1.24
BGT3FD	3.28	0.12	15.67	0.07	18.95	14.10	1.11
BGT4	3.96	0.10	19.23	0.09	23.18	13.80	1.39
BGT5	3.86	0.17	11.72	0.06	15.58	14.60	0.80
BGT5FD	3.92	0.15	12.23	0.06	16.15	17.90	0.68
BGT6	3.56	0.13	14.89	0.06	18.45	17.10	0.87
BGT7	2.58	0.13	13.95	0.05	16.53	19.20	0.73
BGT8	1.14	0.05	4.94	0.05	6.08	6.90	0.72
BGT9	2.46	0.09	7.89	0.11	10.35	5.00	1.58
BGT12	2.50	0.09	11.20	0.06	13.70	14.10	0.79
BGT13	1.85	0.08	12.99	0.04	14.85	17.60	0.74
BGT14	3.30	0.05	18.18	0.06	21.48	20.40	0.89
BGT15	2.78	0.09	13.60	0.05	16.38	20.90	0.65
BGT1A	1.87	0.11	5.33	0.05	7.20	8.20	0.65
BM1	5.58	0.04	21.49	0.08	27.08	11.10	1.94
BM2	3.75	0.19	13.03	0.06	16.78	13.70	0.95
BM3	3.35	0.09	18.83	0.08	22.18	13.70	1.37
BM4	2.32	0.09	10.15	0.07	12.46	11.60	0.87
BM4FD	2.19	0.12	9.22	0.07	11.41	8.00	1.15
BM5	2.95	0.10	14.32	0.08	17.26	6.90	2.08
BM6	2.71	0.12	15.02	0.08	17.74	6.10	2.46
BM7	2.81	0.16	10.18	0.06	12.99	8.50	1.20
PC-1	2.52	0.13	13.44	0.09	15.96	9.10	1.48
PC-2	1.77	0.10	9.66	0.08	11.43	19.00	0.51
PC-3	2.54	0.13	8.90	0.08	11.43	17.60	0.51
PC-5	2.79	0.28	9.70	0.06	12.49	16.50	0.59
PC-6	3.17	0.18	10.20	0.08	13.37	15.00	0.68
PC-7	2.49	0.18	11.35	0.08	13.84	15.50	0.73
BT1	5.02	0.11	21.33	0.10	26.35	18.80	1.13
BT2	2.46	0.11	7.50	0.06	9.97	13.50	0.56
BT3	8.87	0.24	3.05	0.51	11.92	8.60	0.35
BT4	1.06	0.06	6.57	0.07	7.63	14.30	0.46
BT5	1.24	0.07	6.40	0.07	7.64	13.00	0.49
BT5A	2.11	0.10	8.71	0.07	10.82	14.10	0.62
BT6	1.51	0.09	5.46	0.06	6.97	12.10	0.45
BT6FD	1.47	0.10	5.59	0.07	7.06	11.40	0.49
BT7	1.86	0.09	7.38	0.09	9.25	11.20	0.66
BT8	2.19	0.13	6.78	0.07	8.97	12.20	0.56
BT9	1.97	0.10	8.45	0.07	10.42	14.30	0.59

Table J.1. Summary of GSBOD data.

Sample No.	NBODu (mg/L)	NBODu rate (1/day)	CBODu (mg/L)	CBODu rate (1/day)	TBODu (mg/L)	TOC (mg/L)	CBODu / TOC
BT10	2.69	0.12	6.83	0.05	9.52	14.60	0.47
BT11	2.61	0.14	6.00	0.08	8.61	11.50	0.52
BT12	3.04	0.17	6.46	0.08	9.50	10.40	0.62
ICWW1	2.73	0.10	6.15	0.09	8.89	8.70	0.71
ICWW1FD	2.36	0.12	5.83	0.08	8.19	8.20	0.71
BC1	1.63	0.09	6.92	0.06	8.55	13.60	0.51
PAC06A	2.63	0.11	12.61	0.10	15.24	9.80	1.29
PAC07	5.33	0.29	15.53	0.08	20.85	14.60	1.06
PAC09	2.64	0.13	9.55	0.09	12.19	16.20	0.59
PAC10	2.05	0.14	7.71	0.07	9.75	16.70	0.46
PAC11	3.81	0.13	17.75	0.11	21.55	14.30	1.24
PAC12	3.23	0.09	14.48	0.08	17.71	19.00	0.76
PAC13	2.64	0.09	11.77	0.07	14.42	4.40	2.68
PAC13FD	2.69	0.09	12.19	0.07	14.88	22.20	0.55
UC1	2.66	0.21	8.22	0.10	10.88	8.90	0.92
SLC02	2.68	0.09	14.60	0.07	17.27	21.10	0.69
BDL1	3.38	0.05	24.93	0.07	28.31	20.60	1.21
BDL2	8.88	0.06	42.19	0.08	51.06	30.90	1.37
BDL3	2.42	0.08	15.07	0.06	17.49	21.80	0.69
BDL3FD	2.45	0.11	15.67	0.06	18.12	20.70	0.76
BDL4	3.94	0.17	19.37	0.07	23.31	20.50	0.95
BDL5	3.52	0.17	17.32	0.07	20.84	17.70	0.98
BDL6	3.39	0.15	19.21	0.07	22.60	19.50	0.99
BDL7	1.64	0.09	10.84	0.05	12.48	17.30	0.63
OBDL1	11.51	0.25	22.80	0.10	34.31	15.00	1.52
TPS1	3.00	0.11	16.12	0.07	19.12	19.60	0.82
MC1	1.91	0.17	11.65	0.05	13.56	18.60	0.63
GRB1	3.42	0.12	10.91	0.09	14.34	9.40	1.16
GRB2	2.26	0.10	10.34	0.08	12.60	10.80	0.96
GRB3	2.28	0.09	8.94	0.07	11.22	10.80	0.83
GRB4	2.44	0.09	10.63	0.08	13.07	10.60	1.00
GRB5	1.02	0.07	5.80	0.06	6.83	9.80	0.59
LGBY1	1.27	0.08	7.05	0.07	8.31	10.10	0.70
GRB6	1.11	0.08	6.48	0.05	7.58	10.30	0.63
EGB1	1.11	0.07	6.69	0.07	7.80	9.60	0.70
GRB7	0.84	0.08	5.99	0.06	6.82	9.10	0.66
GRB8	0.77	0.07	5.93	0.06	6.70	9.20	0.64
GRB9	1.05	0.07	6.81	0.06	7.86	9.20	0.74
BCUT01	2.43	0.07	8.54	0.06	10.96	8.30	1.03
BCUT02	2.75	0.09	9.13	0.08	11.88	8.60	1.06
BCUT03	2.96	0.09	8.99	0.06	11.95	8.00	1.12
BCUT04	1.87	0.10	9.11	0.05	10.98	12.60	0.72
BFOL03	1.74	0.10	7.60	0.05	9.34	10.60	0.72
BFOL02	2.53	0.10	11.17	0.07	13.70	11.70	0.95

Table J.1. Summary of GSBOD data.

Sample No.	NBODu (mg/L)	NBODu rate (1/day)	CBODu (mg/L)	CBODu rate (1/day)	TBODu (mg/L)	TOC (mg/L)	CBODu / TOC
BFOL01	1.76	0.12	9.84	0.07	11.60	12.70	0.78
CC01	3.03	0.09	16.11	0.09	19.13	13.00	1.24
CC02	4.13	0.09	18.99	0.10	23.11	12.50	1.52
CC03	4.15	0.11	18.88	0.10	23.03	12.10	1.56
PC1	2.52	0.13	13.44	0.09	15.96	13.3	1.01
PC2	1.77	0.10	9.66	0.08	11.43	14.6	0.66
PC3	2.54	0.13	8.90	0.08	11.43	16.4	0.54
PC4	3.99	0.14	10.65	0.08	14.63	17.5	0.61
PC4FD	4.35	0.15	11.51	0.08	15.86	16.3	0.71
PC5	2.79	0.28	9.70	0.06	12.49	17.2	0.56
PC6	3.17	0.18	10.20	0.08	13.37	19	0.54
COUNT	144	144	144	144	144	144	143
Min	0.77	0.05	3.05	0.01	6.70	0.00	0.35
Mean	2.97	0.13	11.96	0.08	14.93	14.08	0.88
Median	2.66	0.10	10.69	0.07	13.47	13.15	0.78
Max	11.51	0.51	42.19	0.51	51.06	32.60	3.08
StDev	1.51	0.07	5.43	0.04	6.36	5.10	0.40

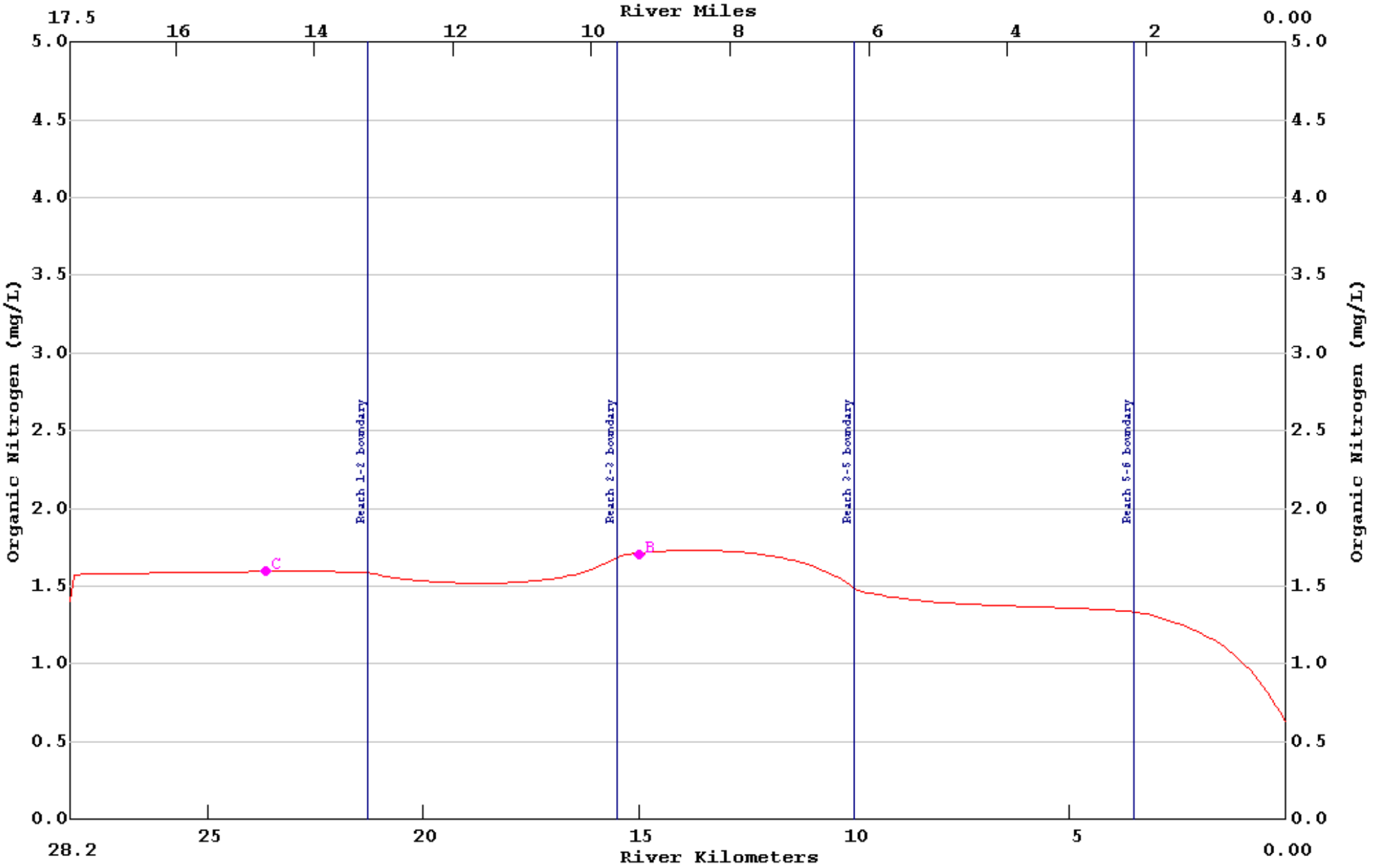
FILE: R:\WP_FILES\2110-616\LOST LAKE AND 4 LEAGUE BAY\WORD FILES\APPENDICES\APPENDIX J\LDEQ_BOD_TOC

Table J.1. Summary of GSBOD data.

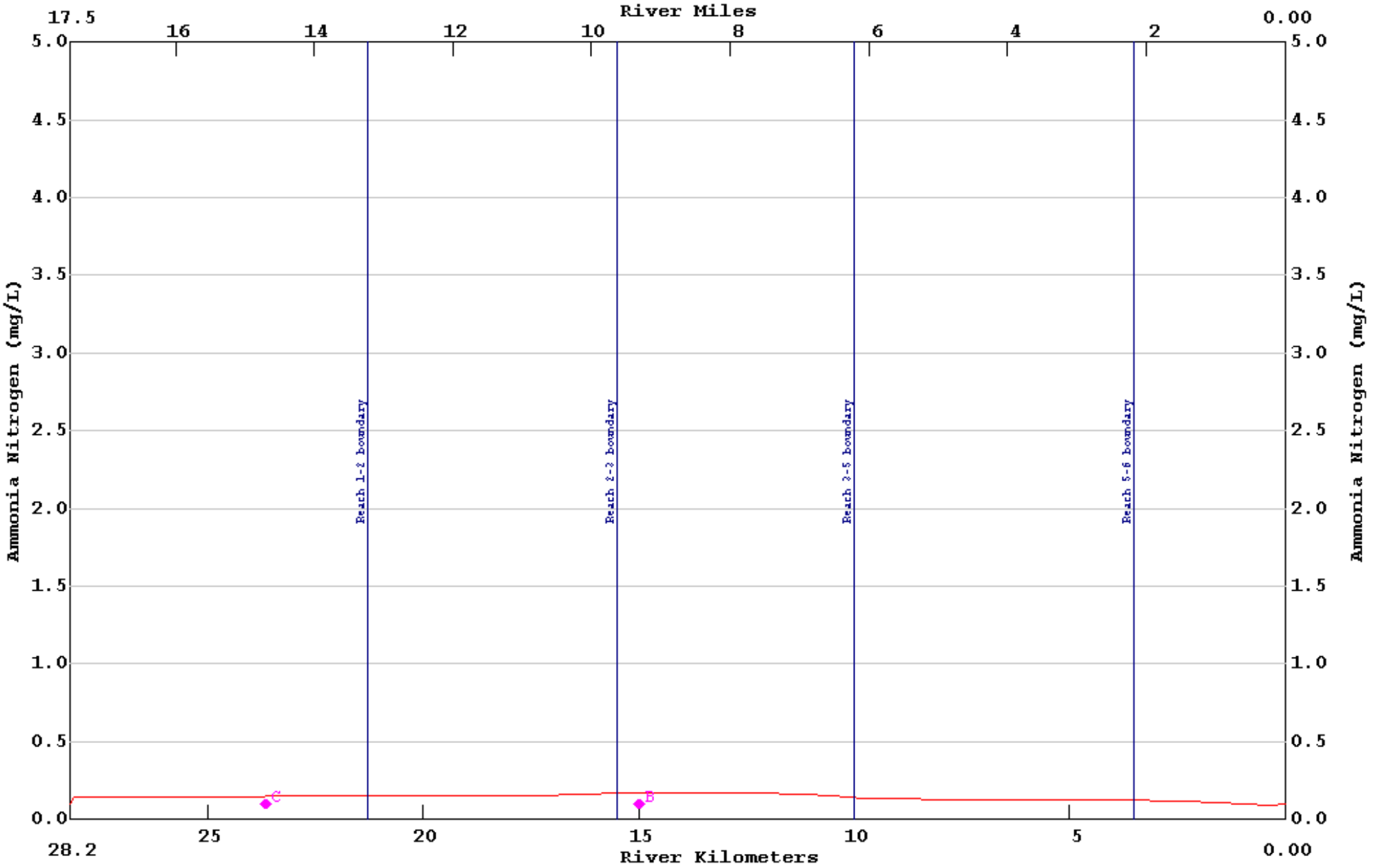
APPENDIX K

Model Output for Calibration

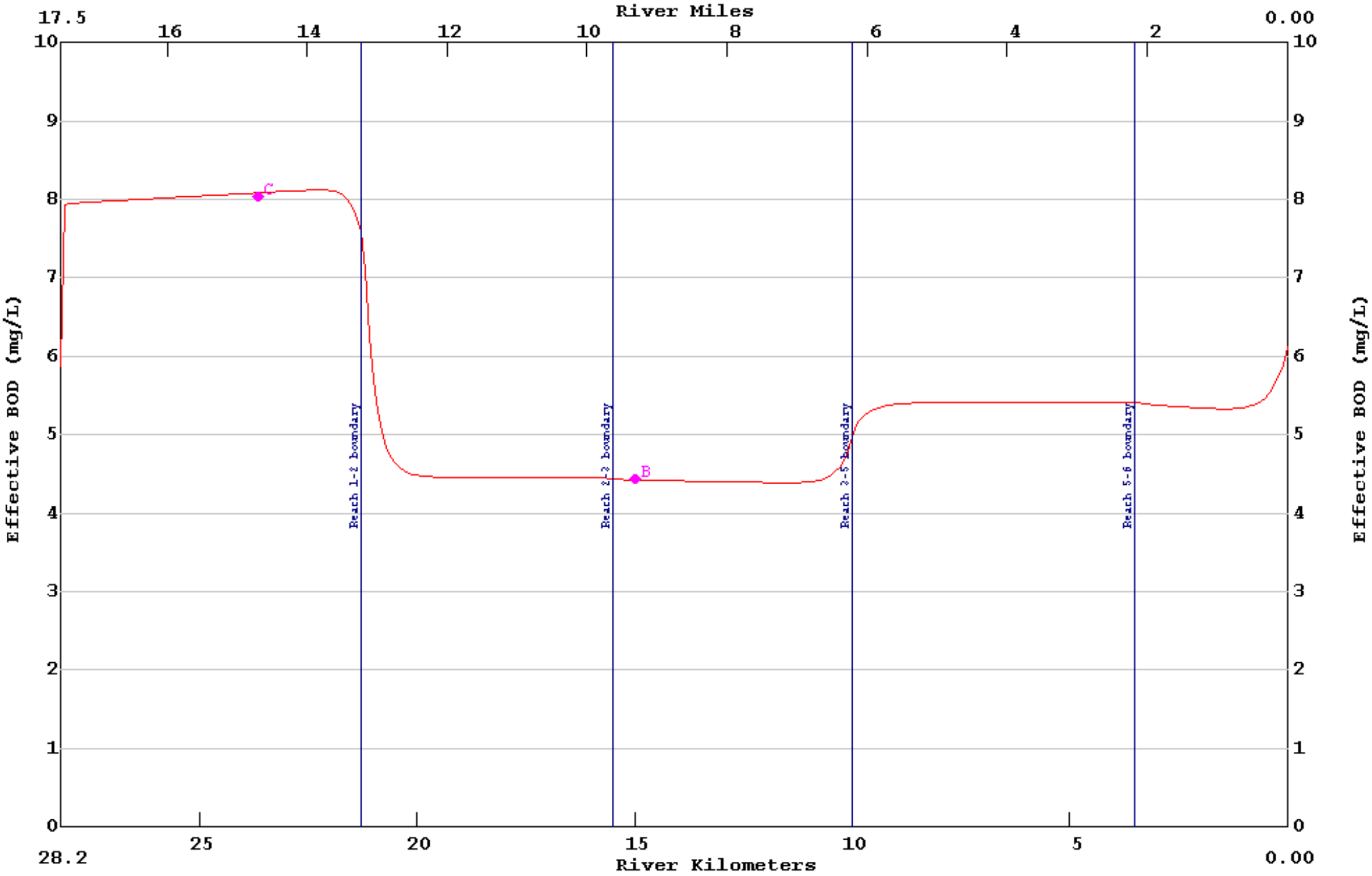
LA-QUAL Version 8.11 Run at 18:58 on 10/17/2007 File D:\comp_models\LA-QUAL_8p11\Lost and Four-Eff-1alg.txt
Calibration to FTN field survey (July 2006) min= 0.63 max= 1.73
Lost Lake to Gulf of Mexcio



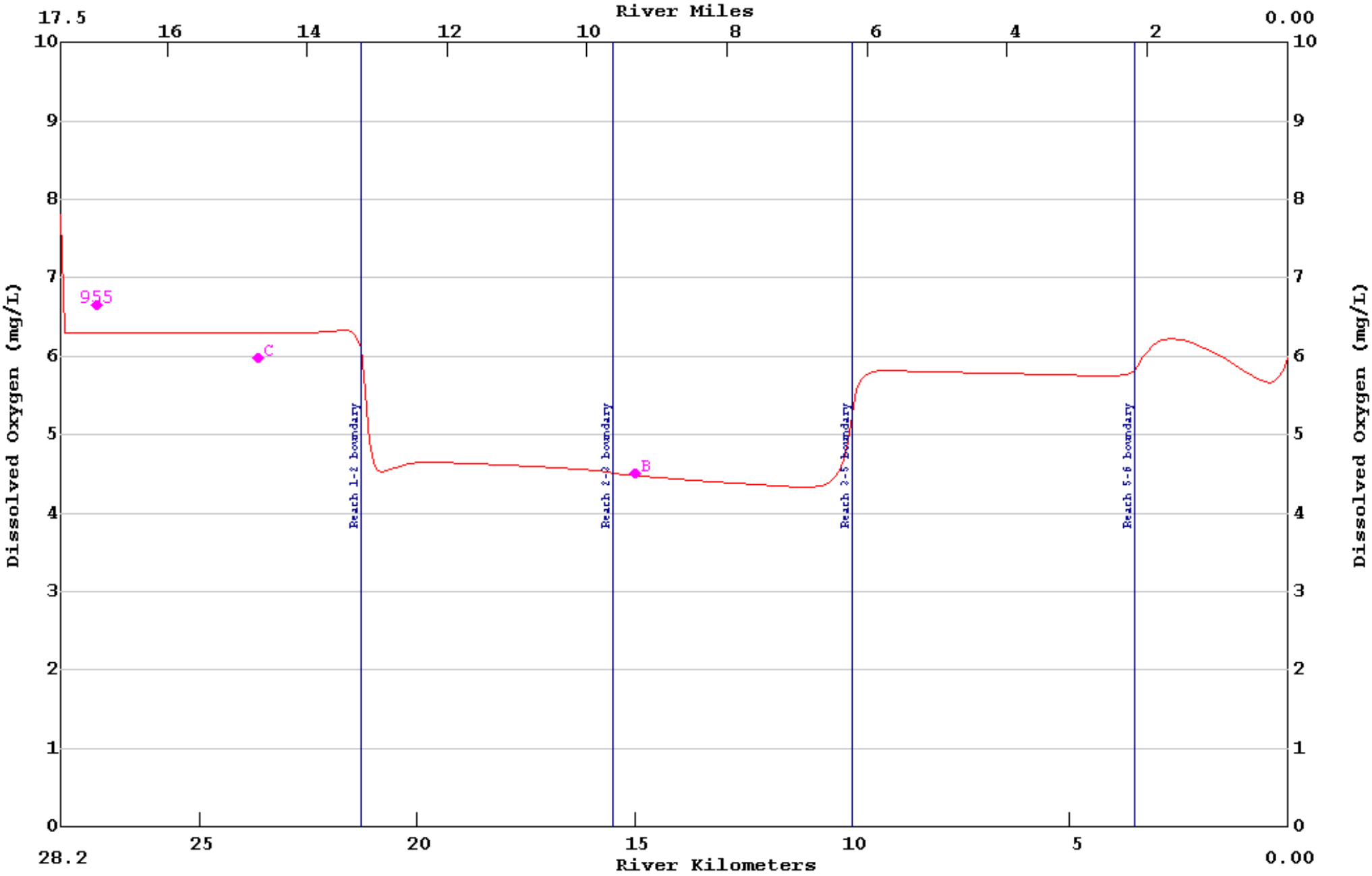
LA-QUAL Version 8.11 Run at 18:58 on 10/17/2007 File D:\comp_models\LA-QUAL_8p11\Lost and Four-Eff-1alg.txt
Calibration to FTN field survey (July 2006) min= 0.09 max= 0.17
Lost Lake to Gulf of Mexcio



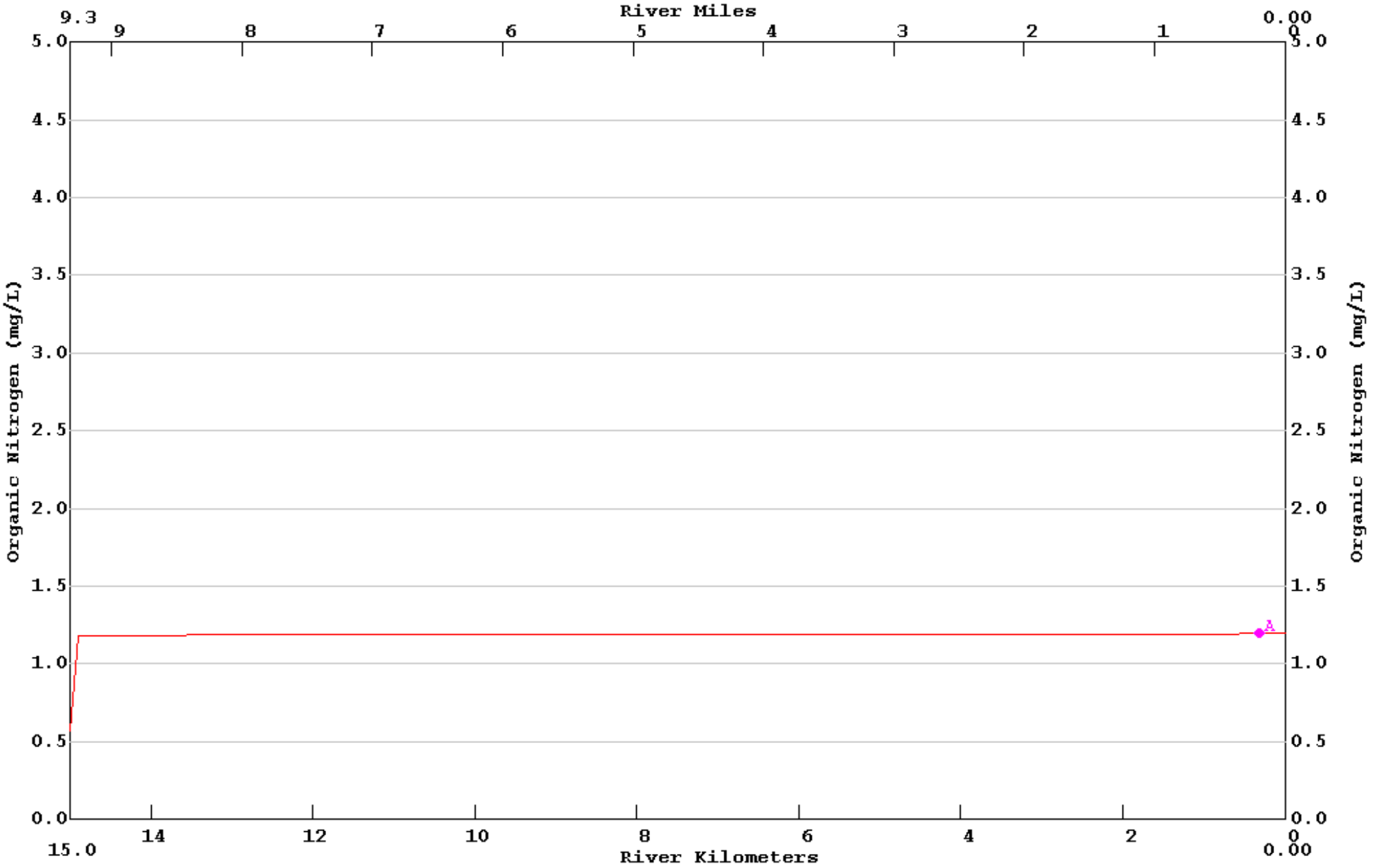
LA-QUAL Version 8.11 Run at 18:58 on 10/17/2007 File D:\comp_models\LA-QUAL_8p11\Lost and Four-Eff-1alg.txt
Calibration to FTN field survey (July 2006) min= 4.39 max= 8.12
Lost Lake to Gulf of Mexcio



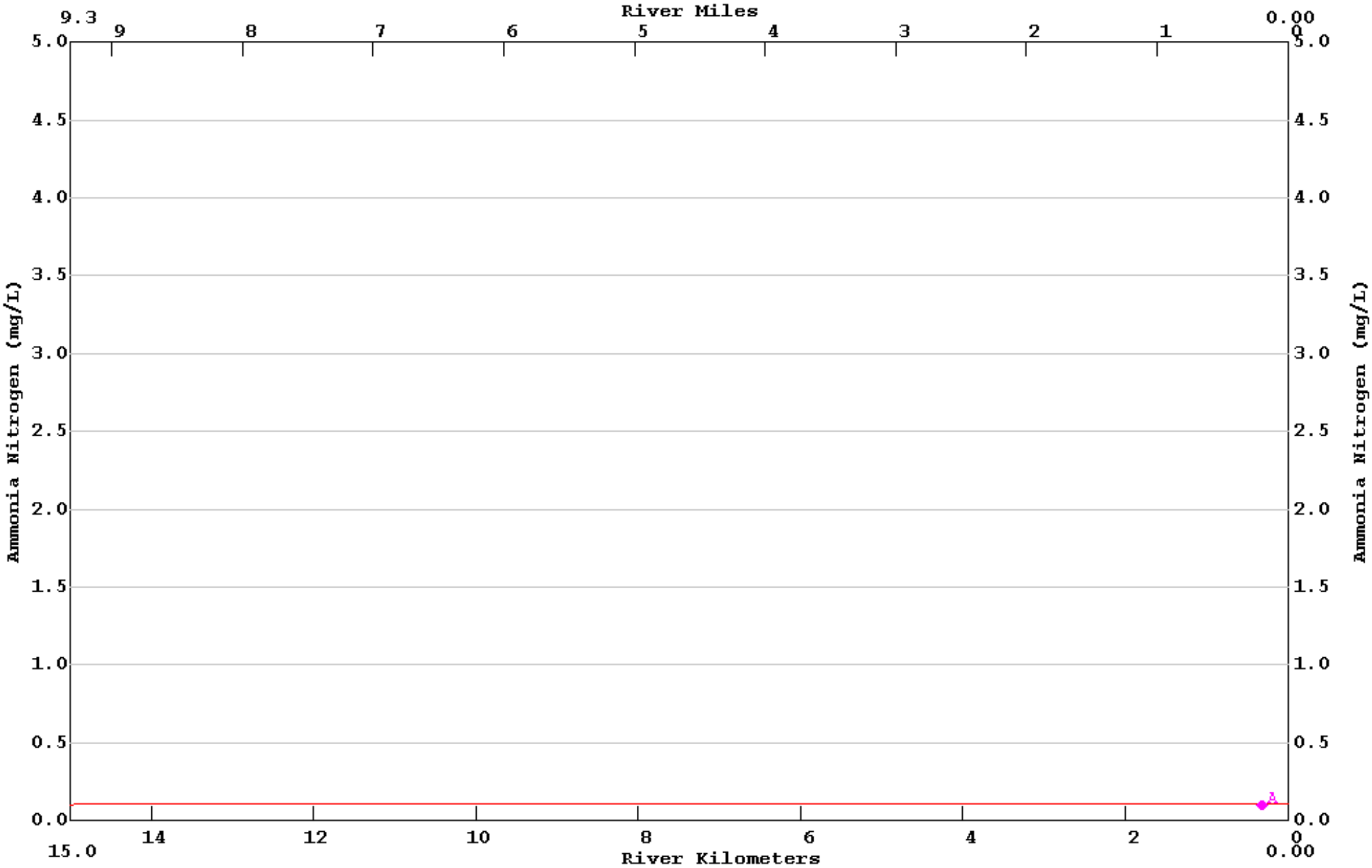
LA-QUAL Version 8.11 Run at 18:58 on 10/17/2007 File D:\comp_models\LA-QUAL_8p11\Lost and Four-Eff-1alg.txt
Calibration to FTN field survey (July 2006) min= 4.33 max= 7.80
Lost Lake to Gulf of Mexcio



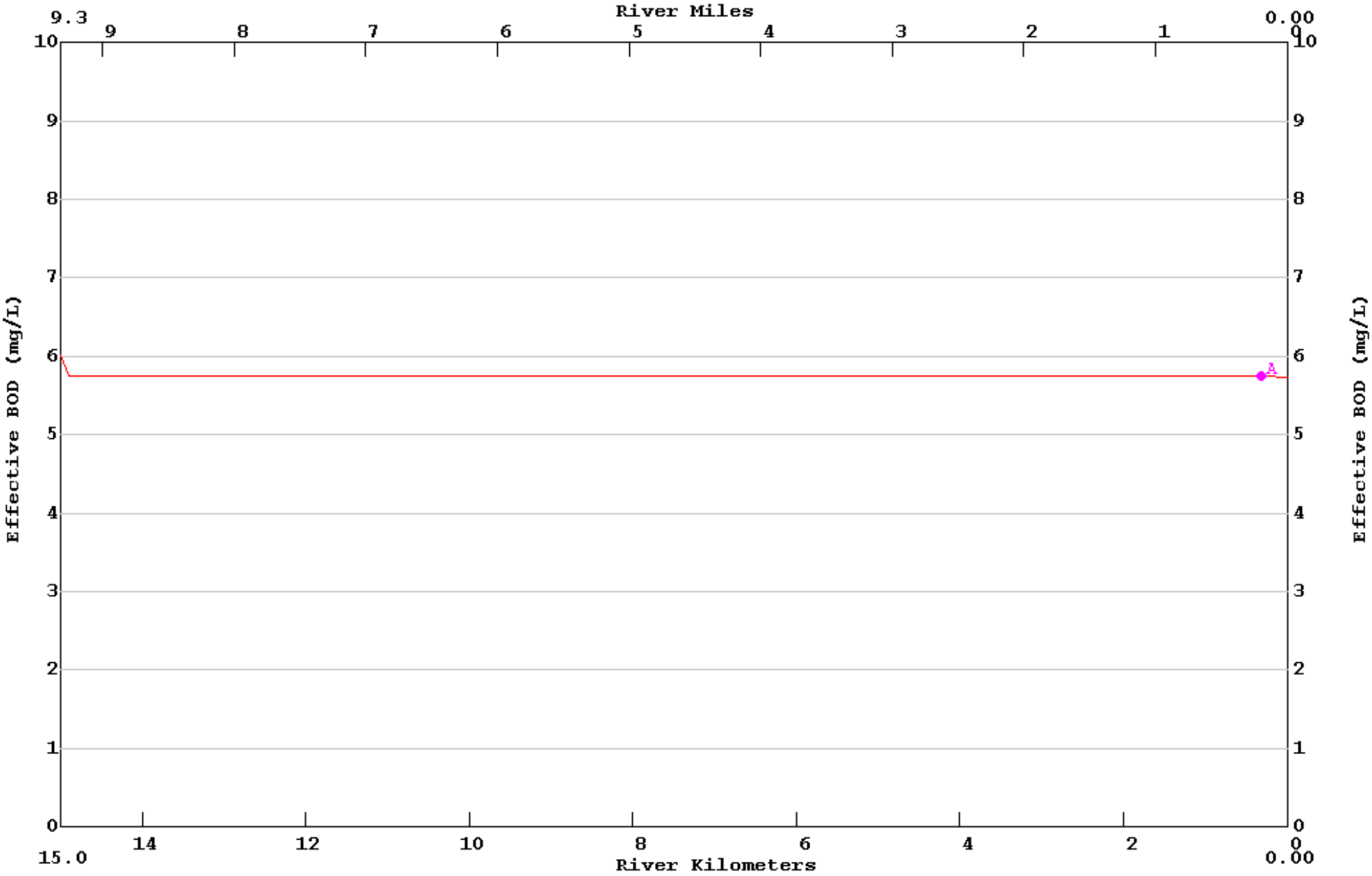
LA-QUAL Version 8.11 Run at 18:58 on 10/17/2007 File D:\comp_models\LA-QUAL_8p11\Lost and Four-Eff-1alg.txt
Calibration to FTN field survey (July 2006) min= 0.57 max= 1.20
Four League Bay to Blue Hammock Bayou



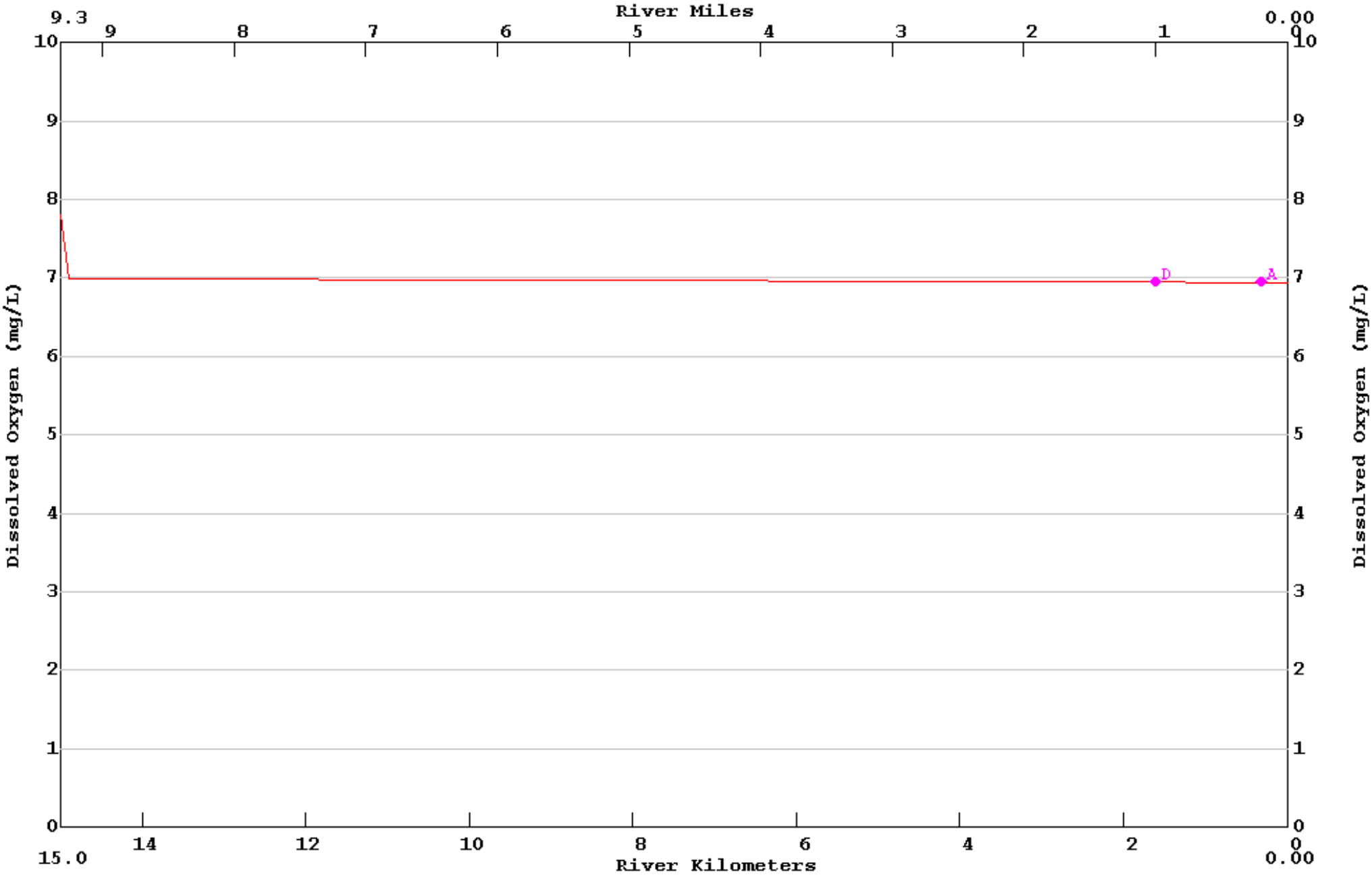
LA-QUAL Version 8.11 Run at 18:58 on 10/17/2007 File D:\comp_models\LA-QUAL_8p11\Lost and Four-Eff-1alg.txt
Calibration to FTN field survey (July 2006) min= 0.10 max= 0.11
Four League Bay to Blue Hammock Bayou



LA-QUAL Version 8.11 Run at 18:58 on 10/17/2007 File D:\comp_models\LA-QUAL_8p11\Lost and Four-Eff-1alg.txt
Calibration to FTN field survey (July 2006) min= 5.74 max= 6.01
Four League Bay to Blue Hammock Bayou



LA-QUAL Version 8.11 Run at 18:58 on 10/17/2007 File D:\comp_models\LA-QUAL_8p11\Lost and Four-Eff-1alg.txt
Calibration to FTN field survey (July 2006) min= 6.94 max= 7.80
Four League Bay to Blue Hammock Bayou



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LA-QUAL Version 8.11
Louisiana Department of Environmental Quality

Input file is D:\comp_models\LA-QUAL_8p11\Lost and Four-Eff-1alg.txt
Output produced at 18:58 on 10/17/2007

$$$ DATA TYPE 1 (TITLES AND CONTROL CARDS) $$$

CARD TYPE       CONTROL TITLES

TITLE01         LA-QUAL model for Lost Lake and Four League Bay (120708)
TITLE02         Calibration to FTN field survey (July 2006)
CNTROL03   NO   SEQU                        <Warning: legacy control - line ignored>
CNTROL04  YES   METR
CNTROL05  YES   OXYG                        <Warning: legacy control - line ignored>
ENDATA01

$$$ DATA TYPE 2 (MODEL OPTIONS) $$$

CARD TYPE       MODEL OPTION

MODOPT01   NO   TEMP
MODOPT02  YES   SALI
MODOPT03  YES   CONSERVATIVE MATERIAL  I = Specific Conductivity      IN umhos/cm Sp Cond
MODOPT04   NO   CONSERVATIVE MATERIAL II
MODOPT05  YES   DISS
MODOPT06  YES   BIOC
MODOPT07  YES   NITR
MODOPT08   NO   PHOS
MODOPT09   NO   CHLO
MODOPT10   NO   MACR
MODOPT11   NO   COLI
MODOPT12   NO   NONC
ENDATA02

$$$ DATA TYPE 3 (PROGRAM CONSTANTS) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                       VALUE

PROGRAM         HYDRAULIC CALCULATION METHOD       =        2.00000 (widths and depths)
PROGRAM         MAXIMUM ITERATION LIMIT            =      500.00000
PROGRAM         ALGAE OXYGEN PROD                  =        0.02600 mg O/ug chl a/day
PROGRAM         EFFECTIVE BOD DUE TO ALGAE         =        0.05000 mg/L BOD per ug/L chl a
PROGRAM         HEADWATER EXCHANGE RATIO           =        1.00000
ENDATA03

$$$ DATA TYPE 4 (TEMPERATURE CORRECTION CONSTANTS FOR RATE COEFFICIENTS) $$$

 CARD TYPE     RATE CODE     THETA VALUE

THETA        NH3 DECA       1.07000
```

ENDATA04

$$$ CONSTANTS TYPE 5 (TEMPERATURE DATA) $$$

CARD TYPE DESCRIPTION OF CONSTANT VALUE

ENDATA05

$$$ DATA TYPE 6 (ALGAE CONSTANTS) $$$

CARD TYPE DESCRIPTION OF CONSTANT VALUE

ENDATA06

$$$ DATA TYPE 7 (MACROPHYTE CONSTANTS) $$$

CARD TYPE DESCRIPTION OF CONSTANT VALUE

ENDATA07

$$$ DATA TYPE 8 (REACH IDENTIFICATION DATA) $$$

CARD TYPE	REACH ID	NAME	BEGIN REACH km		END REACH km	ELEM LENGTH km	REACH LENGTH km	ELEMS PER RCH	BEGIN ELEM NUM	END ELEM NUM
REACH ID	1 LL	Lost Lake	28.20	TO	21.30	0.1000	6.90	69	1	69
REACH ID	2 LL	Lost Lake Pass	21.30	TO	15.50	0.1000	5.80	58	70	127
REACH ID	3 BH	Blue Hammock Bayou	15.50	TO	10.00	0.1000	5.50	55	128	182
REACH ID	4 FL	Four League Bay (North)	15.00	TO	0.00	0.1000	15.00	150	183	332
REACH ID	5 FL	Four League Bay (South)	10.00	TO	3.50	0.1000	6.50	65	333	397
REACH ID	6 OB	Oyster Bayou	3.50	TO	0.00	0.1000	3.50	35	398	432

ENDATA08

$$$ DATA TYPE 9 (ADVECTIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE	REACH ID	WIDTH "A"	WIDTH "B"	WIDTH "C"	DEPTH "D"	DEPTH "E"	DEPTH "F"	SLOPE	MANNINGS "N"
HYDR-1	1 LL	0.000	0.000	2556.160	0.000	0.000	0.850	0.00000	0.000
HYDR-1	2 LL	0.000	0.000	547.790	0.000	0.000	0.760	0.00000	0.000
HYDR-1	3 BH	0.000	0.000	546.580	0.000	0.000	2.260	0.00000	0.000
HYDR-1	4 FL	0.000	0.000	4298.260	0.000	0.000	1.240	0.00000	0.000
HYDR-1	5 FL	0.000	0.000	2974.870	0.000	0.000	0.750	0.00000	0.000
HYDR-1	6 OB	0.000	0.000	209.310	0.000	0.000	4.000	0.00000	0.000

ENDATA09

$$$ DATA TYPE 10 (DISPERSIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE	REACH ID	TIDAL RANGE	DISPERSION "A"	DISPERSION "B"	DISPERSION "C"	DISPERSION "D"

```
HYDR          1   LL      0.00        0.300         0.000          0.000         0.000
HYDR          2   LL      0.00        0.400         0.000          0.000         0.000
HYDR          3   BH      0.00        0.500         0.000          0.000         0.000
HYDR          4   FL      0.00        0.450         0.000          0.000         0.000
HYDR          5   FL      0.00        0.650         0.000          0.000         0.000
HYDR          6   OB      0.00        0.650         0.000          0.000         0.000
ENDATA10

$$$ DATA TYPE 11 (INITIAL CONDITIONS) $$$

CARD TYPE      REACH  ID       TEMP     SALIN       DO       NH3     NO3+2      PHOS     CHL A     MACRO

INITIAL           1   LL      32.00      0.00     6.15      0.10      0.00      0.00     58.00      0.00
INITIAL           2   LL      31.10      0.00     5.80      0.10      0.00      0.00     58.00      0.00
INITIAL           3   BH      31.00      0.00     5.20      0.10      0.00      0.00     58.00      0.00
INITIAL           4   FL      31.80      0.00     6.16      0.10      0.00      0.00     58.00      0.00
INITIAL           5   FL      31.80      0.00     6.16      0.10      0.00      0.00     58.00      0.00
INITIAL           6   OB      31.70      0.00     6.16      0.10      0.00      0.00     58.00      0.00
ENDATA11

$$$ DATA TYPE 12 (REAERATION, SEDIMENT OXYGEN DEMAND, BOD COEFFICIENTS) $$$
                                                                                    BOD     ANAER                          BOD2    ANAER
CARD     RCH  RCH  K2                    K2        K2        K2    BKGRND      BOD       BOD  CONV     BOD2      BOD2     BOD2  CONV    BOD2
TYPE     NUM   ID  OPT                  "A"       "B"       "C"       SOD    DECAY      SETT TO SOD    DECAY     DECAY     SETT TO SOD   DECAY
                                                                    g/m²/d  per day       m/d          per day   per day     m/d          per day

COEFF-1    1   LL  20 K2=a/D          0.890     0.000     0.000     0.250    0.320     0.000  0.000    0.000     0.000     0.000  0.000   0.000
COEFF-1    2   LL  20 K2=a/D          0.890     0.000     0.000     1.900    0.320     0.000  0.000    0.000     0.000     0.000  0.000   0.000
COEFF-1    3   BH  20 K2=a/D          0.890     0.000     0.000     3.050    0.320     0.000  0.000    0.000     0.000     0.000  0.000   0.000
COEFF-1    4   FL  20 K2=a/D          0.890     0.000     0.000     0.530    0.320     0.000  0.000    0.000     0.000     0.000  0.000   0.000
COEFF-1    5   FL  20 K2=a/D          0.890     0.000     0.000     0.900    0.320     0.000  0.000    0.000     0.000     0.000  0.000   0.000
COEFF-1    6   OB  20 K2=a/D          0.890     0.000     0.000     2.100    0.320     0.000  0.000    0.000     0.000     0.000  0.000   0.000
ENDATA12

$$$ DATA TYPE 13 (NITROGEN AND PHOSPHORUS COEFFICIENTS) $$$

CARD TYPE      REACH  ID       ORG-N     ORG-N   ORGN CONV       NH3       NH3      PHOS     DENIT
                                DECA      SETT  TO NH3 SRCE      DECA      SRCE      SRCE      RATE

COEFF-2           1   LL      0.020     0.000       1.000     0.130     0.000     0.000     0.000
COEFF-2           2   LL      0.020     0.000       1.000     0.130     0.000     0.000     0.000
COEFF-2           3   BH      0.020     0.000       1.000     0.130     0.000     0.000     0.000
COEFF-2           4   FL      0.020     0.000       1.000     0.130     0.000     0.000     0.000
COEFF-2           5   FL      0.020     0.000       1.000     0.130     0.000     0.000     0.000
COEFF-2           6   OB      0.020     0.000       1.000     0.130     0.000     0.000     0.000
ENDATA13

$$$ DATA TYPE 14 (ALGAE AND MACROPHYTE COEFFICIENTS) $$$

CARD TYPE      REACH  ID       SECCHI    ALGAE:     ALGAE    ALG CONV     ALGAE     ALGAE     MACRO     MACRO
                               DEPTH     CHL A      SETT     TO SOD      GROW      RESP      GROW      RESP   SHADING
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ENDATA14

$$$ DATA TYPE 15 (COLIFORM AND NONCONSERVATIVE COEFFICIENTS) $$$

CARD TYPE	REACH	ID	COLIFORM DIE-OFF	NCM DECAY	NCM SETT	NCM CONV TO SOD

ENDATA15

$$$ DATA TYPE 16 (INCREMENTAL DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE	REACH	ID	OUTFLOW	INFLOW	TEMP	SALIN	CM-I	CM-II	IN/DIST	OUT/DIST

ENDATA16

$$$ DATA TYPE 17 (INCREMENTAL DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE	REACH	ID	DO	BOD	ORG-N	NH3-N	NO3-N	BOD#2

ENDATA17

$$$ DATA TYPE 18 (INCREMENTAL DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE	REACH	ID	PHOS	CHL A	COLI	NCM

ENDATA18

$$$ DATA TYPE 19 (NONPOINT SOURCE DATA) $$$

CARD TYPE	REACH	ID	BOD#1	ORG-N	COLI	NCM	DO	BOD#2
NONPOINT	1	LL	42000.00	600.00	0.00	0.00	0.00	0.00
NONPOINT	2	LL	2000.00	90.00	0.00	0.00	0.00	0.00
NONPOINT	3	BH	5500.00	300.00	0.00	0.00	0.00	0.00
NONPOINT	4	FL	125000.00	2400.00	0.00	0.00	0.00	0.00
NONPOINT	5	FL	20000.00	500.00	0.00	0.00	0.00	0.00
NONPOINT	6	OB	4000.00	100.00	0.00	0.00	0.00	0.00

ENDATA19

$$$ DATA TYPE 20 (HEADWATER FOR FLOW, TEMPERATURE, SALINITY AND CONSERVATIVES) $$$

CARD TYPE	ELEMENT	NAME	UNIT	FLOW m^3/s	FLOW cfs	TEMP deg C	SALIN ppt	CM-I umhos/cm	CM-II	
HDWTR-1	1	Bayou de Cade	0	0.02800	0.989	32.90	4.78	8320.000	0.000	0.00
HDWTR-1	183	Atchafalaya Bay	0	0.02800	0.989	24.50	1.95	3058.000	0.000	0.00

ENDATA20

$$$ DATA TYPE 21 (HEADWATER DATA FOR DO, BOD, AND NITROGEN) $$$

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CARD TYPE     ELEMENT   NAME                          DO      BOD#1     ORG-N     NH3-N     NO3-N     BOD#2
                                                     mg/L      mg/L      mg/L      mg/L      mg/L      mg/L

HDWTR-2           1     Bayou de Cade               7.80      5.88      1.40      0.10      0.00      0.00
HDWTR-2         183     Atchafalaya Bay             7.80      6.01      0.57      0.10      0.00      0.00
ENDATA21

$$$ DATA TYPE 22 (HEADWATER DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE     ELEMENT   NAME                        PHOS     CHL A      COLI       NCM
                                                     mg/L      mg/L      mg/L      mg/L

ENDATA22

$$$ DATA TYPE 23 (JUNCTION DATA) $$$

CARD TYPE   JUNCTION   UPSTRM     RIVER     NAME
             ELEMENT  ELEMENT     KILOM

JUNCTION         333     182      10.00     Four League Bay
ENDATA23

$$$ DATA TYPE 24 (WASTELOAD DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE  ELEMENT    RKILO  NAME                   FLOW       FLOW     FLOW    TEMP    SALIN      CM-I     CM-II
                                                    m³/s        cfs      MGD   deg C      ppt  umhos/cm

ENDATA24

$$$ DATA TYPE 25 (WASTELOAD DATA FOR DO, BOD, AND NITROGEN) $$$
                                                                  % BOD                          %
CARD TYPE     ELEMENT   NAME                          DO       BOD       RMVL     ORG-N     NH3-N    NITRIF     NO3-N     BOD#2
                                                     mg/L      mg/L                mg/L      mg/L                 mg/L      mg/L

ENDATA25

$$$ DATA TYPE 26 (WASTELOAD DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE     ELEMENT   NAME                        PHOS     CHL A      COLI       NCM
                                                     mg/L      mg/L      mg/L      mg/L

ENDATA26

$$$ DATA TYPE 27 (LOWER BOUNDARY CONDITIONS) $$$

CARD TYPE    CONSTITUENT                   CONCENTRATION

LOWER BC     TEMPERATURE                      =     30.175     deg C
LOWER BC     SALINITY                         =     21.350     ppt
LOWER BC     CONSERVATIVE MATERIAL I          =  33905.000     umhos/cm
LOWER BC     DISSLOVED OXYGEN                 =      6.105     mg/L
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LOWER BC     BIOCHEMICAL OXYGEN DEMAND          =      6.270     mg/L
LOWER BC     ORGANIC NITROGEN                   =      0.600     mg/L
LOWER BC     AMMONIA NITROGEN                   =      0.100     mg/L
LOWER BC     NITRATE NITROGEN                   =      0.000     mg/L
LOWER BC     CHLOROPHYLL A                      =     52.000     µg/L
ENDATA27

$$$ DATA TYPE 28 (DAM DATA) $$$

CARD TYPE     ELEMENT   NAME                 EQN      "A"       "B"       "H"

ENDATA28

$$$ DATA TYPE 29 (SENSITIVITY ANALYSIS DATA) $$$

CARD TYPE       PARAMETER     COL 1     COL 2     COL 3     COL 4     COL 5     COL 6     COL 7     COL 8

ENDATA29

$$$ DATA TYPE 30 (PLOT CONTROL CARDS) $$$


NUMBER OF PLOTS =  2
NUMBER OF REACHES IN PLOT 1 =   5
PLOT RCH  1  2  3  5  6
NUMBER OF REACHES IN PLOT 2 =   1
PLOT RCH  4
ENDATA30

$$$ DATA TYPE 31 (OVERLAY PLOT DATA) $$$


OVERLAY 1 ll-eff.ovl                     :Lost Lake to Gulf of Mexcio
OVERLAY 2 flb-eff.ovl                    :Four League Bay to Blue Hammock Bayou
ENDATA31



     .....NO ERRORS DETECTED IN INPUT DATA
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN   5 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
 ***** WARNING:  NEGATIVE CONCENTRATIONS SET TO ZERO FOR Nitrate+Nitrite Nitrogen
     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11
     .....GRAPHICS DATA FOR PLOT 2 WRITTEN TO UNIT 12


FINAL REPORT    Bayou de Cade                                LA-QUAL model for Lost Lake and Four League Bay (120708)
REACH NO.  1     Lost Lake                                   Calibration to FTN field survey (July 2006)
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********** REACH INPUTS **********

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	Sp Cond umhos/cm	CM-II	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
1	HDWTR	0.02800	32.90	4.78	8320.00	0.00	7.80	2.98	0.00	5.88	0.00	1.40	0.10	0.00	0.00	58.00	0.00	0.00

********** HYDRAULIC PARAMETER VALUES **********

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
1	28.20	28.10	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
2	28.10	28.00	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
3	28.00	27.90	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
4	27.90	27.80	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
5	27.80	27.70	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
6	27.70	27.60	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
7	27.60	27.50	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
8	27.50	27.40	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
9	27.40	27.30	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
10	27.30	27.20	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
11	27.20	27.10	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
12	27.10	27.00	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
13	27.00	26.90	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
14	26.90	26.80	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
15	26.80	26.70	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
16	26.70	26.60	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
17	26.60	26.50	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
18	26.50	26.40	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
19	26.40	26.30	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
20	26.30	26.20	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
21	26.20	26.10	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
22	26.10	26.00	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
23	26.00	25.90	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
24	25.90	25.80	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
25	25.80	25.70	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
26	25.70	25.60	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
27	25.60	25.50	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
28	25.50	25.40	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
29	25.40	25.30	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
30	25.30	25.20	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
31	25.20	25.10	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
32	25.10	25.00	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
33	25.00	24.90	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
34	24.90	24.80	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
35	24.80	24.70	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000
36	24.70	24.60	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000

37	24.60	24.50	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
38	24.50	24.40	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
39	24.40	24.30	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
40	24.30	24.20	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
41	24.20	24.10	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
42	24.10	24.00	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
43	24.00	23.90	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
44	23.90	23.80	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
45	23.80	23.70	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
46	23.70	23.60	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
47	23.60	23.50	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
48	23.50	23.40	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
49	23.40	23.30	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
50	23.30	23.20	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
51	23.20	23.10	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
52	23.10	23.00	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
53	23.00	22.90	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
54	22.90	22.80	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
55	22.80	22.70	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
56	22.70	22.60	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
57	22.60	22.50	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
58	22.50	22.40	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
59	22.40	22.30	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
60	22.30	22.20	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
61	22.20	22.10	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
62	22.10	22.00	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
63	22.00	21.90	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
64	21.90	21.80	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
65	21.80	21.70	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
66	21.70	21.60	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
67	21.60	21.50	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
68	21.50	21.40	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
69	21.40	21.30	0.02800	0.0	0.00001	89.81	0.85	2556.16	217273.61	255615.98	2172.74	0.00	0.000	0.300	0.000							
TOT						6197.04			14991888.00	17637502.00												
AVG					0.0000		0.85	2556.16			2172.73											
CUM						6197.04																

********** BIOLOGICAL AND PHYSICAL COEFFICIENTS **********

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
1	28.100	7.05	1.30	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.62	0.00	0.00	0.00	0.00
2	28.000	7.05	1.30	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.61	0.00	0.00	0.00	0.00
3	27.900	7.05	1.30	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.61	0.00	0.00	0.00	0.00
4	27.800	7.05	1.30	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.61	0.00	0.00	0.00	0.00
5	27.700	7.05	1.30	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.61	0.00	0.00	0.00	0.00
6	27.600	7.05	1.30	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.61	0.00	0.00	0.00	0.00

7	27.500	7.05	1.30	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.61	0.00	0.00	0.00	0.00
8	27.400	7.06	1.30	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.60	0.00	0.00	0.00	0.00
9	27.300	7.06	1.30	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.60	0.00	0.00	0.00	0.00
10	27.200	7.06	1.30	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.60	0.00	0.00	0.00	0.00
11	27.100	7.06	1.30	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.60	0.00	0.00	0.00	0.00
12	27.000	7.06	1.30	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.60	0.00	0.00	0.00	0.00
13	26.900	7.06	1.30	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.60	0.00	0.00	0.00	0.00
14	26.800	7.06	1.30	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
15	26.700	7.06	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
16	26.600	7.07	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.53	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
17	26.500	7.07	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
18	26.400	7.07	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
19	26.300	7.07	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
20	26.200	7.07	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
21	26.100	7.07	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.28	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
22	26.000	7.07	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.28	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
23	25.900	7.07	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.28	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
24	25.800	7.08	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.28	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
25	25.700	7.08	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.28	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
26	25.600	7.08	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
27	25.500	7.08	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00
28	25.400	7.08	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00
29	25.300	7.08	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00
30	25.200	7.08	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00
31	25.100	7.08	1.29	0.55	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00
32	25.000	7.08	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00
33	24.900	7.09	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00
34	24.800	7.09	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.56	0.00	0.00	0.00	0.00
35	24.700	7.09	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.56	0.00	0.00	0.00	0.00
36	24.600	7.09	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.56	0.00	0.00	0.00	0.00
37	24.500	7.09	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.56	0.00	0.00	0.00	0.00
38	24.400	7.09	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.56	0.00	0.00	0.00	0.00
39	24.300	7.09	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.56	0.00	0.00	0.00	0.00
40	24.200	7.09	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.52	0.52	0.52	0.03	0.00	0.27	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00
41	24.100	7.10	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00
42	24.000	7.10	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00
43	23.900	7.10	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00
44	23.800	7.10	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00
45	23.700	7.10	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00
46	23.600	7.10	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00
47	23.500	7.10	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00
48	23.400	7.10	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00
49	23.300	7.11	1.29	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00
50	23.200	7.11	1.28	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00
51	23.100	7.11	1.28	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00
52	23.000	7.11	1.28	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00
53	22.900	7.11	1.28	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.53	0.00	0.00	0.00	0.00
54	22.800	7.11	1.28	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.53	0.00	0.00	0.00	0.00
55	22.700	7.11	1.28	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.53	0.00	0.00	0.00	0.00
56	22.600	7.11	1.28	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.03	0.00	0.27	0.00	0.00	0.00	2.53	0.00	0.00	0.00	0.00
57	22.500	7.11	1.28	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.02	0.00	0.27	0.00	0.00	0.00	2.53	0.00	0.00	0.00	0.00

58	22.400	7.12	1.28	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.02	0.00	0.27	0.00	0.00	0.00	2.53	0.00	0.00	0.00	0.00
59	22.300	7.12	1.28	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.02	0.00	0.27	0.00	0.00	0.00	2.53	0.00	0.00	0.00	0.00
60	22.200	7.12	1.28	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.02	0.00	0.27	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00
61	22.100	7.12	1.28	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.02	0.00	0.27	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00
62	22.000	7.12	1.28	0.54	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.02	0.00	0.27	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00
63	21.900	7.12	1.28	0.53	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.02	0.00	0.27	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00
64	21.800	7.12	1.28	0.53	0.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51	0.02	0.00	0.27	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00
65	21.700	7.12	1.28	0.53	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.50	0.02	0.00	0.27	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00
66	21.600	7.12	1.28	0.53	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.50	0.02	0.00	0.27	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00
67	21.500	7.13	1.28	0.53	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.50	0.02	0.00	0.26	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
68	21.400	7.13	1.28	0.53	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.50	0.02	0.00	0.26	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
69	21.300	7.13	1.28	0.53	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.50	0.02	0.00	0.26	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
AVG 20 DEG C RATE			1.05	0.32	0.00	0.00	0.00	0.00	0.00	0.25			0.02	0.00	0.13	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

********** WATER QUALITY CONSTITUENT VALUES **********

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	Sp Cond umhos/cm	CM-II	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
1	28.100	31.99	6.65	11161.13	0.00	6.30	5.04	0.00	7.94	0.00	1.57	0.14	0.00	1.72	0.00	58.00	0.00	0.	0.00
2	28.000	31.97	6.66	11173.33	0.00	6.30	5.04	0.00	7.94	0.00	1.58	0.14	0.00	1.72	0.00	58.00	0.00	0.	0.00
3	27.900	31.96	6.67	11185.59	0.00	6.29	5.05	0.00	7.95	0.00	1.58	0.14	0.00	1.72	0.00	58.00	0.00	0.	0.00
4	27.800	31.95	6.67	11197.90	0.00	6.29	5.05	0.00	7.95	0.00	1.58	0.14	0.00	1.72	0.00	58.00	0.00	0.	0.00
5	27.700	31.93	6.68	11210.26	0.00	6.29	5.06	0.00	7.96	0.00	1.58	0.14	0.00	1.72	0.00	58.00	0.00	0.	0.00
6	27.600	31.92	6.69	11222.68	0.00	6.29	5.06	0.00	7.96	0.00	1.58	0.14	0.00	1.72	0.00	58.00	0.00	0.	0.00
7	27.500	31.91	6.70	11235.15	0.00	6.29	5.07	0.00	7.97	0.00	1.58	0.14	0.00	1.72	0.00	58.00	0.00	0.	0.00
8	27.400	31.90	6.71	11247.67	0.00	6.29	5.07	0.00	7.97	0.00	1.58	0.14	0.00	1.72	0.00	58.00	0.00	0.	0.00
9	27.300	31.88	6.71	11260.25	0.00	6.29	5.07	0.00	7.97	0.00	1.58	0.14	0.00	1.72	0.00	58.00	0.00	0.	0.00
10	27.200	31.87	6.72	11272.88	0.00	6.29	5.08	0.00	7.98	0.00	1.58	0.14	0.00	1.72	0.00	58.00	0.00	0.	0.00
11	27.100	31.86	6.73	11285.56	0.00	6.29	5.08	0.00	7.98	0.00	1.58	0.14	0.00	1.72	0.00	58.00	0.00	0.	0.00
12	27.000	31.84	6.74	11298.30	0.00	6.29	5.08	0.00	7.98	0.00	1.58	0.14	0.00	1.73	0.00	58.00	0.00	0.	0.00
13	26.900	31.83	6.75	11311.09	0.00	6.29	5.08	0.00	7.98	0.00	1.58	0.14	0.00	1.73	0.00	58.00	0.00	0.	0.00
14	26.800	31.82	6.76	11323.94	0.00	6.29	5.09	0.00	7.99	0.00	1.58	0.14	0.00	1.73	0.00	58.00	0.00	0.	0.00
15	26.700	31.80	6.76	11336.85	0.00	6.29	5.09	0.00	7.99	0.00	1.58	0.14	0.00	1.73	0.00	58.00	0.00	0.	0.00
16	26.600	31.79	6.77	11349.80	0.00	6.29	5.09	0.00	7.99	0.00	1.58	0.14	0.00	1.73	0.00	58.00	0.00	0.	0.00
17	26.500	31.78	6.78	11362.82	0.00	6.29	5.10	0.00	8.00	0.00	1.58	0.14	0.00	1.73	0.00	58.00	0.00	0.	0.00
18	26.400	31.77	6.79	11375.89	0.00	6.29	5.10	0.00	8.00	0.00	1.58	0.14	0.00	1.73	0.00	58.00	0.00	0.	0.00
19	26.300	31.75	6.80	11389.02	0.00	6.29	5.10	0.00	8.00	0.00	1.58	0.14	0.00	1.73	0.00	58.00	0.00	0.	0.00
20	26.200	31.74	6.81	11402.20	0.00	6.29	5.11	0.00	8.01	0.00	1.59	0.14	0.00	1.73	0.00	58.00	0.00	0.	0.00
21	26.100	31.73	6.82	11415.44	0.00	6.29	5.11	0.00	8.01	0.00	1.59	0.14	0.00	1.73	0.00	58.00	0.00	0.	0.00
22	26.000	31.71	6.83	11428.74	0.00	6.29	5.11	0.00	8.01	0.00	1.59	0.15	0.00	1.73	0.00	58.00	0.00	0.	0.00
23	25.900	31.70	6.83	11442.09	0.00	6.29	5.12	0.00	8.02	0.00	1.59	0.15	0.00	1.73	0.00	58.00	0.00	0.	0.00
24	25.800	31.69	6.84	11455.50	0.00	6.29	5.12	0.00	8.02	0.00	1.59	0.15	0.00	1.73	0.00	58.00	0.00	0.	0.00
25	25.700	31.67	6.85	11468.97	0.00	6.29	5.12	0.00	8.02	0.00	1.59	0.15	0.00	1.73	0.00	58.00	0.00	0.	0.00
26	25.600	31.66	6.86	11482.50	0.00	6.29	5.12	0.00	8.02	0.00	1.59	0.15	0.00	1.73	0.00	58.00	0.00	0.	0.00
27	25.500	31.65	6.87	11496.08	0.00	6.30	5.13	0.00	8.03	0.00	1.59	0.15	0.00	1.73	0.00	58.00	0.00	0.	0.00
28	25.400	31.63	6.88	11509.73	0.00	6.30	5.13	0.00	8.03	0.00	1.59	0.15	0.00	1.73	0.00	58.00	0.00	0.	0.00

29	25.300	31.62	6.89	11523.43	0.00	6.30	5.13	0.00	8.03	0.00	1.59	0.15	0.00	1.73	0.00	58.00	0.00	0.	0.00
30	25.200	31.61	6.90	11537.19	0.00	6.30	5.14	0.00	8.04	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
31	25.100	31.60	6.91	11551.01	0.00	6.30	5.14	0.00	8.04	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
32	25.000	31.58	6.91	11564.89	0.00	6.30	5.14	0.00	8.04	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
33	24.900	31.57	6.92	11578.83	0.00	6.30	5.15	0.00	8.05	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
34	24.800	31.56	6.93	11592.83	0.00	6.30	5.15	0.00	8.05	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
35	24.700	31.54	6.94	11606.89	0.00	6.30	5.15	0.00	8.05	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
36	24.600	31.53	6.95	11621.01	0.00	6.30	5.16	0.00	8.06	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
37	24.500	31.52	6.96	11635.19	0.00	6.30	5.16	0.00	8.06	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
38	24.400	31.50	6.97	11649.43	0.00	6.30	5.16	0.00	8.06	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
39	24.300	31.49	6.98	11663.73	0.00	6.30	5.16	0.00	8.06	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
40	24.200	31.48	6.99	11678.09	0.00	6.30	5.17	0.00	8.07	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
41	24.100	31.47	7.00	11692.52	0.00	6.30	5.17	0.00	8.07	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
42	24.000	31.45	7.01	11707.00	0.00	6.30	5.17	0.00	8.07	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
43	23.900	31.44	7.02	11721.55	0.00	6.30	5.18	0.00	8.08	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
44	23.800	31.43	7.03	11736.17	0.00	6.30	5.18	0.00	8.08	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
45	23.700	31.41	7.04	11750.84	0.00	6.30	5.18	0.00	8.08	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
46	23.600	31.40	7.05	11765.58	0.00	6.30	5.19	0.00	8.09	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
47	23.500	31.39	7.06	11780.38	0.00	6.30	5.19	0.00	8.09	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
48	23.400	31.37	7.07	11795.24	0.00	6.30	5.19	0.00	8.09	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
49	23.300	31.36	7.08	11810.17	0.00	6.30	5.20	0.00	8.10	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
50	23.200	31.35	7.09	11825.17	0.00	6.30	5.20	0.00	8.10	0.00	1.60	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
51	23.100	31.33	7.10	11840.22	0.00	6.30	5.20	0.00	8.10	0.00	1.60	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
52	23.000	31.32	7.11	11855.34	0.00	6.30	5.20	0.00	8.10	0.00	1.60	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
53	22.900	31.31	7.12	11870.53	0.00	6.30	5.21	0.00	8.11	0.00	1.60	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
54	22.800	31.30	7.13	11885.78	0.00	6.30	5.21	0.00	8.11	0.00	1.60	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
55	22.700	31.28	7.14	11901.10	0.00	6.30	5.21	0.00	8.11	0.00	1.60	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
56	22.600	31.27	7.15	11916.48	0.00	6.30	5.22	0.00	8.12	0.00	1.60	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
57	22.500	31.26	7.16	11931.93	0.00	6.30	5.22	0.00	8.12	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
58	22.400	31.24	7.17	11947.45	0.00	6.30	5.22	0.00	8.12	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
59	22.300	31.23	7.18	11963.03	0.00	6.31	5.22	0.00	8.12	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
60	22.200	31.22	7.19	11978.68	0.00	6.31	5.22	0.00	8.12	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
61	22.100	31.20	7.20	11994.40	0.00	6.31	5.22	0.00	8.12	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
62	22.000	31.19	7.21	12010.18	0.00	6.31	5.21	0.00	8.11	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
63	21.900	31.18	7.22	12026.03	0.00	6.32	5.20	0.00	8.10	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
64	21.800	31.17	7.23	12041.95	0.00	6.33	5.18	0.00	8.08	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
65	21.700	31.15	7.24	12057.94	0.00	6.33	5.15	0.00	8.05	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
66	21.600	31.14	7.25	12074.00	0.00	6.33	5.10	0.00	8.00	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
67	21.500	31.13	7.26	12090.12	0.00	6.32	5.03	0.00	7.93	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
68	21.400	31.11	7.27	12106.32	0.00	6.26	4.90	0.00	7.80	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
69	21.300	31.10	7.28	12122.58	0.00	6.12	4.70	0.00	7.60	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00

FINAL REPORT Bayou de Cade LA-QUAL model for Lost Lake and Four League Bay (120708)
REACH NO. 2 Lost Lake Pass Calibration to FTN field survey (July 2006)

********** REACH INPUTS **********

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	Sp Cond umhos/cm	CM-II	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM

70	UPR RCH	0.02800	31.10	7.28	12122.58	0.00	6.12	4.70	0.00	7.60	0.00	1.59	0.15	0.00	0.00	58.00	0.00	0.00

********** HYDRAULIC PARAMETER VALUES **********

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
70	21.30	21.20	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
71	21.20	21.10	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
72	21.10	21.00	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
73	21.00	20.90	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
74	20.90	20.80	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
75	20.80	20.70	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
76	20.70	20.60	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
77	20.60	20.50	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
78	20.50	20.40	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
79	20.40	20.30	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
80	20.30	20.20	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
81	20.20	20.10	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
82	20.10	20.00	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
83	20.00	19.90	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
84	19.90	19.80	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
85	19.80	19.70	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
86	19.70	19.60	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
87	19.60	19.50	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
88	19.50	19.40	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
89	19.40	19.30	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
90	19.30	19.20	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
91	19.20	19.10	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
92	19.10	19.00	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
93	19.00	18.90	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
94	18.90	18.80	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
95	18.80	18.70	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
96	18.70	18.60	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
97	18.60	18.50	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
98	18.50	18.40	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
99	18.40	18.30	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
100	18.30	18.20	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
101	18.20	18.10	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
102	18.10	18.00	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
103	18.00	17.90	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
104	17.90	17.80	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
105	17.80	17.70	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
106	17.70	17.60	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
107	17.60	17.50	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
108	17.50	17.40	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
109	17.40	17.30	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
110	17.30	17.20	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000

111	17.20	17.10	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
112	17.10	17.00	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
113	17.00	16.90	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
114	16.90	16.80	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
115	16.80	16.70	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
116	16.70	16.60	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
117	16.60	16.50	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
118	16.50	16.40	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
119	16.40	16.30	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
120	16.30	16.20	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
121	16.20	16.10	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
122	16.10	16.00	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
123	16.00	15.90	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
124	15.90	15.80	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
125	15.80	15.70	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
126	15.70	15.60	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
127	15.60	15.50	0.02800	0.0	0.00007	17.21	0.76	547.79	41632.04	54779.00	416.32	0.00	0.000	0.400	0.000
TOT						998.12			2414657.25	3177181.75					
AVG					0.0001		0.76	547.79			416.32				
CUM						7195.16									

********** BIOLOGICAL AND PHYSICAL COEFFICIENTS **********

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
70	21.200	7.13	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.26	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
71	21.100	7.13	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
72	21.000	7.12	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
73	20.900	7.12	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
74	20.800	7.12	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
75	20.700	7.12	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
76	20.600	7.12	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
77	20.500	7.12	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
78	20.400	7.12	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
79	20.300	7.11	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
80	20.200	7.11	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
81	20.100	7.11	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
82	20.000	7.11	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
83	19.900	7.11	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
84	19.800	7.11	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
85	19.700	7.10	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
86	19.600	7.10	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.82	3.82	3.82	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
87	19.500	7.10	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
88	19.400	7.10	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
89	19.300	7.10	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
90	19.200	7.09	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
91	19.100	7.09	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00

92	19.000	7.09	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
93	18.900	7.09	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
94	18.800	7.08	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
95	18.700	7.08	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
96	18.600	7.08	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
97	18.500	7.08	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
98	18.400	7.08	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
99	18.300	7.07	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
100	18.200	7.07	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
101	18.100	7.07	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
102	18.000	7.07	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
103	17.900	7.06	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
104	17.800	7.06	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
105	17.700	7.06	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
106	17.600	7.06	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
107	17.500	7.05	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
108	17.400	7.05	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
109	17.300	7.05	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
110	17.200	7.04	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.81	3.81	3.81	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
111	17.100	7.04	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
112	17.000	7.04	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
113	16.900	7.03	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
114	16.800	7.03	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
115	16.700	7.03	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
116	16.600	7.03	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
117	16.500	7.02	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
118	16.400	7.02	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
119	16.300	7.02	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
120	16.200	7.01	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
121	16.100	7.01	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
122	16.000	7.00	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
123	15.900	7.00	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
124	15.800	7.00	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
125	15.700	6.99	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
126	15.600	6.99	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
127	15.500	6.99	1.43	0.53	0.00	0.00	0.00	0.00	0.00	3.80	3.80	3.80	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
AVG 20 DEG C RATE			1.17	0.32	0.00	0.00	0.00	0.00	0.00	1.90			0.02	0.00	0.13	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

********** WATER QUALITY CONSTITUENT VALUES **********

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	Sp Cond umhos/cm	CM-II	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
70	21.200	31.10	7.30	12148.60	0.00	5.55	4.20	0.00	7.10	0.00	1.58	0.15	0.00	1.73	0.00	58.00	0.00	0.	0.00
71	21.100	31.10	7.34	12212.98	0.00	4.91	3.36	0.00	6.26	0.00	1.58	0.15	0.00	1.73	0.00	58.00	0.00	0.	0.00
72	21.000	31.09	7.38	12278.44	0.00	4.64	2.79	0.00	5.69	0.00	1.57	0.15	0.00	1.72	0.00	58.00	0.00	0.	0.00
73	20.900	31.09	7.43	12345.01	0.00	4.55	2.40	0.00	5.30	0.00	1.57	0.15	0.00	1.72	0.00	58.00	0.00	0.	0.00

74	20.800	31.09	7.47	12412.69	0.00	4.53	2.13	0.00	5.03	0.00	1.56	0.15	0.00	1.71	0.00	58.00	0.00	0.	0.00
75	20.700	31.09	7.52	12481.51	0.00	4.54	1.95	0.00	4.85	0.00	1.56	0.15	0.00	1.71	0.00	58.00	0.00	0.	0.00
76	20.600	31.09	7.56	12551.49	0.00	4.56	1.83	0.00	4.73	0.00	1.55	0.15	0.00	1.71	0.00	58.00	0.00	0.	0.00
77	20.500	31.09	7.61	12622.65	0.00	4.58	1.74	0.00	4.64	0.00	1.55	0.15	0.00	1.70	0.00	58.00	0.00	0.	0.00
78	20.400	31.08	7.66	12695.00	0.00	4.60	1.68	0.00	4.58	0.00	1.54	0.15	0.00	1.70	0.00	58.00	0.00	0.	0.00
79	20.300	31.08	7.71	12768.57	0.00	4.62	1.64	0.00	4.54	0.00	1.54	0.15	0.00	1.70	0.00	58.00	0.00	0.	0.00
80	20.200	31.08	7.76	12843.37	0.00	4.63	1.61	0.00	4.51	0.00	1.54	0.15	0.00	1.69	0.00	58.00	0.00	0.	0.00
81	20.100	31.08	7.81	12919.44	0.00	4.64	1.60	0.00	4.50	0.00	1.54	0.15	0.00	1.69	0.00	58.00	0.00	0.	0.00
82	20.000	31.08	7.86	12996.78	0.00	4.64	1.58	0.00	4.48	0.00	1.53	0.15	0.00	1.69	0.00	58.00	0.00	0.	0.00
83	19.900	31.08	7.91	13075.43	0.00	4.64	1.58	0.00	4.48	0.00	1.53	0.15	0.00	1.68	0.00	58.00	0.00	0.	0.00
84	19.800	31.07	7.96	13155.39	0.00	4.65	1.57	0.00	4.47	0.00	1.53	0.15	0.00	1.68	0.00	58.00	0.00	0.	0.00
85	19.700	31.07	8.01	13236.71	0.00	4.65	1.57	0.00	4.47	0.00	1.53	0.15	0.00	1.68	0.00	58.00	0.00	0.	0.00
86	19.600	31.07	8.07	13319.38	0.00	4.65	1.56	0.00	4.46	0.00	1.53	0.15	0.00	1.68	0.00	58.00	0.00	0.	0.00
87	19.500	31.07	8.12	13403.45	0.00	4.64	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.68	0.00	58.00	0.00	0.	0.00
88	19.400	31.07	8.18	13488.94	0.00	4.64	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.68	0.00	58.00	0.00	0.	0.00
89	19.300	31.07	8.24	13575.86	0.00	4.64	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.67	0.00	58.00	0.00	0.	0.00
90	19.200	31.06	8.30	13664.24	0.00	4.64	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.67	0.00	58.00	0.00	0.	0.00
91	19.100	31.06	8.36	13754.11	0.00	4.64	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.67	0.00	58.00	0.00	0.	0.00
92	19.000	31.06	8.42	13845.48	0.00	4.64	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.67	0.00	58.00	0.00	0.	0.00
93	18.900	31.06	8.48	13938.40	0.00	4.64	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.67	0.00	58.00	0.00	0.	0.00
94	18.800	31.06	8.54	14032.88	0.00	4.63	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.67	0.00	58.00	0.00	0.	0.00
95	18.700	31.06	8.60	14128.95	0.00	4.63	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.67	0.00	58.00	0.00	0.	0.00
96	18.600	31.05	8.67	14226.63	0.00	4.63	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.67	0.00	58.00	0.00	0.	0.00
97	18.500	31.05	8.73	14325.95	0.00	4.63	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.67	0.00	58.00	0.00	0.	0.00
98	18.400	31.05	8.80	14426.95	0.00	4.62	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.67	0.00	58.00	0.00	0.	0.00
99	18.300	31.05	8.87	14529.64	0.00	4.62	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.67	0.00	58.00	0.00	0.	0.00
100	18.200	31.05	8.93	14634.06	0.00	4.62	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.67	0.00	58.00	0.00	0.	0.00
101	18.100	31.04	9.00	14740.24	0.00	4.62	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.67	0.00	58.00	0.00	0.	0.00
102	18.000	31.04	9.08	14848.20	0.00	4.62	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.68	0.00	58.00	0.00	0.	0.00
103	17.900	31.04	9.15	14957.97	0.00	4.61	1.56	0.00	4.46	0.00	1.52	0.15	0.00	1.68	0.00	58.00	0.00	0.	0.00
104	17.800	31.04	9.22	15069.60	0.00	4.61	1.56	0.00	4.46	0.00	1.53	0.15	0.00	1.68	0.00	58.00	0.00	0.	0.00
105	17.700	31.04	9.30	15183.10	0.00	4.61	1.56	0.00	4.46	0.00	1.53	0.15	0.00	1.68	0.00	58.00	0.00	0.	0.00
106	17.600	31.04	9.37	15298.51	0.00	4.60	1.56	0.00	4.46	0.00	1.53	0.15	0.00	1.68	0.00	58.00	0.00	0.	0.00
107	17.500	31.03	9.45	15415.85	0.00	4.60	1.56	0.00	4.46	0.00	1.53	0.15	0.00	1.69	0.00	58.00	0.00	0.	0.00
108	17.400	31.03	9.53	15535.18	0.00	4.60	1.56	0.00	4.46	0.00	1.53	0.15	0.00	1.69	0.00	58.00	0.00	0.	0.00
109	17.300	31.03	9.61	15656.51	0.00	4.60	1.56	0.00	4.46	0.00	1.54	0.15	0.00	1.69	0.00	58.00	0.00	0.	0.00
110	17.200	31.03	9.69	15779.88	0.00	4.59	1.56	0.00	4.46	0.00	1.54	0.16	0.00	1.70	0.00	58.00	0.00	0.	0.00
111	17.100	31.03	9.77	15905.32	0.00	4.59	1.56	0.00	4.46	0.00	1.54	0.16	0.00	1.70	0.00	58.00	0.00	0.	0.00
112	17.000	31.03	9.85	16032.87	0.00	4.59	1.56	0.00	4.46	0.00	1.55	0.16	0.00	1.70	0.00	58.00	0.00	0.	0.00
113	16.900	31.02	9.94	16162.57	0.00	4.58	1.56	0.00	4.46	0.00	1.55	0.16	0.00	1.71	0.00	58.00	0.00	0.	0.00
114	16.800	31.02	10.03	16294.45	0.00	4.58	1.56	0.00	4.46	0.00	1.56	0.16	0.00	1.71	0.00	58.00	0.00	0.	0.00
115	16.700	31.02	10.11	16428.54	0.00	4.58	1.56	0.00	4.46	0.00	1.56	0.16	0.00	1.72	0.00	58.00	0.00	0.	0.00
116	16.600	31.02	10.20	16564.89	0.00	4.57	1.56	0.00	4.46	0.00	1.57	0.16	0.00	1.73	0.00	58.00	0.00	0.	0.00
117	16.500	31.02	10.30	16703.54	0.00	4.57	1.56	0.00	4.46	0.00	1.57	0.16	0.00	1.73	0.00	58.00	0.00	0.	0.00
118	16.400	31.02	10.39	16844.51	0.00	4.56	1.56	0.00	4.46	0.00	1.58	0.16	0.00	1.74	0.00	58.00	0.00	0.	0.00
119	16.300	31.01	10.48	16987.86	0.00	4.56	1.56	0.00	4.46	0.00	1.59	0.16	0.00	1.75	0.00	58.00	0.00	0.	0.00
120	16.200	31.01	10.58	17133.62	0.00	4.56	1.56	0.00	4.46	0.00	1.60	0.16	0.00	1.76	0.00	58.00	0.00	0.	0.00
121	16.100	31.01	10.68	17281.82	0.00	4.55	1.56	0.00	4.46	0.00	1.61	0.16	0.00	1.77	0.00	58.00	0.00	0.	0.00
122	16.000	31.01	10.78	17432.52	0.00	4.55	1.56	0.00	4.46	0.00	1.62	0.16	0.00	1.78	0.00	58.00	0.00	0.	0.00
123	15.900	31.01	10.88	17585.75	0.00	4.54	1.56	0.00	4.46	0.00	1.63	0.17	0.00	1.80	0.00	58.00	0.00	0.	0.00
124	15.800	31.01	10.98	17741.56	0.00	4.54	1.55	0.00	4.45	0.00	1.64	0.17	0.00	1.81	0.00	58.00	0.00	0.	0.00

125	15.700	31.00	11.08	17899.99	0.00	4.53	1.55	0.00	4.45	0.00	1.66	0.17	0.00	1.82	0.00	58.00	0.00	0.	0.00
126	15.600	31.00	11.19	18061.09	0.00	4.52	1.54	0.00	4.44	0.00	1.67	0.17	0.00	1.84	0.00	58.00	0.00	0.	0.00
127	15.500	31.00	11.30	18224.89	0.00	4.51	1.54	0.00	4.44	0.00	1.69	0.17	0.00	1.86	0.00	58.00	0.00	0.	0.00

FINAL REPORT Bayou de Cade LA-QUAL model for Lost Lake and Four League Bay (120708)
REACH NO. 3 Blue Hammock Bayou Calibration to FTN field survey (July 2006)

********** REACH INPUTS **********

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	Sp Cond umhos/cm	CM-II	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
128	UPR RCH	0.02800	31.00	11.30	18224.89	0.00	4.51	1.54	0.00	4.44	0.00	1.69	0.17	0.00	0.00	58.00	0.00	0.00

********** HYDRAULIC PARAMETER VALUES **********

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m^3/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m^3	SURFACE AREA m^2	X-SECT AREA m^2	TIDAL PRISM m^3	TIDAL VELO m/s	DISPRSN m^2/s	MEAN VELO m/s
128	15.50	15.40	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
129	15.40	15.30	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
130	15.30	15.20	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
131	15.20	15.10	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
132	15.10	15.00	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
133	15.00	14.90	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
134	14.90	14.80	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
135	14.80	14.70	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
136	14.70	14.60	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
137	14.60	14.50	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
138	14.50	14.40	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
139	14.40	14.30	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
140	14.30	14.20	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
141	14.20	14.10	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
142	14.10	14.00	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
143	14.00	13.90	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
144	13.90	13.80	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
145	13.80	13.70	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
146	13.70	13.60	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
147	13.60	13.50	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
148	13.50	13.40	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
149	13.40	13.30	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
150	13.30	13.20	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
151	13.20	13.10	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
152	13.10	13.00	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
153	13.00	12.90	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
154	12.90	12.80	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000
155	12.80	12.70	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000

156	12.70	12.60	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
157	12.60	12.50	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
158	12.50	12.40	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
159	12.40	12.30	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
160	12.30	12.20	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
161	12.20	12.10	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
162	12.10	12.00	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
163	12.00	11.90	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
164	11.90	11.80	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
165	11.80	11.70	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
166	11.70	11.60	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
167	11.60	11.50	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
168	11.50	11.40	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
169	11.40	11.30	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
170	11.30	11.20	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
171	11.20	11.10	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
172	11.10	11.00	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
173	11.00	10.90	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
174	10.90	10.80	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
175	10.80	10.70	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
176	10.70	10.60	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
177	10.60	10.50	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
178	10.50	10.40	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
179	10.40	10.30	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
180	10.30	10.20	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
181	10.20	10.10	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
182	10.10	10.00	0.02800	0.0	0.00002	51.06	2.26	546.58	123527.09	54658.00	1235.27	0.00	0.000	0.500	0.000								
TOT						2808.36			6793987.00	3006190.00													
AVG					0.0000		2.26	546.58			1235.27												
CUM						10003.53																	

********** BIOLOGICAL AND PHYSICAL COEFFICIENTS **********

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
128	15.400	6.98	0.48	0.53	0.00	0.00	0.00	0.00	0.00	6.10	6.10	6.10	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
129	15.300	6.98	0.48	0.53	0.00	0.00	0.00	0.00	0.00	6.11	6.11	6.11	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
130	15.200	6.98	0.48	0.53	0.00	0.00	0.00	0.00	0.00	6.11	6.11	6.11	0.02	0.00	0.25	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
131	15.100	6.97	0.48	0.53	0.00	0.00	0.00	0.00	0.00	6.12	6.12	6.12	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
132	15.000	6.97	0.48	0.53	0.00	0.00	0.00	0.00	0.00	6.13	6.13	6.13	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
133	14.900	6.97	0.48	0.53	0.00	0.00	0.00	0.00	0.00	6.13	6.13	6.13	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
134	14.800	6.97	0.48	0.53	0.00	0.00	0.00	0.00	0.00	6.14	6.14	6.14	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
135	14.700	6.96	0.48	0.53	0.00	0.00	0.00	0.00	0.00	6.14	6.14	6.14	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
136	14.600	6.96	0.48	0.53	0.00	0.00	0.00	0.00	0.00	6.15	6.15	6.15	0.02	0.00	0.25	0.00	0.00	0.00	2.51	0.00	0.00	0.00	0.00
137	14.500	6.96	0.48	0.53	0.00	0.00	0.00	0.00	0.00	6.15	6.15	6.15	0.02	0.00	0.25	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00
138	14.400	6.95	0.48	0.53	0.00	0.00	0.00	0.00	0.00	6.16	6.16	6.16	0.02	0.00	0.25	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00
139	14.300	6.95	0.48	0.53	0.00	0.00	0.00	0.00	0.00	6.16	6.16	6.16	0.02	0.00	0.25	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00

140	14.200	6.95	0.48	0.53	0.00	0.00	0.00	0.00	0.00	6.17	6.17	6.17	0.02	0.00	0.25	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00
141	14.100	6.95	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.18	6.18	6.18	0.02	0.00	0.25	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00
142	14.000	6.94	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.18	6.18	6.18	0.02	0.00	0.25	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00
143	13.900	6.94	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.19	6.19	6.19	0.02	0.00	0.25	0.00	0.00	0.00	2.53	0.00	0.00	0.00	0.00
144	13.800	6.94	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.19	6.19	6.19	0.02	0.00	0.25	0.00	0.00	0.00	2.53	0.00	0.00	0.00	0.00
145	13.700	6.93	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.20	6.20	6.20	0.02	0.00	0.25	0.00	0.00	0.00	2.53	0.00	0.00	0.00	0.00
146	13.600	6.93	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.20	6.20	6.20	0.03	0.00	0.25	0.00	0.00	0.00	2.53	0.00	0.00	0.00	0.00
147	13.500	6.93	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.21	6.21	6.21	0.03	0.00	0.25	0.00	0.00	0.00	2.53	0.00	0.00	0.00	0.00
148	13.400	6.92	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.22	6.22	6.22	0.03	0.00	0.25	0.00	0.00	0.00	2.53	0.00	0.00	0.00	0.00
149	13.300	6.92	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.22	6.22	6.22	0.03	0.00	0.25	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00
150	13.200	6.92	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.23	6.23	6.23	0.03	0.00	0.25	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00
151	13.100	6.92	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.23	6.23	6.23	0.03	0.00	0.25	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00
152	13.000	6.91	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.24	6.24	6.24	0.03	0.00	0.25	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00
153	12.900	6.91	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.24	6.24	6.24	0.03	0.00	0.25	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00
154	12.800	6.91	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.25	6.25	6.25	0.03	0.00	0.25	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00
155	12.700	6.90	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.26	6.26	6.26	0.03	0.00	0.25	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00
156	12.600	6.90	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.26	6.26	6.26	0.03	0.00	0.25	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00
157	12.500	6.90	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.27	6.27	6.27	0.03	0.00	0.25	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00
158	12.400	6.90	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.27	6.27	6.27	0.03	0.00	0.25	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00
159	12.300	6.89	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.28	6.28	6.28	0.03	0.00	0.25	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00
160	12.200	6.89	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.28	6.28	6.28	0.03	0.00	0.25	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00
161	12.100	6.89	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.29	6.29	6.29	0.03	0.00	0.25	0.00	0.00	0.00	2.56	0.00	0.00	0.00	0.00
162	12.000	6.88	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.30	6.30	6.30	0.03	0.00	0.25	0.00	0.00	0.00	2.56	0.00	0.00	0.00	0.00
163	11.900	6.88	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.30	6.30	6.30	0.03	0.00	0.25	0.00	0.00	0.00	2.56	0.00	0.00	0.00	0.00
164	11.800	6.88	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.31	6.31	6.31	0.03	0.00	0.25	0.00	0.00	0.00	2.56	0.00	0.00	0.00	0.00
165	11.700	6.88	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.31	6.31	6.31	0.03	0.00	0.25	0.00	0.00	0.00	2.56	0.00	0.00	0.00	0.00
166	11.600	6.87	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.32	6.32	6.32	0.03	0.00	0.25	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00
167	11.500	6.87	0.48	0.54	0.00	0.00	0.00	0.00	0.00	6.32	6.32	6.32	0.03	0.00	0.25	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00
168	11.400	6.87	0.48	0.55	0.00	0.00	0.00	0.00	0.00	6.33	6.33	6.33	0.03	0.00	0.25	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00
169	11.300	6.86	0.48	0.55	0.00	0.00	0.00	0.00	0.00	6.34	6.34	6.34	0.03	0.00	0.25	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00
170	11.200	6.86	0.48	0.55	0.00	0.00	0.00	0.00	0.00	6.34	6.34	6.34	0.03	0.00	0.25	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00
171	11.100	6.86	0.48	0.55	0.00	0.00	0.00	0.00	0.00	6.35	6.35	6.35	0.03	0.00	0.26	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00
172	11.000	6.85	0.48	0.55	0.00	0.00	0.00	0.00	0.00	6.35	6.35	6.35	0.03	0.00	0.26	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
173	10.900	6.85	0.48	0.55	0.00	0.00	0.00	0.00	0.00	6.36	6.36	6.36	0.03	0.00	0.26	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
174	10.800	6.85	0.48	0.55	0.00	0.00	0.00	0.00	0.00	6.37	6.37	6.37	0.03	0.00	0.26	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
175	10.700	6.85	0.48	0.55	0.00	0.00	0.00	0.00	0.00	6.37	6.37	6.37	0.03	0.00	0.26	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
176	10.600	6.84	0.48	0.55	0.00	0.00	0.00	0.00	0.00	6.38	6.38	6.38	0.03	0.00	0.26	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
177	10.500	6.84	0.48	0.55	0.00	0.00	0.00	0.00	0.00	6.38	6.38	6.38	0.03	0.00	0.26	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
178	10.400	6.84	0.49	0.55	0.00	0.00	0.00	0.00	0.00	6.39	6.39	6.39	0.03	0.00	0.26	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
179	10.300	6.83	0.49	0.55	0.00	0.00	0.00	0.00	0.00	6.39	6.39	6.39	0.03	0.00	0.26	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
180	10.200	6.83	0.49	0.55	0.00	0.00	0.00	0.00	0.00	6.40	6.40	6.40	0.03	0.00	0.26	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
181	10.100	6.83	0.49	0.55	0.00	0.00	0.00	0.00	0.00	6.41	6.41	6.41	0.03	0.00	0.26	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
182	10.000	6.82	0.49	0.55	0.00	0.00	0.00	0.00	0.00	6.41	6.41	6.41	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
AVG 20 DEG C RATE			0.39	0.32	0.00	0.00	0.00	0.00	0.00	3.05			0.02	0.00	0.13	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

********** WATER QUALITY CONSTITUENT VALUES **********

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	Sp Cond umhos/cm	CM-II	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
128	15.400	31.01	11.34	18295.63	0.00	4.50	1.53	0.00	4.43	0.00	1.70	0.17	0.00	1.87	0.00	58.00	0.00	0.	0.00
129	15.300	31.03	11.37	18340.86	0.00	4.49	1.53	0.00	4.43	0.00	1.70	0.17	0.00	1.87	0.00	58.00	0.00	0.	0.00
130	15.200	31.04	11.40	18386.29	0.00	4.49	1.53	0.00	4.43	0.00	1.70	0.17	0.00	1.88	0.00	58.00	0.00	0.	0.00
131	15.100	31.06	11.43	18431.93	0.00	4.48	1.52	0.00	4.42	0.00	1.71	0.17	0.00	1.88	0.00	58.00	0.00	0.	0.00
132	15.000	31.07	11.46	18477.77	0.00	4.48	1.52	0.00	4.42	0.00	1.71	0.17	0.00	1.88	0.00	58.00	0.00	0.	0.00
133	14.900	31.09	11.49	18523.82	0.00	4.47	1.52	0.00	4.42	0.00	1.72	0.17	0.00	1.89	0.00	58.00	0.00	0.	0.00
134	14.800	31.10	11.52	18570.09	0.00	4.47	1.52	0.00	4.42	0.00	1.72	0.17	0.00	1.89	0.00	58.00	0.00	0.	0.00
135	14.700	31.12	11.55	18616.56	0.00	4.46	1.52	0.00	4.42	0.00	1.72	0.17	0.00	1.89	0.00	58.00	0.00	0.	0.00
136	14.600	31.13	11.59	18663.24	0.00	4.46	1.52	0.00	4.42	0.00	1.72	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
137	14.500	31.15	11.62	18710.13	0.00	4.46	1.52	0.00	4.42	0.00	1.72	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
138	14.400	31.16	11.65	18757.24	0.00	4.45	1.52	0.00	4.42	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
139	14.300	31.17	11.68	18804.55	0.00	4.45	1.51	0.00	4.41	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
140	14.200	31.19	11.71	18852.09	0.00	4.44	1.51	0.00	4.41	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
141	14.100	31.20	11.74	18899.84	0.00	4.44	1.51	0.00	4.41	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
142	14.000	31.22	11.77	18947.80	0.00	4.43	1.51	0.00	4.41	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
143	13.900	31.23	11.80	18995.98	0.00	4.43	1.51	0.00	4.41	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
144	13.800	31.25	11.84	19044.38	0.00	4.43	1.51	0.00	4.41	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
145	13.700	31.26	11.87	19093.01	0.00	4.42	1.51	0.00	4.41	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
146	13.600	31.28	11.90	19141.85	0.00	4.42	1.51	0.00	4.41	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
147	13.500	31.29	11.93	19190.91	0.00	4.41	1.51	0.00	4.41	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
148	13.400	31.31	11.96	19240.20	0.00	4.41	1.51	0.00	4.41	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
149	13.300	31.32	12.00	19289.70	0.00	4.41	1.50	0.00	4.40	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
150	13.200	31.33	12.03	19339.44	0.00	4.40	1.50	0.00	4.40	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
151	13.100	31.35	12.06	19389.39	0.00	4.40	1.50	0.00	4.40	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
152	13.000	31.36	12.10	19439.58	0.00	4.39	1.50	0.00	4.40	0.00	1.73	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
153	12.900	31.38	12.13	19489.99	0.00	4.39	1.50	0.00	4.40	0.00	1.72	0.17	0.00	1.90	0.00	58.00	0.00	0.	0.00
154	12.800	31.39	12.16	19540.63	0.00	4.39	1.50	0.00	4.40	0.00	1.72	0.17	0.00	1.89	0.00	58.00	0.00	0.	0.00
155	12.700	31.41	12.20	19591.50	0.00	4.38	1.50	0.00	4.40	0.00	1.72	0.17	0.00	1.89	0.00	58.00	0.00	0.	0.00
156	12.600	31.42	12.23	19642.61	0.00	4.38	1.50	0.00	4.40	0.00	1.72	0.17	0.00	1.89	0.00	58.00	0.00	0.	0.00
157	12.500	31.44	12.26	19693.94	0.00	4.38	1.50	0.00	4.40	0.00	1.72	0.17	0.00	1.89	0.00	58.00	0.00	0.	0.00
158	12.400	31.45	12.30	19745.50	0.00	4.37	1.50	0.00	4.40	0.00	1.71	0.17	0.00	1.88	0.00	58.00	0.00	0.	0.00
159	12.300	31.47	12.33	19797.30	0.00	4.37	1.49	0.00	4.39	0.00	1.71	0.17	0.00	1.88	0.00	58.00	0.00	0.	0.00
160	12.200	31.48	12.37	19849.34	0.00	4.36	1.49	0.00	4.39	0.00	1.71	0.17	0.00	1.87	0.00	58.00	0.00	0.	0.00
161	12.100	31.49	12.40	19901.61	0.00	4.36	1.49	0.00	4.39	0.00	1.70	0.17	0.00	1.87	0.00	58.00	0.00	0.	0.00
162	12.000	31.51	12.43	19954.11	0.00	4.36	1.49	0.00	4.39	0.00	1.70	0.17	0.00	1.87	0.00	58.00	0.00	0.	0.00
163	11.900	31.52	12.47	20006.86	0.00	4.35	1.49	0.00	4.39	0.00	1.69	0.17	0.00	1.86	0.00	58.00	0.00	0.	0.00
164	11.800	31.54	12.50	20059.84	0.00	4.35	1.49	0.00	4.39	0.00	1.69	0.17	0.00	1.85	0.00	58.00	0.00	0.	0.00
165	11.700	31.55	12.54	20113.07	0.00	4.35	1.49	0.00	4.39	0.00	1.68	0.17	0.00	1.85	0.00	58.00	0.00	0.	0.00
166	11.600	31.57	12.57	20166.53	0.00	4.34	1.49	0.00	4.39	0.00	1.68	0.16	0.00	1.84	0.00	58.00	0.00	0.	0.00
167	11.500	31.58	12.61	20220.24	0.00	4.34	1.49	0.00	4.39	0.00	1.67	0.16	0.00	1.84	0.00	58.00	0.00	0.	0.00
168	11.400	31.60	12.64	20274.19	0.00	4.34	1.49	0.00	4.39	0.00	1.66	0.16	0.00	1.83	0.00	58.00	0.00	0.	0.00
169	11.300	31.61	12.68	20328.39	0.00	4.34	1.49	0.00	4.39	0.00	1.66	0.16	0.00	1.82	0.00	58.00	0.00	0.	0.00
170	11.200	31.63	12.72	20382.83	0.00	4.33	1.49	0.00	4.39	0.00	1.65	0.16	0.00	1.81	0.00	58.00	0.00	0.	0.00
171	11.100	31.64	12.75	20437.52	0.00	4.33	1.49	0.00	4.39	0.00	1.64	0.16	0.00	1.80	0.00	58.00	0.00	0.	0.00
172	11.000	31.65	12.79	20492.46	0.00	4.33	1.50	0.00	4.40	0.00	1.63	0.16	0.00	1.79	0.00	58.00	0.00	0.	0.00
173	10.900	31.67	12.82	20547.64	0.00	4.33	1.50	0.00	4.40	0.00	1.62	0.16	0.00	1.78	0.00	58.00	0.00	0.	0.00
174	10.800	31.68	12.86	20603.08	0.00	4.34	1.51	0.00	4.41	0.00	1.61	0.16	0.00	1.77	0.00	58.00	0.00	0.	0.00
175	10.700	31.70	12.90	20658.76	0.00	4.35	1.53	0.00	4.43	0.00	1.60	0.15	0.00	1.75	0.00	58.00	0.00	0.	0.00

176	10.600	31.71	12.93	20714.70	0.00	4.37	1.55	0.00	4.45	0.00	1.59	0.15	0.00	1.74	0.00	58.00	0.00	0.	0.00
177	10.500	31.73	12.97	20770.90	0.00	4.41	1.58	0.00	4.48	0.00	1.57	0.15	0.00	1.72	0.00	58.00	0.00	0.	0.00
178	10.400	31.74	13.01	20827.34	0.00	4.46	1.62	0.00	4.52	0.00	1.56	0.15	0.00	1.71	0.00	58.00	0.00	0.	0.00
179	10.300	31.76	13.05	20884.05	0.00	4.55	1.68	0.00	4.58	0.00	1.54	0.15	0.00	1.69	0.00	58.00	0.00	0.	0.00
180	10.200	31.77	13.08	20941.01	0.00	4.69	1.77	0.00	4.67	0.00	1.53	0.14	0.00	1.67	0.00	58.00	0.00	0.	0.00
181	10.100	31.79	13.12	20998.23	0.00	4.91	1.89	0.00	4.79	0.00	1.51	0.14	0.00	1.65	0.00	58.00	0.00	0.	0.00
182	10.000	31.80	13.16	21055.71	0.00	5.25	2.07	0.00	4.97	0.00	1.49	0.14	0.00	1.63	0.00	58.00	0.00	0.	0.00

FINAL REPORT Bayou de Cade — LA-QUAL model for Lost Lake and Four League Bay (120708)
REACH NO. 5 Four League Bay (South) — Calibration to FTN field survey (July 2006)

********** REACH INPUTS **********

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	Sp Cond umhos/cm	CM-II	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
333	UPR RCH	0.02800	31.80	13.16	21055.71	0.00	5.25	2.07	0.00	4.97	0.00	1.49	0.14	0.00	0.00	58.00	0.00	0.00
333	TRIB	0.02800	31.80	10.04	16039.72	0.00	6.94	2.84	0.00	5.74	0.00	1.20	0.11	0.00	0.00	58.00	0.00	0.00

********** HYDRAULIC PARAMETER VALUES **********

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
333	10.00	9.90	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
334	9.90	9.80	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
335	9.80	9.70	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
336	9.70	9.60	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
337	9.60	9.50	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
338	9.50	9.40	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
339	9.40	9.30	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
340	9.30	9.20	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
341	9.20	9.10	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
342	9.10	9.00	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
343	9.00	8.90	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
344	8.90	8.80	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
345	8.80	8.70	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
346	8.70	8.60	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
347	8.60	8.50	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
348	8.50	8.40	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
349	8.40	8.30	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
350	8.30	8.20	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
351	8.20	8.10	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
352	8.10	8.00	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
353	8.00	7.90	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
354	7.90	7.80	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000
355	7.80	7.70	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000

356	7.70	7.60	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
357	7.60	7.50	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
358	7.50	7.40	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
359	7.40	7.30	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
360	7.30	7.20	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
361	7.20	7.10	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
362	7.10	7.00	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
363	7.00	6.90	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
364	6.90	6.80	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
365	6.80	6.70	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
366	6.70	6.60	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
367	6.60	6.50	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
368	6.50	6.40	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
369	6.40	6.30	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
370	6.30	6.20	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
371	6.20	6.10	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
372	6.10	6.00	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
373	6.00	5.90	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
374	5.90	5.80	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
375	5.80	5.70	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
376	5.70	5.60	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
377	5.60	5.50	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
378	5.50	5.40	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
379	5.40	5.30	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
380	5.30	5.20	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
381	5.20	5.10	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
382	5.10	5.00	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
383	5.00	4.90	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
384	4.90	4.80	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
385	4.80	4.70	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
386	4.70	4.60	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
387	4.60	4.50	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
388	4.50	4.40	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
389	4.40	4.30	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
390	4.30	4.20	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
391	4.20	4.10	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
392	4.10	4.00	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
393	4.00	3.90	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
394	3.90	3.80	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
395	3.80	3.70	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
396	3.70	3.60	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
397	3.60	3.50	0.05600	0.0	0.00003	46.11	0.75	2974.87	223115.27	297487.00	2231.15	0.00	0.000	0.650	0.000						
TOT						2997.37			14502489.00	19336664.00											
AVG					0.0000		0.75	2974.87			2231.15										
CUM						13000.90															

********** BIOLOGICAL AND PHYSICAL COEFFICIENTS **********

ELEM	ENDING	SAT	REAER	BOD#1	BOD#1	ABOD#1	BOD#2	BOD#2	ABOD#2	BKGD	FULL	CORR	ORGN	ORGN	NH3	NH3	DENIT	PO4	ALG	MAC	COLI	NCM	NCM

NO.	DIST	D.O. mg/L	RATE 1/da	DECAY 1/da	SETT 1/da	DECAY 1/da	DECAY 1/da	SETT 1/da	DECAY 1/da	SOD *	SOD *	SOD *	DECAY 1/da	SETT 1/da	DECAY 1/da	SRCE *	RATE 1/da	SRCE *	PROD **	PROD **	DECAY 1/da	DECAY 1/da	SETT 1/da
333	9.900	6.82	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
334	9.800	6.82	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
335	9.700	6.82	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
336	9.600	6.82	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
337	9.500	6.82	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
338	9.400	6.82	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
339	9.300	6.82	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
340	9.200	6.81	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
341	9.100	6.81	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
342	9.000	6.81	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
343	8.900	6.81	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
344	8.800	6.81	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
345	8.700	6.81	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
346	8.600	6.81	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
347	8.500	6.81	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
348	8.400	6.80	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
349	8.300	6.80	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
350	8.200	6.80	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
351	8.100	6.80	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
352	8.000	6.80	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
353	7.900	6.80	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
354	7.800	6.80	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
355	7.700	6.80	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
356	7.600	6.79	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
357	7.500	6.79	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
358	7.400	6.79	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
359	7.300	6.79	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
360	7.200	6.79	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
361	7.100	6.79	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
362	7.000	6.79	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
363	6.900	6.78	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
364	6.800	6.78	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
365	6.700	6.78	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
366	6.600	6.78	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
367	6.500	6.78	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
368	6.400	6.78	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
369	6.300	6.78	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
370	6.200	6.77	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
371	6.100	6.77	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.89	1.89	1.89	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
372	6.000	6.77	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
373	5.900	6.77	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
374	5.800	6.77	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
375	5.700	6.77	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
376	5.600	6.77	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
377	5.500	6.76	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
378	5.400	6.76	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
379	5.300	6.76	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
380	5.200	6.76	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00

381	5.100	6.76	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
382	5.000	6.76	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
383	4.900	6.76	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
384	4.800	6.75	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
385	4.700	6.75	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
386	4.600	6.75	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
387	4.500	6.75	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
388	4.400	6.75	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
389	4.300	6.75	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
390	4.200	6.74	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
391	4.100	6.74	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
392	4.000	6.74	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
393	3.900	6.74	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
394	3.800	6.74	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
395	3.700	6.74	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
396	3.600	6.73	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
397	3.500	6.73	1.46	0.55	0.00	0.00	0.00	0.00	0.00	1.88	1.88	1.88	0.03	0.00	0.27	0.00	0.00	0.00	2.58	0.00	0.00	0.00	0.00
AVG 20 DEG C RATE			1.19	0.32	0.00	0.00	0.00	0.00	0.00	0.90			0.02	0.00	0.13	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

********** WATER QUALITY CONSTITUENT VALUES **********

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	Sp Cond umhos/cm	CM-II	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
333	9.900	31.80	13.18	21090.20	0.00	5.57	2.22	0.00	5.12	0.00	1.47	0.14	0.00	1.61	0.00	58.00	0.00	0.	0.00
334	9.800	31.80	13.22	21149.67	0.00	5.69	2.30	0.00	5.20	0.00	1.47	0.14	0.00	1.60	0.00	58.00	0.00	0.	0.00
335	9.700	31.80	13.26	21209.38	0.00	5.75	2.35	0.00	5.25	0.00	1.46	0.14	0.00	1.60	0.00	58.00	0.00	0.	0.00
336	9.600	31.79	13.30	21269.31	0.00	5.79	2.39	0.00	5.29	0.00	1.45	0.14	0.00	1.59	0.00	58.00	0.00	0.	0.00
337	9.500	31.79	13.33	21329.48	0.00	5.81	2.42	0.00	5.32	0.00	1.45	0.13	0.00	1.58	0.00	58.00	0.00	0.	0.00
338	9.400	31.79	13.37	21389.88	0.00	5.82	2.45	0.00	5.35	0.00	1.44	0.13	0.00	1.58	0.00	58.00	0.00	0.	0.00
339	9.300	31.79	13.41	21450.51	0.00	5.82	2.46	0.00	5.36	0.00	1.44	0.13	0.00	1.57	0.00	58.00	0.00	0.	0.00
340	9.200	31.79	13.45	21511.37	0.00	5.82	2.48	0.00	5.38	0.00	1.43	0.13	0.00	1.57	0.00	58.00	0.00	0.	0.00
341	9.100	31.79	13.49	21572.47	0.00	5.82	2.48	0.00	5.38	0.00	1.43	0.13	0.00	1.56	0.00	58.00	0.00	0.	0.00
342	9.000	31.78	13.53	21633.81	0.00	5.82	2.49	0.00	5.39	0.00	1.43	0.13	0.00	1.56	0.00	58.00	0.00	0.	0.00
343	8.900	31.78	13.57	21695.38	0.00	5.81	2.50	0.00	5.40	0.00	1.42	0.13	0.00	1.55	0.00	58.00	0.00	0.	0.00
344	8.800	31.78	13.61	21757.19	0.00	5.81	2.50	0.00	5.40	0.00	1.42	0.13	0.00	1.55	0.00	58.00	0.00	0.	0.00
345	8.700	31.78	13.65	21819.24	0.00	5.81	2.50	0.00	5.40	0.00	1.41	0.13	0.00	1.55	0.00	58.00	0.00	0.	0.00
346	8.600	31.78	13.69	21881.53	0.00	5.81	2.50	0.00	5.40	0.00	1.41	0.13	0.00	1.54	0.00	58.00	0.00	0.	0.00
347	8.500	31.78	13.73	21944.06	0.00	5.81	2.51	0.00	5.41	0.00	1.41	0.13	0.00	1.54	0.00	58.00	0.00	0.	0.00
348	8.400	31.78	13.77	22006.83	0.00	5.81	2.51	0.00	5.41	0.00	1.41	0.13	0.00	1.54	0.00	58.00	0.00	0.	0.00
349	8.300	31.77	13.81	22069.85	0.00	5.80	2.51	0.00	5.41	0.00	1.40	0.13	0.00	1.53	0.00	58.00	0.00	0.	0.00
350	8.200	31.77	13.85	22133.10	0.00	5.80	2.51	0.00	5.41	0.00	1.40	0.13	0.00	1.53	0.00	58.00	0.00	0.	0.00
351	8.100	31.77	13.89	22196.61	0.00	5.80	2.51	0.00	5.41	0.00	1.40	0.13	0.00	1.53	0.00	58.00	0.00	0.	0.00
352	8.000	31.77	13.93	22260.35	0.00	5.80	2.51	0.00	5.41	0.00	1.40	0.13	0.00	1.52	0.00	58.00	0.00	0.	0.00
353	7.900	31.77	13.97	22324.34	0.00	5.80	2.51	0.00	5.41	0.00	1.39	0.13	0.00	1.52	0.00	58.00	0.00	0.	0.00
354	7.800	31.77	14.01	22388.58	0.00	5.80	2.51	0.00	5.41	0.00	1.39	0.13	0.00	1.52	0.00	58.00	0.00	0.	0.00
355	7.700	31.76	14.05	22453.07	0.00	5.80	2.51	0.00	5.41	0.00	1.39	0.13	0.00	1.52	0.00	58.00	0.00	0.	0.00

356	7.600	31.76	14.09	22517.81	0.00	5.79	2.51	0.00	5.41	0.00	1.39	0.13	0.00	1.52	0.00	58.00	0.00	0.	0.00
357	7.500	31.76	14.13	22582.79	0.00	5.79	2.51	0.00	5.41	0.00	1.39	0.13	0.00	1.51	0.00	58.00	0.00	0.	0.00
358	7.400	31.76	14.17	22648.03	0.00	5.79	2.51	0.00	5.41	0.00	1.38	0.13	0.00	1.51	0.00	58.00	0.00	0.	0.00
359	7.300	31.76	14.22	22713.52	0.00	5.79	2.51	0.00	5.41	0.00	1.38	0.13	0.00	1.51	0.00	58.00	0.00	0.	0.00
360	7.200	31.76	14.26	22779.27	0.00	5.79	2.51	0.00	5.41	0.00	1.38	0.13	0.00	1.51	0.00	58.00	0.00	0.	0.00
361	7.100	31.76	14.30	22845.26	0.00	5.79	2.51	0.00	5.41	0.00	1.38	0.13	0.00	1.51	0.00	58.00	0.00	0.	0.00
362	7.000	31.75	14.34	22911.51	0.00	5.79	2.51	0.00	5.41	0.00	1.38	0.13	0.00	1.51	0.00	58.00	0.00	0.	0.00
363	6.900	31.75	14.39	22978.02	0.00	5.79	2.51	0.00	5.41	0.00	1.38	0.13	0.00	1.51	0.00	58.00	0.00	0.	0.00
364	6.800	31.75	14.43	23044.79	0.00	5.78	2.51	0.00	5.41	0.00	1.38	0.13	0.00	1.50	0.00	58.00	0.00	0.	0.00
365	6.700	31.75	14.47	23111.81	0.00	5.78	2.51	0.00	5.41	0.00	1.38	0.13	0.00	1.50	0.00	58.00	0.00	0.	0.00
366	6.600	31.75	14.51	23179.09	0.00	5.78	2.51	0.00	5.41	0.00	1.37	0.13	0.00	1.50	0.00	58.00	0.00	0.	0.00
367	6.500	31.75	14.56	23246.63	0.00	5.78	2.51	0.00	5.41	0.00	1.37	0.13	0.00	1.50	0.00	58.00	0.00	0.	0.00
368	6.400	31.74	14.60	23314.43	0.00	5.78	2.51	0.00	5.41	0.00	1.37	0.13	0.00	1.50	0.00	58.00	0.00	0.	0.00
369	6.300	31.74	14.64	23382.49	0.00	5.78	2.51	0.00	5.41	0.00	1.37	0.13	0.00	1.50	0.00	58.00	0.00	0.	0.00
370	6.200	31.74	14.69	23450.82	0.00	5.78	2.51	0.00	5.41	0.00	1.37	0.13	0.00	1.50	0.00	58.00	0.00	0.	0.00
371	6.100	31.74	14.73	23519.41	0.00	5.78	2.51	0.00	5.41	0.00	1.37	0.13	0.00	1.50	0.00	58.00	0.00	0.	0.00
372	6.000	31.74	14.77	23588.26	0.00	5.77	2.51	0.00	5.41	0.00	1.37	0.13	0.00	1.50	0.00	58.00	0.00	0.	0.00
373	5.900	31.74	14.82	23657.38	0.00	5.77	2.51	0.00	5.41	0.00	1.37	0.13	0.00	1.49	0.00	58.00	0.00	0.	0.00
374	5.800	31.74	14.86	23726.77	0.00	5.77	2.51	0.00	5.41	0.00	1.37	0.13	0.00	1.49	0.00	58.00	0.00	0.	0.00
375	5.700	31.73	14.91	23796.43	0.00	5.77	2.51	0.00	5.41	0.00	1.37	0.13	0.00	1.49	0.00	58.00	0.00	0.	0.00
376	5.600	31.73	14.95	23866.35	0.00	5.77	2.51	0.00	5.41	0.00	1.37	0.13	0.00	1.49	0.00	58.00	0.00	0.	0.00
377	5.500	31.73	15.00	23936.55	0.00	5.77	2.51	0.00	5.41	0.00	1.36	0.13	0.00	1.49	0.00	58.00	0.00	0.	0.00
378	5.400	31.73	15.04	24007.01	0.00	5.77	2.51	0.00	5.41	0.00	1.36	0.13	0.00	1.49	0.00	58.00	0.00	0.	0.00
379	5.300	31.73	15.09	24077.75	0.00	5.76	2.51	0.00	5.41	0.00	1.36	0.13	0.00	1.49	0.00	58.00	0.00	0.	0.00
380	5.200	31.73	15.13	24148.76	0.00	5.76	2.51	0.00	5.41	0.00	1.36	0.13	0.00	1.49	0.00	58.00	0.00	0.	0.00
381	5.100	31.72	15.18	24220.05	0.00	5.76	2.52	0.00	5.42	0.00	1.36	0.13	0.00	1.49	0.00	58.00	0.00	0.	0.00
382	5.000	31.72	15.22	24291.61	0.00	5.76	2.52	0.00	5.42	0.00	1.36	0.13	0.00	1.49	0.00	58.00	0.00	0.	0.00
383	4.900	31.72	15.27	24363.44	0.00	5.76	2.52	0.00	5.42	0.00	1.36	0.13	0.00	1.48	0.00	58.00	0.00	0.	0.00
384	4.800	31.72	15.31	24435.56	0.00	5.76	2.52	0.00	5.42	0.00	1.36	0.13	0.00	1.48	0.00	58.00	0.00	0.	0.00
385	4.700	31.72	15.36	24507.95	0.00	5.76	2.52	0.00	5.42	0.00	1.36	0.13	0.00	1.48	0.00	58.00	0.00	0.	0.00
386	4.600	31.72	15.41	24580.62	0.00	5.75	2.52	0.00	5.42	0.00	1.35	0.13	0.00	1.48	0.00	58.00	0.00	0.	0.00
387	4.500	31.72	15.45	24653.57	0.00	5.75	2.52	0.00	5.42	0.00	1.35	0.13	0.00	1.48	0.00	58.00	0.00	0.	0.00
388	4.400	31.71	15.50	24726.81	0.00	5.75	2.52	0.00	5.42	0.00	1.35	0.13	0.00	1.48	0.00	58.00	0.00	0.	0.00
389	4.300	31.71	15.55	24800.33	0.00	5.75	2.52	0.00	5.42	0.00	1.35	0.13	0.00	1.48	0.00	58.00	0.00	0.	0.00
390	4.200	31.71	15.59	24874.13	0.00	5.75	2.52	0.00	5.42	0.00	1.35	0.12	0.00	1.47	0.00	58.00	0.00	0.	0.00
391	4.100	31.71	15.64	24948.21	0.00	5.75	2.52	0.00	5.42	0.00	1.35	0.12	0.00	1.47	0.00	58.00	0.00	0.	0.00
392	4.000	31.71	15.69	25022.59	0.00	5.75	2.52	0.00	5.42	0.00	1.35	0.12	0.00	1.47	0.00	58.00	0.00	0.	0.00
393	3.900	31.71	15.74	25097.25	0.00	5.76	2.52	0.00	5.42	0.00	1.34	0.12	0.00	1.47	0.00	58.00	0.00	0.	0.00
394	3.800	31.70	15.78	25172.19	0.00	5.76	2.52	0.00	5.42	0.00	1.34	0.12	0.00	1.47	0.00	58.00	0.00	0.	0.00
395	3.700	31.70	15.83	25247.43	0.00	5.77	2.52	0.00	5.42	0.00	1.34	0.12	0.00	1.46	0.00	58.00	0.00	0.	0.00
396	3.600	31.70	15.88	25322.96	0.00	5.79	2.52	0.00	5.42	0.00	1.34	0.12	0.00	1.46	0.00	58.00	0.00	0.	0.00
397	3.500	31.70	15.93	25398.78	0.00	5.82	2.52	0.00	5.42	0.00	1.34	0.12	0.00	1.46	0.00	58.00	0.00	0.	0.00

FINAL REPORT Bayou de Cade — LA-QUAL model for Lost Lake and Four League Bay (120708)
REACH NO. 6 Oyster Bayou — Calibration to FTN field survey (July 2006)

********** REACH INPUTS **********

ELEM	TYPE	FLOW	TEMP	SALN	Sp Cond	CM-II	DO	BOD#1	BOD#2	EBOD#1	EBOD#2	ORGN	NH3	NO3+2	PHOS	CHL A	COLI	NCM

NO.			deg C	ppt	umhos/cm		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	#/100mL	
398	UPR RCH	0.05600	31.70	15.93	25398.78	0.00	5.82	2.52	0.00	5.42	0.00	1.34	0.12	0.00	0.00	58.00	0.00	0.00

********** HYDRAULIC PARAMETER VALUES **********

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
398	3.50	3.40	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
399	3.40	3.30	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
400	3.30	3.20	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
401	3.20	3.10	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
402	3.10	3.00	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
403	3.00	2.90	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
404	2.90	2.80	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
405	2.80	2.70	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
406	2.70	2.60	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
407	2.60	2.50	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
408	2.50	2.40	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
409	2.40	2.30	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
410	2.30	2.20	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
411	2.20	2.10	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
412	2.10	2.00	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
413	2.00	1.90	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
414	1.90	1.80	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
415	1.80	1.70	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
416	1.70	1.60	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
417	1.60	1.50	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
418	1.50	1.40	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
419	1.40	1.30	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
420	1.30	1.20	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
421	1.20	1.10	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
422	1.10	1.00	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
423	1.00	0.90	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
424	0.90	0.80	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
425	0.80	0.70	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
426	0.70	0.60	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
427	0.60	0.50	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
428	0.50	0.40	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
429	0.40	0.30	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
430	0.30	0.20	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
431	0.20	0.10	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
432	0.10	0.00	0.05600	0.0	0.00007	17.30	4.00	209.31	83724.00	20931.00	837.24	0.00	0.000	0.650	0.000
TOT						605.64			2930340.00	732585.00					
AVG					0.0001		4.00	209.31			837.24				
CUM						13606.53									

********** BIOLOGICAL AND PHYSICAL COEFFICIENTS **********

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
398	3.400	6.74	0.27	0.55	0.00	0.00	0.00	0.00	0.00	4.38	4.38	4.38	0.03	0.00	0.27	0.00	0.00	0.00	2.57	0.00	0.00	0.00	0.00
399	3.300	6.74	0.27	0.55	0.00	0.00	0.00	0.00	0.00	4.36	4.36	4.36	0.03	0.00	0.27	0.00	0.00	0.00	2.56	0.00	0.00	0.00	0.00
400	3.200	6.74	0.27	0.54	0.00	0.00	0.00	0.00	0.00	4.35	4.35	4.35	0.03	0.00	0.27	0.00	0.00	0.00	2.54	0.00	0.00	0.00	0.00
401	3.100	6.74	0.27	0.54	0.00	0.00	0.00	0.00	0.00	4.34	4.34	4.34	0.03	0.00	0.27	0.00	0.00	0.00	2.53	0.00	0.00	0.00	0.00
402	3.000	6.74	0.27	0.54	0.00	0.00	0.00	0.00	0.00	4.33	4.33	4.33	0.03	0.00	0.27	0.00	0.00	0.00	2.52	0.00	0.00	0.00	0.00
403	2.900	6.74	0.27	0.54	0.00	0.00	0.00	0.00	0.00	4.32	4.32	4.32	0.03	0.00	0.27	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00
404	2.800	6.74	0.27	0.54	0.00	0.00	0.00	0.00	0.00	4.30	4.30	4.30	0.03	0.00	0.27	0.00	0.00	0.00	2.49	0.00	0.00	0.00	0.00
405	2.700	6.73	0.27	0.54	0.00	0.00	0.00	0.00	0.00	4.29	4.29	4.29	0.03	0.00	0.27	0.00	0.00	0.00	2.48	0.00	0.00	0.00	0.00
406	2.600	6.73	0.27	0.54	0.00	0.00	0.00	0.00	0.00	4.28	4.28	4.28	0.03	0.00	0.27	0.00	0.00	0.00	2.47	0.00	0.00	0.00	0.00
407	2.500	6.73	0.27	0.54	0.00	0.00	0.00	0.00	0.00	4.27	4.27	4.27	0.02	0.00	0.27	0.00	0.00	0.00	2.46	0.00	0.00	0.00	0.00
408	2.400	6.73	0.27	0.54	0.00	0.00	0.00	0.00	0.00	4.26	4.26	4.26	0.02	0.00	0.27	0.00	0.00	0.00	2.44	0.00	0.00	0.00	0.00
409	2.300	6.73	0.27	0.53	0.00	0.00	0.00	0.00	0.00	4.25	4.25	4.25	0.02	0.00	0.27	0.00	0.00	0.00	2.43	0.00	0.00	0.00	0.00
410	2.200	6.73	0.27	0.53	0.00	0.00	0.00	0.00	0.00	4.23	4.23	4.23	0.02	0.00	0.26	0.00	0.00	0.00	2.42	0.00	0.00	0.00	0.00
411	2.100	6.73	0.27	0.53	0.00	0.00	0.00	0.00	0.00	4.22	4.22	4.22	0.02	0.00	0.26	0.00	0.00	0.00	2.41	0.00	0.00	0.00	0.00
412	2.000	6.73	0.27	0.53	0.00	0.00	0.00	0.00	0.00	4.21	4.21	4.21	0.02	0.00	0.26	0.00	0.00	0.00	2.39	0.00	0.00	0.00	0.00
413	1.900	6.73	0.27	0.53	0.00	0.00	0.00	0.00	0.00	4.20	4.20	4.20	0.02	0.00	0.26	0.00	0.00	0.00	2.38	0.00	0.00	0.00	0.00
414	1.800	6.73	0.27	0.53	0.00	0.00	0.00	0.00	0.00	4.19	4.19	4.19	0.02	0.00	0.26	0.00	0.00	0.00	2.37	0.00	0.00	0.00	0.00
415	1.700	6.73	0.27	0.53	0.00	0.00	0.00	0.00	0.00	4.18	4.18	4.18	0.02	0.00	0.26	0.00	0.00	0.00	2.36	0.00	0.00	0.00	0.00
416	1.600	6.73	0.27	0.53	0.00	0.00	0.00	0.00	0.00	4.16	4.16	4.16	0.02	0.00	0.26	0.00	0.00	0.00	2.35	0.00	0.00	0.00	0.00
417	1.500	6.73	0.27	0.53	0.00	0.00	0.00	0.00	0.00	4.15	4.15	4.15	0.02	0.00	0.26	0.00	0.00	0.00	2.33	0.00	0.00	0.00	0.00
418	1.400	6.73	0.27	0.53	0.00	0.00	0.00	0.00	0.00	4.14	4.14	4.14	0.02	0.00	0.26	0.00	0.00	0.00	2.32	0.00	0.00	0.00	0.00
419	1.300	6.73	0.27	0.52	0.00	0.00	0.00	0.00	0.00	4.13	4.13	4.13	0.02	0.00	0.26	0.00	0.00	0.00	2.31	0.00	0.00	0.00	0.00
420	1.200	6.72	0.27	0.52	0.00	0.00	0.00	0.00	0.00	4.12	4.12	4.12	0.02	0.00	0.25	0.00	0.00	0.00	2.30	0.00	0.00	0.00	0.00
421	1.100	6.72	0.27	0.52	0.00	0.00	0.00	0.00	0.00	4.11	4.11	4.11	0.02	0.00	0.25	0.00	0.00	0.00	2.29	0.00	0.00	0.00	0.00
422	1.000	6.72	0.27	0.52	0.00	0.00	0.00	0.00	0.00	4.10	4.10	4.10	0.02	0.00	0.25	0.00	0.00	0.00	2.27	0.00	0.00	0.00	0.00
423	0.900	6.72	0.27	0.52	0.00	0.00	0.00	0.00	0.00	4.09	4.09	4.09	0.02	0.00	0.25	0.00	0.00	0.00	2.26	0.00	0.00	0.00	0.00
424	0.800	6.72	0.27	0.52	0.00	0.00	0.00	0.00	0.00	4.07	4.07	4.07	0.02	0.00	0.25	0.00	0.00	0.00	2.25	0.00	0.00	0.00	0.00
425	0.700	6.72	0.27	0.52	0.00	0.00	0.00	0.00	0.00	4.06	4.06	4.06	0.02	0.00	0.25	0.00	0.00	0.00	2.24	0.00	0.00	0.00	0.00
426	0.600	6.72	0.27	0.52	0.00	0.00	0.00	0.00	0.00	4.05	4.05	4.05	0.02	0.00	0.25	0.00	0.00	0.00	2.23	0.00	0.00	0.00	0.00
427	0.500	6.71	0.27	0.52	0.00	0.00	0.00	0.00	0.00	4.04	4.04	4.04	0.02	0.00	0.25	0.00	0.00	0.00	2.22	0.00	0.00	0.00	0.00
428	0.400	6.71	0.27	0.51	0.00	0.00	0.00	0.00	0.00	4.03	4.03	4.03	0.02	0.00	0.25	0.00	0.00	0.00	2.20	0.00	0.00	0.00	0.00
429	0.300	6.71	0.27	0.51	0.00	0.00	0.00	0.00	0.00	4.02	4.02	4.02	0.02	0.00	0.25	0.00	0.00	0.00	2.19	0.00	0.00	0.00	0.00
430	0.200	6.71	0.27	0.51	0.00	0.00	0.00	0.00	0.00	4.01	4.01	4.01	0.02	0.00	0.25	0.00	0.00	0.00	2.18	0.00	0.00	0.00	0.00
431	0.100	6.71	0.27	0.51	0.00	0.00	0.00	0.00	0.00	4.00	4.00	4.00	0.02	0.00	0.25	0.00	0.00	0.00	2.17	0.00	0.00	0.00	0.00
432	0.000	6.71	0.27	0.51	0.00	0.00	0.00	0.00	0.00	3.99	3.99	3.99	0.02	0.00	0.25	0.00	0.00	0.00	2.16	0.00	0.00	0.00	0.00
AVG 20 DEG C RATE			0.22	0.32	0.00	0.00	0.00	0.00	0.00	2.10			0.02	0.00	0.13	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

********** WATER QUALITY CONSTITUENT VALUES **********

ELEM	ENDING	TEMP	SALN	Sp Cond	CM-II	DO	BOD#1	BOD#2	EBOD#1	EBOD#2	ORGN	NH3	NO3+2	TOTN	PHOS	CHL A	MACRO	COLI	NCM

NO.	DIST	DEG C	PPT	umhos/cm		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	g/m³	#/100mL	
398	3.400	31.66	16.00	25509.47	0.00	5.89	2.52	0.00	5.41	0.00	1.33	0.12	0.00	1.46	0.00	57.83	0.00	0.	0.00
399	3.300	31.61	16.13	25713.44	0.00	6.00	2.52	0.00	5.40	0.00	1.33	0.12	0.00	1.45	0.00	57.66	0.00	0.	0.00
400	3.200	31.57	16.26	25919.51	0.00	6.08	2.52	0.00	5.39	0.00	1.32	0.12	0.00	1.44	0.00	57.49	0.00	0.	0.00
401	3.100	31.53	16.39	26127.70	0.00	6.13	2.52	0.00	5.39	0.00	1.31	0.12	0.00	1.43	0.00	57.31	0.00	0.	0.00
402	3.000	31.48	16.53	26338.02	0.00	6.17	2.52	0.00	5.38	0.00	1.30	0.12	0.00	1.42	0.00	57.14	0.00	0.	0.00
403	2.900	31.44	16.66	26550.51	0.00	6.20	2.53	0.00	5.37	0.00	1.30	0.12	0.00	1.42	0.00	56.97	0.00	0.	0.00
404	2.800	31.40	16.80	26765.19	0.00	6.22	2.53	0.00	5.37	0.00	1.29	0.12	0.00	1.41	0.00	56.80	0.00	0.	0.00
405	2.700	31.35	16.94	26982.06	0.00	6.22	2.53	0.00	5.37	0.00	1.28	0.12	0.00	1.40	0.00	56.63	0.00	0.	0.00
406	2.600	31.31	17.08	27201.17	0.00	6.22	2.54	0.00	5.36	0.00	1.27	0.12	0.00	1.39	0.00	56.46	0.00	0.	0.00
407	2.500	31.26	17.22	27422.54	0.00	6.22	2.54	0.00	5.36	0.00	1.26	0.12	0.00	1.38	0.00	56.29	0.00	0.	0.00
408	2.400	31.22	17.36	27646.17	0.00	6.21	2.55	0.00	5.35	0.00	1.25	0.12	0.00	1.37	0.00	56.11	0.00	0.	0.00
409	2.300	31.18	17.50	27872.11	0.00	6.19	2.55	0.00	5.35	0.00	1.24	0.12	0.00	1.36	0.00	55.94	0.00	0.	0.00
410	2.200	31.13	17.65	28100.37	0.00	6.17	2.56	0.00	5.35	0.00	1.23	0.11	0.00	1.34	0.00	55.77	0.00	0.	0.00
411	2.100	31.09	17.80	28330.97	0.00	6.15	2.56	0.00	5.34	0.00	1.22	0.11	0.00	1.33	0.00	55.60	0.00	0.	0.00
412	2.000	31.05	17.95	28563.94	0.00	6.13	2.57	0.00	5.34	0.00	1.20	0.11	0.00	1.32	0.00	55.43	0.00	0.	0.00
413	1.900	31.00	18.10	28799.31	0.00	6.10	2.58	0.00	5.34	0.00	1.19	0.11	0.00	1.30	0.00	55.26	0.00	0.	0.00
414	1.800	30.96	18.25	29037.10	0.00	6.08	2.58	0.00	5.34	0.00	1.18	0.11	0.00	1.29	0.00	55.09	0.00	0.	0.00
415	1.700	30.92	18.40	29277.33	0.00	6.05	2.59	0.00	5.33	0.00	1.16	0.11	0.00	1.27	0.00	54.91	0.00	0.	0.00
416	1.600	30.87	18.55	29520.04	0.00	6.02	2.59	0.00	5.33	0.00	1.14	0.11	0.00	1.25	0.00	54.74	0.00	0.	0.00
417	1.500	30.83	18.71	29765.23	0.00	5.99	2.60	0.00	5.33	0.00	1.13	0.11	0.00	1.23	0.00	54.57	0.00	0.	0.00
418	1.400	30.78	18.87	30012.95	0.00	5.96	2.61	0.00	5.33	0.00	1.11	0.11	0.00	1.21	0.00	54.40	0.00	0.	0.00
419	1.300	30.74	19.03	30263.21	0.00	5.92	2.62	0.00	5.33	0.00	1.09	0.10	0.00	1.19	0.00	54.23	0.00	0.	0.00
420	1.200	30.70	19.19	30516.05	0.00	5.89	2.63	0.00	5.33	0.00	1.06	0.10	0.00	1.17	0.00	54.06	0.00	0.	0.00
421	1.100	30.65	19.35	30771.48	0.00	5.85	2.64	0.00	5.34	0.00	1.04	0.10	0.00	1.14	0.00	53.89	0.00	0.	0.00
422	1.000	30.61	19.52	31029.54	0.00	5.82	2.66	0.00	5.34	0.00	1.01	0.10	0.00	1.11	0.00	53.71	0.00	0.	0.00
423	0.900	30.57	19.68	31290.25	0.00	5.78	2.68	0.00	5.36	0.00	0.99	0.10	0.00	1.09	0.00	53.54	0.00	0.	0.00
424	0.800	30.52	19.85	31553.64	0.00	5.75	2.70	0.00	5.37	0.00	0.96	0.10	0.00	1.05	0.00	53.37	0.00	0.	0.00
425	0.700	30.48	20.02	31819.74	0.00	5.72	2.73	0.00	5.39	0.00	0.93	0.10	0.00	1.02	0.00	53.20	0.00	0.	0.00
426	0.600	30.44	20.19	32088.57	0.00	5.69	2.78	0.00	5.43	0.00	0.89	0.09	0.00	0.99	0.00	53.03	0.00	0.	0.00
427	0.500	30.39	20.37	32360.16	0.00	5.67	2.83	0.00	5.47	0.00	0.86	0.09	0.00	0.95	0.00	52.86	0.00	0.	0.00
428	0.400	30.35	20.54	32634.55	0.00	5.66	2.90	0.00	5.53	0.00	0.82	0.09	0.00	0.91	0.00	52.69	0.00	0.	0.00
429	0.300	30.31	20.72	32911.76	0.00	5.68	2.99	0.00	5.62	0.00	0.77	0.09	0.00	0.87	0.00	52.51	0.00	0.	0.00
430	0.200	30.26	20.90	33191.82	0.00	5.72	3.12	0.00	5.74	0.00	0.73	0.09	0.00	0.82	0.00	52.34	0.00	0.	0.00
431	0.100	30.22	21.08	33474.76	0.00	5.82	3.29	0.00	5.90	0.00	0.68	0.10	0.00	0.78	0.00	52.17	0.00	0.	0.00
432	0.000	30.17	21.26	33760.61	0.00	5.98	3.52	0.00	6.12	0.00	0.63	0.10	0.00	0.73	0.00	52.00	0.00	0.	0.00

STREAM SUMMARY
Bayou de Cade

LA-QUAL model for Lost Lake and Four League Bay (120708)
Calibration to FTN field survey (July 2006)

TRAVEL TIME = 13606.53 DAYS

MAXIMUM EFFLUENT = 0.00 PERCENT

FLOW	=	0.02800	TO	0.05600	m^3/s
DISPERSION	=	0.3000	TO	0.6500	m^2/s
VELOCITY	=	0.00001	TO	0.00007	m/s
DEPTH	=	0.75	TO	4.00	m
WIDTH	=	209.31	TO	******	m

BOD DECAY	=	0.51	TO	0.55	per day
NH3 DECAY	=	0.25	TO	0.28	per day
SOD	=	0.50	TO	6.41	g/m²/d
NH3 SOURCE	=	0.00	TO	0.00	g/m²/d
REAERATION	=	0.27	TO	1.46	per day
BOD SETTLING	=	0.00	TO	0.00	per day
ORG-N DECAY	=	0.02	TO	0.03	per day
ORG-N SETTLING	=	0.00	TO	0.00	per day
TEMPERATURE	=	30.17	TO	31.99	deg C
DISSOLVED OXYGEN	=	4.33	TO	6.33	mg/L

FINAL REPORT Atchafalaya Bay — LA-QUAL model for Lost Lake and Four League Bay (120708)
REACH NO. 4 Four League Bay (North) — Calibration to FTN field survey (July 2006)

********** REACH INPUTS **********

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	Sp Cond umhos/cm	CM-II	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
183	HDWTR	0.02800	24.50	1.95	3058.00	0.00	7.80	3.11	0.00	6.01	0.00	0.57	0.10	0.00	0.00	58.00	0.00	0.00

********** HYDRAULIC PARAMETER VALUES **********

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
183	15.00	14.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
184	14.90	14.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
185	14.80	14.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
186	14.70	14.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
187	14.60	14.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
188	14.50	14.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
189	14.40	14.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
190	14.30	14.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
191	14.20	14.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
192	14.10	14.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
193	14.00	13.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
194	13.90	13.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
195	13.80	13.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
196	13.70	13.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
197	13.60	13.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
198	13.50	13.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
199	13.40	13.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
200	13.30	13.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
201	13.20	13.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000

202	13.10	13.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
203	13.00	12.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
204	12.90	12.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
205	12.80	12.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
206	12.70	12.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
207	12.60	12.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
208	12.50	12.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
209	12.40	12.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
210	12.30	12.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
211	12.20	12.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
212	12.10	12.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
213	12.00	11.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
214	11.90	11.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
215	11.80	11.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
216	11.70	11.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
217	11.60	11.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
218	11.50	11.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
219	11.40	11.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
220	11.30	11.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
221	11.20	11.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
222	11.10	11.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
223	11.00	10.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
224	10.90	10.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
225	10.80	10.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
226	10.70	10.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
227	10.60	10.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
228	10.50	10.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
229	10.40	10.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
230	10.30	10.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
231	10.20	10.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
232	10.10	10.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
233	10.00	9.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
234	9.90	9.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
235	9.80	9.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
236	9.70	9.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
237	9.60	9.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
238	9.50	9.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
239	9.40	9.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
240	9.30	9.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
241	9.20	9.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
242	9.10	9.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
243	9.00	8.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
244	8.90	8.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
245	8.80	8.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
246	8.70	8.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
247	8.60	8.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
248	8.50	8.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
249	8.40	8.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
250	8.30	8.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
251	8.20	8.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
252	8.10	8.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000

253	8.00	7.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
254	7.90	7.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
255	7.80	7.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
256	7.70	7.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
257	7.60	7.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
258	7.50	7.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
259	7.40	7.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
260	7.30	7.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
261	7.20	7.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
262	7.10	7.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
263	7.00	6.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
264	6.90	6.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
265	6.80	6.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
266	6.70	6.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
267	6.60	6.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
268	6.50	6.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
269	6.40	6.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
270	6.30	6.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
271	6.20	6.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
272	6.10	6.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
273	6.00	5.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
274	5.90	5.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
275	5.80	5.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
276	5.70	5.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
277	5.60	5.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
278	5.50	5.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
279	5.40	5.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
280	5.30	5.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
281	5.20	5.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
282	5.10	5.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
283	5.00	4.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
284	4.90	4.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
285	4.80	4.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
286	4.70	4.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
287	4.60	4.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
288	4.50	4.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
289	4.40	4.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
290	4.30	4.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
291	4.20	4.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
292	4.10	4.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
293	4.00	3.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
294	3.90	3.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
295	3.80	3.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
296	3.70	3.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
297	3.60	3.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
298	3.50	3.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
299	3.40	3.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
300	3.30	3.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
301	3.20	3.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
302	3.10	3.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
303	3.00	2.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000

304	2.90	2.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
305	2.80	2.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
306	2.70	2.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
307	2.60	2.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
308	2.50	2.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
309	2.40	2.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
310	2.30	2.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
311	2.20	2.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
312	2.10	2.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
313	2.00	1.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
314	1.90	1.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
315	1.80	1.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
316	1.70	1.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
317	1.60	1.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
318	1.50	1.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
319	1.40	1.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
320	1.30	1.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
321	1.20	1.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
322	1.10	1.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
323	1.00	0.90	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
324	0.90	0.80	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
325	0.80	0.70	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
326	0.70	0.60	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
327	0.60	0.50	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
328	0.50	0.40	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
329	0.40	0.30	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
330	0.30	0.20	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
331	0.20	0.10	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
332	0.10	0.00	0.02800	0.0	0.00001	220.31	1.24	4298.26	532984.25	429825.97	5329.84	0.00	0.000	0.450	0.000
TOT						33047.16			79947608.00	64473756.00					
AVG					0.0000		1.24	4298.25			5329.83				
CUM						33047.16									

********** BIOLOGICAL AND PHYSICAL COEFFICIENTS **********

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
183	14.900	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
184	14.800	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
185	14.700	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
186	14.600	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
187	14.500	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
188	14.400	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
189	14.300	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
190	14.200	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
191	14.100	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
192	14.000	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00

193	13.900	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
194	13.800	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
195	13.700	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
196	13.600	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
197	13.500	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
198	13.400	6.99	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
199	13.300	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
200	13.200	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
201	13.100	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
202	13.000	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
203	12.900	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
204	12.800	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
205	12.700	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
206	12.600	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
207	12.500	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
208	12.400	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
209	12.300	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
210	12.200	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
211	12.100	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
212	12.000	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
213	11.900	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
214	11.800	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
215	11.700	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
216	11.600	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
217	11.500	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
218	11.400	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
219	11.300	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
220	11.200	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
221	11.100	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
222	11.000	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
223	10.900	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
224	10.800	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
225	10.700	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
226	10.600	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
227	10.500	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
228	10.400	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
229	10.300	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
230	10.200	6.98	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
231	10.100	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
232	10.000	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
233	9.900	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
234	9.800	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
235	9.700	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
236	9.600	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
237	9.500	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
238	9.400	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
239	9.300	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
240	9.200	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
241	9.100	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
242	9.000	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
243	8.900	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00

244	8.800	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
245	8.700	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
246	8.600	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
247	8.500	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
248	8.400	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
249	8.300	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
250	8.200	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
251	8.100	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
252	8.000	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
253	7.900	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
254	7.800	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
255	7.700	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
256	7.600	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
257	7.500	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
258	7.400	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
259	7.300	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
260	7.200	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
261	7.100	6.97	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
262	7.000	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
263	6.900	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
264	6.800	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
265	6.700	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
266	6.600	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
267	6.500	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
268	6.400	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
269	6.300	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
270	6.200	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
271	6.100	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
272	6.000	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
273	5.900	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
274	5.800	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
275	5.700	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
276	5.600	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
277	5.500	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
278	5.400	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
279	5.300	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
280	5.200	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
281	5.100	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
282	5.000	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
283	4.900	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
284	4.800	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
285	4.700	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
286	4.600	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
287	4.500	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
288	4.400	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
289	4.300	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
290	4.200	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
291	4.100	6.96	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
292	4.000	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
293	3.900	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
294	3.800	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00

295	3.700	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
296	3.600	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
297	3.500	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
298	3.400	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
299	3.300	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
300	3.200	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
301	3.100	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
302	3.000	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
303	2.900	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
304	2.800	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
305	2.700	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
306	2.600	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
307	2.500	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
308	2.400	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
309	2.300	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
310	2.200	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
311	2.100	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
312	2.000	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
313	1.900	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
314	1.800	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
315	1.700	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
316	1.600	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
317	1.500	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
318	1.400	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
319	1.300	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
320	1.200	6.95	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
321	1.100	6.94	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
322	1.000	6.94	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
323	0.900	6.94	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
324	0.800	6.94	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
325	0.700	6.94	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
326	0.600	6.94	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
327	0.500	6.94	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
328	0.400	6.94	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
329	0.300	6.94	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
330	0.200	6.94	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
331	0.100	6.94	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
332	0.000	6.94	0.89	0.55	0.00	0.00	0.00	0.00	0.00	1.11	1.11	1.11	0.03	0.00	0.28	0.00	0.00	0.00	2.59	0.00	0.00	0.00	0.00
AVG 20 DEG C RATE			0.72	0.32	0.00	0.00	0.00	0.00	0.00	0.53			0.02	0.00	0.13	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

********** WATER QUALITY CONSTITUENT VALUES **********

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	Sp Cond umhos/cm	CM-II	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
183	14.900	31.80	8.75	13968.24	0.00	6.99	2.84	0.00	5.74	0.00	1.18	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
184	14.800	31.80	8.75	13980.97	0.00	6.99	2.84	0.00	5.74	0.00	1.18	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00

185	14.700	31.80	8.76	13993.73	0.00	6.99	2.84	0.00	5.74	0.00	1.18	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
186	14.600	31.80	8.77	14006.49	0.00	6.99	2.84	0.00	5.74	0.00	1.18	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
187	14.500	31.80	8.78	14019.27	0.00	6.99	2.84	0.00	5.74	0.00	1.18	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
188	14.400	31.80	8.79	14032.07	0.00	6.99	2.84	0.00	5.74	0.00	1.18	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
189	14.300	31.80	8.79	14044.88	0.00	6.99	2.84	0.00	5.74	0.00	1.18	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
190	14.200	31.80	8.80	14057.71	0.00	6.99	2.84	0.00	5.74	0.00	1.18	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
191	14.100	31.80	8.81	14070.55	0.00	6.99	2.84	0.00	5.74	0.00	1.18	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
192	14.000	31.80	8.82	14083.41	0.00	6.99	2.84	0.00	5.74	0.00	1.18	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
193	13.900	31.80	8.83	14096.28	0.00	6.99	2.84	0.00	5.74	0.00	1.18	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
194	13.800	31.80	8.83	14109.16	0.00	6.99	2.84	0.00	5.74	0.00	1.18	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
195	13.700	31.80	8.84	14122.06	0.00	6.99	2.84	0.00	5.74	0.00	1.18	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
196	13.600	31.80	8.85	14134.98	0.00	6.99	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
197	13.500	31.80	8.86	14147.91	0.00	6.99	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
198	13.400	31.80	8.87	14160.86	0.00	6.99	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
199	13.300	31.80	8.87	14173.82	0.00	6.99	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
200	13.200	31.80	8.88	14186.80	0.00	6.99	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
201	13.100	31.80	8.89	14199.79	0.00	6.99	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
202	13.000	31.80	8.90	14212.79	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
203	12.900	31.80	8.91	14225.82	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
204	12.800	31.80	8.91	14238.85	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
205	12.700	31.80	8.92	14251.91	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
206	12.600	31.80	8.93	14264.97	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
207	12.500	31.80	8.94	14278.06	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
208	12.400	31.80	8.95	14291.16	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
209	12.300	31.80	8.96	14304.27	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
210	12.200	31.80	8.96	14317.40	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
211	12.100	31.80	8.97	14330.54	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
212	12.000	31.80	8.98	14343.70	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
213	11.900	31.80	8.99	14356.88	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
214	11.800	31.80	9.00	14370.07	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
215	11.700	31.80	9.00	14383.27	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
216	11.600	31.80	9.01	14396.49	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
217	11.500	31.80	9.02	14409.73	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
218	11.400	31.80	9.03	14422.98	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
219	11.300	31.80	9.04	14436.25	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
220	11.200	31.80	9.05	14449.53	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
221	11.100	31.80	9.05	14462.83	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
222	11.000	31.80	9.06	14476.15	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
223	10.900	31.80	9.07	14489.48	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
224	10.800	31.80	9.08	14502.82	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
225	10.700	31.80	9.09	14516.18	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
226	10.600	31.80	9.10	14529.56	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
227	10.500	31.80	9.10	14542.95	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
228	10.400	31.80	9.11	14556.36	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
229	10.300	31.80	9.12	14569.78	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
230	10.200	31.80	9.13	14583.22	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
231	10.100	31.80	9.14	14596.67	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
232	10.000	31.80	9.15	14610.14	0.00	6.98	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
233	9.900	31.80	9.15	14623.63	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
234	9.800	31.80	9.16	14637.13	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
235	9.700	31.80	9.17	14650.65	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00

236	9.600	31.80	9.18	14664.18	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
237	9.500	31.80	9.19	14677.73	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
238	9.400	31.80	9.20	14691.29	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
239	9.300	31.80	9.20	14704.88	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
240	9.200	31.80	9.21	14718.47	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
241	9.100	31.80	9.22	14732.08	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
242	9.000	31.80	9.23	14745.71	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
243	8.900	31.80	9.24	14759.36	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
244	8.800	31.80	9.25	14773.02	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
245	8.700	31.80	9.26	14786.69	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
246	8.600	31.80	9.26	14800.38	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
247	8.500	31.80	9.27	14814.09	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
248	8.400	31.80	9.28	14827.82	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
249	8.300	31.80	9.29	14841.56	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
250	8.200	31.80	9.30	14855.31	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
251	8.100	31.80	9.31	14869.08	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
252	8.000	31.80	9.32	14882.87	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
253	7.900	31.80	9.32	14896.68	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
254	7.800	31.80	9.33	14910.50	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
255	7.700	31.80	9.34	14924.33	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
256	7.600	31.80	9.35	14938.19	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
257	7.500	31.80	9.36	14952.06	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
258	7.400	31.80	9.37	14965.94	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
259	7.300	31.80	9.38	14979.84	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
260	7.200	31.80	9.38	14993.76	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
261	7.100	31.80	9.39	15007.69	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
262	7.000	31.80	9.40	15021.64	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
263	6.900	31.80	9.41	15035.61	0.00	6.97	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
264	6.800	31.80	9.42	15049.59	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
265	6.700	31.80	9.43	15063.59	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
266	6.600	31.80	9.44	15077.61	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
267	6.500	31.80	9.45	15091.64	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
268	6.400	31.80	9.45	15105.69	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
269	6.300	31.80	9.46	15119.75	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
270	6.200	31.80	9.47	15133.83	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
271	6.100	31.80	9.48	15147.93	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
272	6.000	31.80	9.49	15162.04	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
273	5.900	31.80	9.50	15176.17	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
274	5.800	31.80	9.51	15190.32	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
275	5.700	31.80	9.52	15204.48	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
276	5.600	31.80	9.52	15218.66	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
277	5.500	31.80	9.53	15232.86	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
278	5.400	31.80	9.54	15247.07	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
279	5.300	31.80	9.55	15261.30	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
280	5.200	31.80	9.56	15275.55	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
281	5.100	31.80	9.57	15289.81	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
282	5.000	31.80	9.58	15304.09	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
283	4.900	31.80	9.59	15318.39	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
284	4.800	31.80	9.60	15332.70	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
285	4.700	31.80	9.60	15347.03	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.29	0.00	58.00	0.00	0.	0.00
286	4.600	31.80	9.61	15361.38	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00

287	4.500	31.80	9.62	15375.74	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
288	4.400	31.80	9.63	15390.12	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
289	4.300	31.80	9.64	15404.51	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
290	4.200	31.80	9.65	15418.93	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
291	4.100	31.80	9.66	15433.36	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
292	4.000	31.80	9.67	15447.80	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
293	3.900	31.80	9.68	15462.27	0.00	6.96	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
294	3.800	31.80	9.69	15476.75	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
295	3.700	31.80	9.69	15491.25	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
296	3.600	31.80	9.70	15505.76	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
297	3.500	31.80	9.71	15520.29	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
298	3.400	31.80	9.72	15534.84	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
299	3.300	31.80	9.73	15549.41	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
300	3.200	31.80	9.74	15563.99	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
301	3.100	31.80	9.75	15578.59	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
302	3.000	31.80	9.76	15593.21	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
303	2.900	31.80	9.77	15607.84	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
304	2.800	31.80	9.78	15622.49	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
305	2.700	31.80	9.79	15637.16	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
306	2.600	31.80	9.79	15651.84	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
307	2.500	31.80	9.80	15666.54	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
308	2.400	31.80	9.81	15681.26	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
309	2.300	31.80	9.82	15696.00	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
310	2.200	31.80	9.83	15710.75	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
311	2.100	31.80	9.84	15725.52	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
312	2.000	31.80	9.85	15740.31	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
313	1.900	31.80	9.86	15755.12	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
314	1.800	31.80	9.87	15769.94	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
315	1.700	31.80	9.88	15784.78	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
316	1.600	31.80	9.89	15799.64	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
317	1.500	31.80	9.90	15814.51	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
318	1.400	31.80	9.90	15829.40	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
319	1.300	31.80	9.91	15844.31	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
320	1.200	31.80	9.92	15859.24	0.00	6.95	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
321	1.100	31.80	9.93	15874.18	0.00	6.94	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
322	1.000	31.80	9.94	15889.15	0.00	6.94	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
323	0.900	31.80	9.95	15904.12	0.00	6.94	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
324	0.800	31.80	9.96	15919.12	0.00	6.94	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
325	0.700	31.80	9.97	15934.13	0.00	6.94	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
326	0.600	31.80	9.98	15949.17	0.00	6.94	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
327	0.500	31.80	9.99	15964.21	0.00	6.94	2.84	0.00	5.74	0.00	1.19	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
328	0.400	31.80	10.00	15979.28	0.00	6.94	2.84	0.00	5.74	0.00	1.20	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
329	0.300	31.80	10.01	15994.37	0.00	6.94	2.84	0.00	5.74	0.00	1.20	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
330	0.200	31.80	10.02	16009.47	0.00	6.94	2.84	0.00	5.74	0.00	1.20	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
331	0.100	31.80	10.03	16024.59	0.00	6.94	2.84	0.00	5.74	0.00	1.20	0.11	0.00	1.30	0.00	58.00	0.00	0.	0.00
332	0.000	31.80	10.04	16039.72	0.00	6.94	2.84	0.00	5.74	0.00	1.20	0.11	0.00	1.31	0.00	58.00	0.00	0.	0.00

```
TRAVEL TIME       =       33047.16 DAYS

MAXIMUM EFFLUENT  =           0.00 PERCENT

FLOW              =   0.02800 TO    0.02800   m³/s
DISPERSION        =   0.4500  TO    0.4500    m²/s
VELOCITY          =   0.00001 TO    0.00001   m/s
DEPTH             =   1.24    TO    1.24      m
WIDTH             = ******    TO  ******      m

BOD DECAY         =    0.55   TO    0.55      per day
NH3 DECAY         =    0.28   TO    0.28      per day
SOD               =    1.11   TO    1.11      g/m²/d
NH3 SOURCE        =    0.00   TO    0.00      g/m²/d
REAERATION        =    0.89   TO    0.89      per day
BOD SETTLING      =    0.00   TO    0.00      per day
ORG-N DECAY       =    0.03   TO    0.03      per day
ORG-N SETTLING    =    0.00   TO    0.00      per day

TEMPERATURE       =   31.80   TO   31.80      deg C
DISSOLVED OXYGEN  =    6.94   TO    6.99      mg/L


     .....EXECUTION COMPLETED
```

APPENDIX L

90th Percentile Temperature Calculations

Table L.1. 90th percentile temperature calculatons for LDEQ Station 955 data.

Station 955 Lost Lake		
Date	Water Temp (C)	Season
1/12/2000	19.20	winter
2/15/2000	20.44	winter
3/15/2000	18.17	winter
4/12/2000	21.07	winter
5/10/2000	26.33	summer
6/7/2000	26.90	summer
7/12/2000	30.51	summer
8/9/2000	32.10	summer
9/6/2000	29.61	summer
10/4/2000	26.22	summer
11/1/2000	24.57	winter
12/6/2000	9.58	winter

Station 338 (Lake Palourde)		
Date	Water Temp (C)	Season
1/18/2000	16.90	winter
2/15/2000	18.90	winter
3/21/2000	18.82	winter
4/17/2000	22.50	winter
5/16/2000	26.64	summer
6/13/2000	27.93	summer
7/18/2000	31.62	summer
8/15/2000	30.30	summer
9/12/2000	27.27	summer
10/10/2000	14.96	summer
11/8/2000	23.12	winter
12/12/2000	13.33	winter

SUMMER

Averages for May through October (LTP definition of summer)

28.61 C 26.45 C

Difference between stations = 2.16 C

90th percentile summer temp for Lake Palourde (from Table X) = 30.70 C

Adjusted 90th percentile temp for Lost Lake = 30.7 C + 2.16 C = 32.86 C

WINTER

Averages for Jan-April and Nov-Dec (LTP definition of winter)

18.84 C 18.93 C

Difference between stations = -0.09 C

90th percentile winter temp for Lake Palourde (from Table X) = 22.55 C

Adjusted 90th percentile temp for Lost Lake = 22.55 C + -0.09 C = 22.46 C

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Table L.2. 90th percentile temperature calculations for Station 338 data.

30.70 C, Summer 90th percentile Calculation
22.55 C, Winter 90th percentile Calculation

Date	Water Temp (C)	Season	Percentile
10/10/2000	14.96	summer	1.56%
10/11/1994	21.80	summer	4.69%
10/13/1992	22.20	summer	7.81%
10/15/1996	22.30	summer	10.94%
10/10/1995	22.70	summer	14.06%
10/14/1997	23.20	summer	17.19%
10/12/1993	23.46	summer	20.31%
10/14/1991	24.80	summer	23.44%
6/13/1995	25.80	summer	26.56%
5/16/2000	26.64	summer	29.69%
6/11/1991	26.90	summer	32.81%
9/12/2000	27.27	summer	35.94%
8/13/1996	27.30	summer	39.06%
6/13/2000	27.93	summer	42.19%
6/10/1997	28.10	summer	45.31%
6/6/2005	28.63	summer	48.44%
8/13/1991	28.70	summer	51.56%
8/11/1992	28.98	summer	54.69%
6/14/1994	29.00	summer	57.81%
6/11/1996	29.10	summer	60.94%
6/27/2005	29.10	summer	64.06%
6/15/1992	29.40	summer	67.19%
8/9/1994	29.40	summer	70.31%
8/15/1995	29.50	summer	73.44%
8/15/2000	30.30	summer	76.56%
5/23/2005	30.30	summer	79.69%
6/15/1993	30.40	summer	82.81%
8/12/1997	30.50	summer	85.94%
8/15/2005	30.59	summer	89.06%
8/10/1993	30.95	summer	92.19%
7/25/2005	31.26	summer	95.31%
7/18/2000	31.62	summer	98.44%

Date	Water Temp (C)	Season	Percentile
1/24/2005	10.03	winter	1.47%
1/18/2005	11.05	winter	4.41%
2/14/1995	11.20	winter	7.35%
12/12/1995	11.40	winter	10.29%
2/13/1996	11.64	winter	13.24%
12/14/1993	11.80	winter	16.18%
2/11/1992	11.98	winter	19.12%
2/9/1993	12.40	winter	22.06%
2/18/1997	12.70	winter	25.00%
12/13/1994	12.90	winter	27.94%
12/12/2000	13.33	winter	30.88%
12/14/1992	13.50	winter	33.82%
2/14/2005	13.65	winter	36.76%
12/9/1997	13.70	winter	39.71%
2/10/1998	13.90	winter	42.65%
3/7/2005	14.61	winter	45.59%
2/5/1991	14.80	winter	48.53%
12/10/1991	16.31	winter	51.47%
2/8/1994	16.60	winter	54.41%
4/15/1997	16.90	winter	57.35%
1/18/2000	16.90	winter	60.29%
4/9/1996	17.10	winter	63.24%
4/7/1992	18.60	winter	66.18%
3/28/2005	18.60	winter	69.12%
4/4/1995	18.70	winter	72.06%
3/21/2000	18.82	winter	75.00%
2/15/2000	18.90	winter	77.94%
4/18/2005	20.90	winter	80.88%
4/13/1993	21.10	winter	83.82%
4/14/1998	21.50	winter	86.76%
4/17/2000	22.50	winter	89.71%
4/12/1994	23.00	winter	92.65%
11/8/2000	23.12	winter	95.59%
4/16/1991	24.10	winter	98.53%

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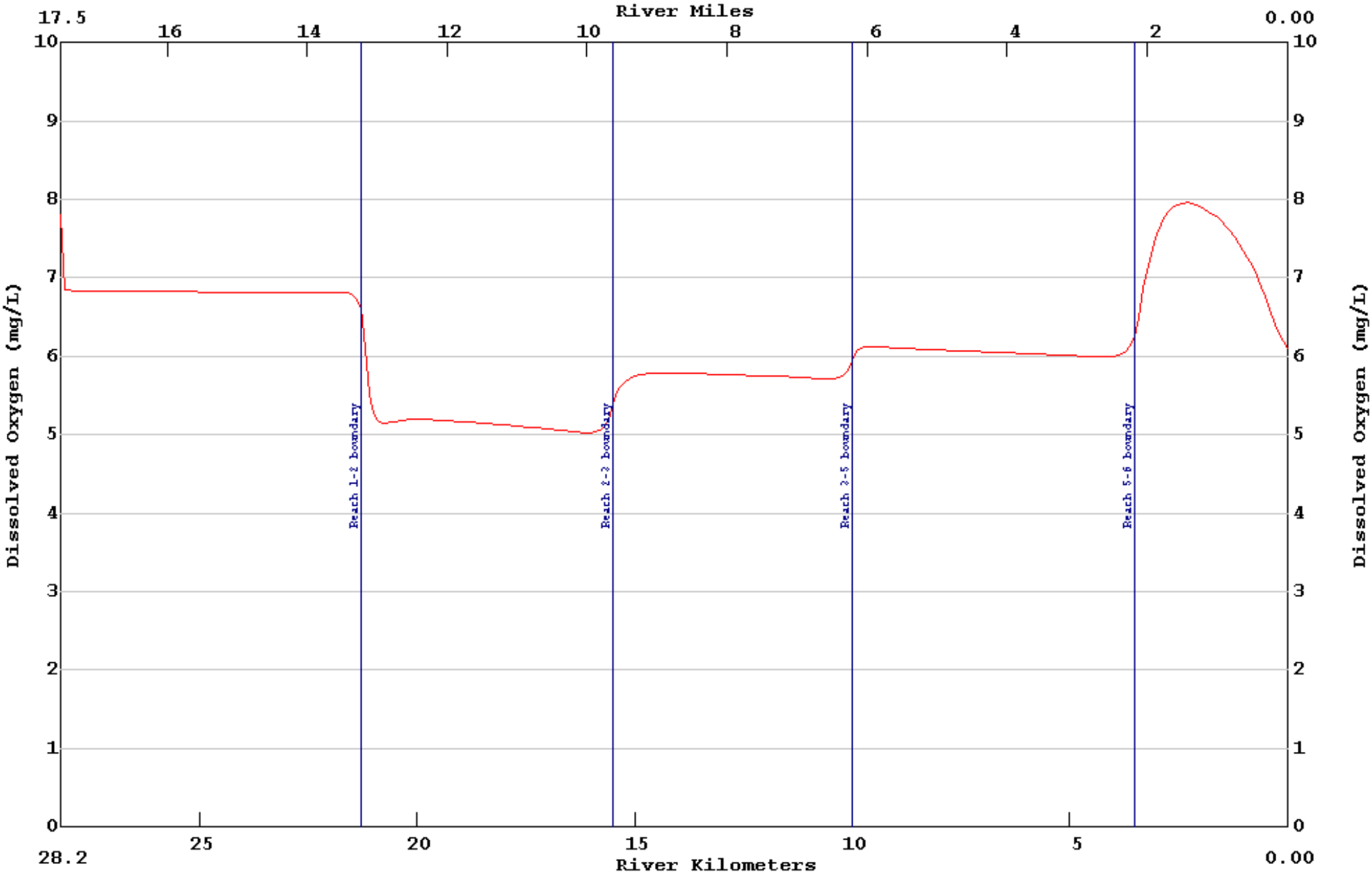
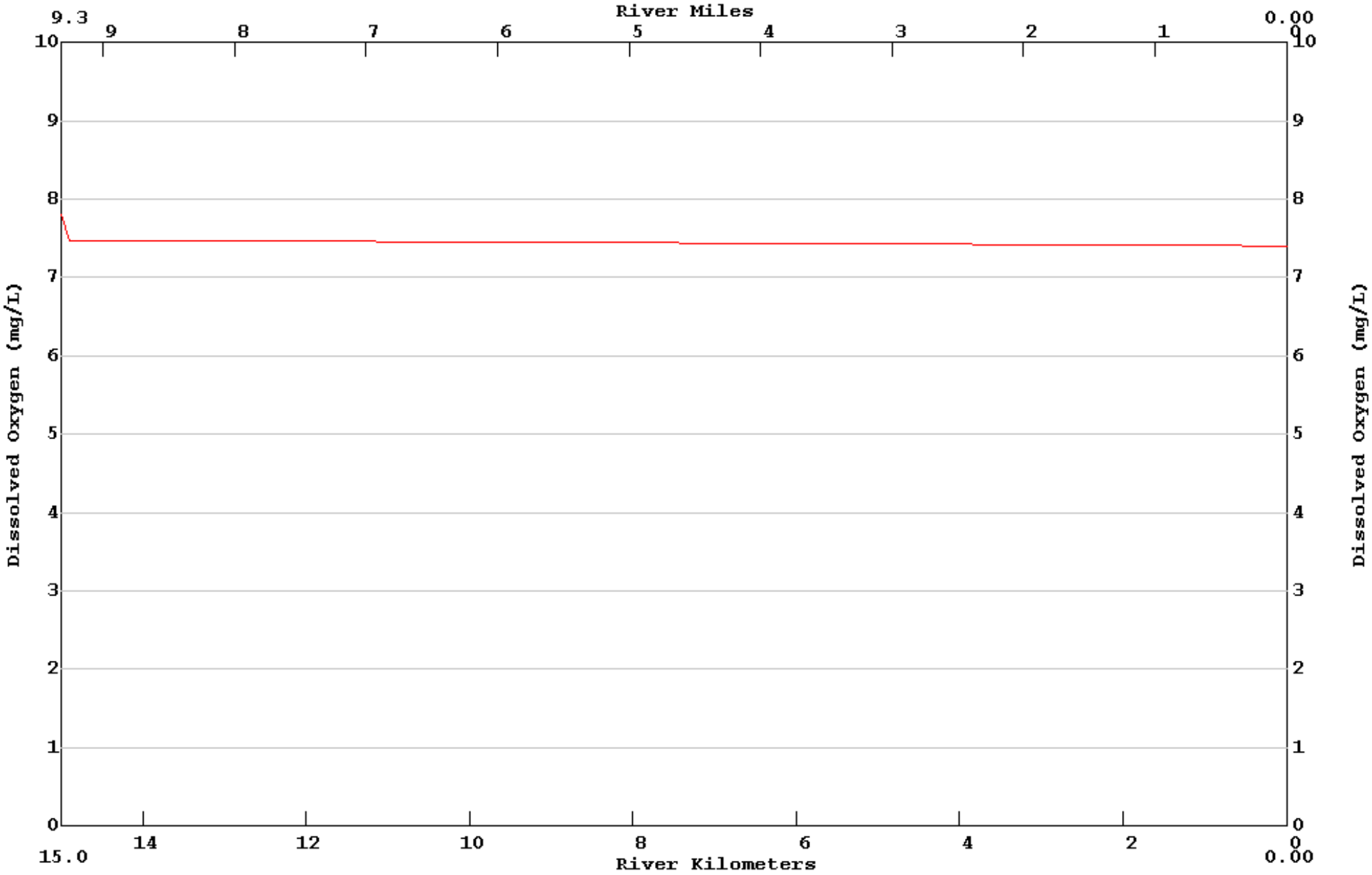
APPENDIX M

Model Output for Projection Simulations

LA-QUAL Version 8.11 Run at 18:21 on 10/17/2007 File D:\comp_models\LA-QUAL_8p11\lofosum.txt
Summer Projection min= 5.03 max= 7.96
:Lost Lake to Gulf of Mexcio



LA-QUAL Version 8.11 Run at 18:21 on 10/17/2007 File D:\comp_models\LA-QUAL_8p11\lofosum.txt
Summer Projection min= 7.40 max= 7.80
:Four League Bay to Blue Hammock Bayou



```
LA-QUAL Version 8.11
Louisiana Department of Environmental Quality

Input file is D:\laqual\lofosum.txt
Output produced at 14:13 on 03/12/2008

$$$ DATA TYPE 1 (TITLES AND CONTROL CARDS) $$$

CARD TYPE       CONTROL TITLES

TITLE01         LA-QUAL model for Lost Lake and Four League Bay (120708)
TITLE02         Summer Projection
CNTROL03   NO   SEQU                        <Warning: legacy control - line ignored>
CNTROL04  YES   METR
CNTROL05  YES   OXYG                        <Warning: legacy control - line ignored>
ENDATA01

$$$ DATA TYPE 2 (MODEL OPTIONS) $$$

CARD TYPE       MODEL OPTION

MODOPT01   NO   TEMP
MODOPT02  YES   SALI
MODOPT03  YES   CONSERVATIVE MATERIAL  I = Specific Conductivity      IN umhos/cm Sp Cond
MODOPT04   NO   CONSERVATIVE MATERIAL II
MODOPT05  YES   DISS
MODOPT06  YES   BIOC
MODOPT07  YES   NITR
MODOPT08   NO   PHOS
MODOPT09   NO   CHLO
MODOPT10   NO   MACR
MODOPT11   NO   COLI
MODOPT12   NO   NONC
ENDATA02

$$$ DATA TYPE 3 (PROGRAM CONSTANTS) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                       VALUE

PROGRAM         HYDRAULIC CALCULATION METHOD       =         2.00000 (widths and depths)
PROGRAM         MAXIMUM ITERATION LIMIT            =       500.00000
PROGRAM         ALGAE OXYGEN PROD                  =         0.02600 mg O/ug chl a/day
PROGRAM         EFFECTIVE BOD DUE TO ALGAE         =         0.05000 mg/L BOD per ug/L chl a
PROGRAM         HEADWATER EXCHANGE RATIO           =         1.00000
ENDATA03

$$$ DATA TYPE 4 (TEMPERATURE CORRECTION CONSTANTS FOR RATE COEFFICIENTS) $$$

 CARD TYPE     RATE CODE     THETA VALUE
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THETA        NH3 DECA       1.07000
ENDATA04

$$$ CONSTANTS TYPE 5 (TEMPERATURE DATA) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                          VALUE

ENDATA05

$$$ DATA TYPE 6 (ALGAE CONSTANTS) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                          VALUE

ENDATA06

$$$ DATA TYPE 7 (MACROPHYTE CONSTANTS) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                          VALUE

ENDATA07

$$$ DATA TYPE 8 (REACH IDENTIFICATION DATA) $$$
                                                          BEGIN          END      ELEM     REACH     ELEMS   BEGIN     END
CARD TYPE  REACH  ID  NAME                                REACH          REACH    LENGTH   LENGTH    PER RCH ELEM      ELEM
                                                             km            km       km       km                NUM       NUM

REACH ID      1   LL   Lost Lake                          28.20  TO    21.30   0.1000     6.90      69        1        69
REACH ID      2   LL   Lost Lake Pass                     21.30  TO    15.50   0.1000     5.80      58       70       127
REACH ID      3   BH   Blue Hammock Bayou                 15.50  TO    10.00   0.1000     5.50      55      128       182
REACH ID      4   FL   Four League Bay (North)            15.00  TO     0.00   0.1000    15.00     150      183       332
REACH ID      5   FL   Four League Bay (South)            10.00  TO     3.50   0.1000     6.50      65      333       397
REACH ID      6   OB   Oyster Bayou                        3.50  TO     0.00   0.1000     3.50      35      398       432
ENDATA08

$$$ DATA TYPE 9 (ADVECTIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE  REACH  ID       WIDTH       WIDTH       WIDTH       DEPTH       DEPTH       DEPTH      SLOPE    MANNINGS
                             "A"         "B"         "C"         "D"         "E"         "F"                   "N"

HYDR-1        1   LL       0.000       0.000    2556.160       0.000       0.000       0.850    0.00000   0.000
HYDR-1        2   LL       0.000       0.000     547.790       0.000       0.000       0.760    0.00000   0.000
HYDR-1        3   BH       0.000       0.000     546.580       0.000       0.000       2.260    0.00000   0.000
HYDR-1        4   FL       0.000       0.000    4298.260       0.000       0.000       1.240    0.00000   0.000
HYDR-1        5   FL       0.000       0.000    2974.870       0.000       0.000       0.750    0.00000   0.000
HYDR-1        6   OB       0.000       0.000     209.310       0.000       0.000       4.000    0.00000   0.000
ENDATA09

$$$ DATA TYPE 10 (DISPERSIVE HYDRAULIC COEFFICIENTS) $$$
```

CARD TYPE	REACH	ID	TIDAL RANGE	DISPERSION "A"	DISPERSION "B"	DISPERSION "C"	DISPERSION "D"
HYDR	1	LL	0.00	0.300	0.000	0.000	0.000
HYDR	2	LL	0.00	0.400	0.000	0.000	0.000
HYDR	3	BH	0.00	0.500	0.000	0.000	0.000
HYDR	4	FL	0.00	0.450	0.000	0.000	0.000
HYDR	5	FL	0.00	0.650	0.000	0.000	0.000
HYDR	6	OB	0.00	0.650	0.000	0.000	0.000

ENDATA10

$$$ DATA TYPE 11 (INITIAL CONDITIONS) $$$

CARD TYPE	REACH	ID	TEMP	SALIN	DO	NH3	NO3+2	PHOS	CHL A	MACRO
INITIAL	1	LL	32.90	0.00	6.15	0.10	0.00	0.00	58.00	0.00
INITIAL	2	LL	32.90	0.00	5.80	0.10	0.00	0.00	58.00	0.00
INITIAL	3	BH	32.90	0.00	5.20	0.10	0.00	0.00	58.00	0.00
INITIAL	4	FL	32.90	0.00	6.16	0.10	0.00	0.00	58.00	0.00
INITIAL	5	FL	32.90	0.00	6.16	0.10	0.00	0.00	58.00	0.00
INITIAL	6	OB	32.90	0.00	6.16	0.10	0.00	0.00	58.00	0.00

ENDATA11

$$$ DATA TYPE 12 (REAERATION, SEDIMENT OXYGEN DEMAND, BOD COEFFICIENTS) $$$

CARD TYPE	RCH NUM	RCH ID	K2 OPT	K2 "A"	K2 "B"	K2 "C"	BKGRND SOD g/m²/d	BOD DECAY per day	BOD SETT m/d	BOD CONV TO SOD	ANAER BOD2 DECAY per day	BOD2 DECAY per day	BOD2 SETT m/d	BOD2 CONV TO SOD	ANAER BOD2 DECAY per day
COEFF-1	1	LL	20 K2=a/D	0.890	0.000	0.000	0.190	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	2	LL	20 K2=a/D	0.890	0.000	0.000	1.460	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	3	BH	20 K2=a/D	0.890	0.000	0.000	2.350	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	4	FL	20 K2=a/D	0.890	0.000	0.000	0.410	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	5	FL	20 K2=a/D	0.890	0.000	0.000	0.690	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	6	OB	20 K2=a/D	0.890	0.000	0.000	1.620	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ENDATA12

$$$ DATA TYPE 13 (NITROGEN AND PHOSPHORUS COEFFICIENTS) $$$

CARD TYPE	REACH	ID	ORG-N DECA	ORG-N SETT	ORGN CONV TO NH3 SRCE	NH3 DECA	NH3 SRCE	PHOS SRCE	DENIT RATE
COEFF-2	1	LL	0.020	0.000	1.000	0.130	0.000	0.000	0.000
COEFF-2	2	LL	0.020	0.000	1.000	0.130	0.000	0.000	0.000
COEFF-2	3	BH	0.020	0.000	1.000	0.130	0.000	0.000	0.000
COEFF-2	4	FL	0.020	0.000	1.000	0.130	0.000	0.000	0.000
COEFF-2	5	FL	0.020	0.000	1.000	0.130	0.000	0.000	0.000
COEFF-2	6	OB	0.020	0.000	1.000	0.130	0.000	0.000	0.000

ENDATA13

$$$ DATA TYPE 14 (ALGAE AND MACROPHYTE COEFFICIENTS) $$$

CARD TYPE	REACH	ID	SECCHI DEPTH	ALGAE: CHL A	ALGAE SETT	ALG CONV TO SOD	ALGAE GROW	ALGAE RESP	MACRO GROW	MACRO RESP	SHADING

ENDATA14

$$$ DATA TYPE 15 (COLIFORM AND NONCONSERVATIVE COEFFICIENTS) $$$

CARD TYPE	REACH	ID	COLIFORM DIE-OFF	NCM DECAY	NCM SETT	NCM CONV TO SOD

ENDATA15

$$$ DATA TYPE 16 (INCREMENTAL DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE	REACH	ID	OUTFLOW	INFLOW	TEMP	SALIN	CM-I	CM-II	IN/DIST	OUT/DIST

ENDATA16

$$$ DATA TYPE 17 (INCREMENTAL DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE	REACH	ID	DO	BOD	ORG-N	NH3-N	NO3-N	BOD#2

ENDATA17

$$$ DATA TYPE 18 (INCREMENTAL DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE	REACH	ID	PHOS	CHL A	COLI	NCM

ENDATA18

$$$ DATA TYPE 19 (NONPOINT SOURCE DATA) $$$

CARD TYPE	REACH	ID	BOD#1	ORG-N	COLI	NCM	DO	BOD#2
NONPOINT	1	LL	32340.00	462.00	0.00	0.00	0.00	0.00
NONPOINT	2	LL	1540.00	69.00	0.00	0.00	0.00	0.00
NONPOINT	3	BH	4235.00	231.00	0.00	0.00	0.00	0.00
NONPOINT	4	FL	96250.00	1848.00	0.00	0.00	0.00	0.00
NONPOINT	5	FL	15400.00	385.00	0.00	0.00	0.00	0.00
NONPOINT	6	OB	3080.00	77.00	0.00	0.00	0.00	0.00

ENDATA19

$$$ DATA TYPE 20 (HEADWATER FOR FLOW, TEMPERATURE, SALINITY AND CONSERVATIVES) $$$

CARD TYPE	ELEMENT	NAME	UNIT	FLOW	FLOW	TEMP	SALIN	CM-I	CM-II

```
                                                  m³/s      cfs   deg C      ppt  umhos/cm

HDWTR-1          1     Bayou de Cade          0   0.02800    0.989   32.90     4.78  8320.000     0.000   0.00
HDWTR-1        183     Atchafalaya Bay        0   0.02800    0.989   32.90     1.95  3058.000     0.000   0.00
ENDATA20

$$$ DATA TYPE 21 (HEADWATER DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE     ELEMENT   NAME                        DO      BOD#1     ORG-N     NH3-N     NO3-N     BOD#2
                                                   mg/L      mg/L      mg/L      mg/L      mg/L      mg/L

HDWTR-2          1     Bayou de Cade              7.80      5.88      1.40      0.10      0.00      0.00
HDWTR-2        183     Atchafalaya Bay            7.80      6.01      0.57      0.10      0.00      0.00
ENDATA21

$$$ DATA TYPE 22 (HEADWATER DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE     ELEMENT   NAME                      PHOS      CHL A      COLI       NCM
                                                  mg/L      mg/L      mg/L      mg/L

ENDATA22

$$$ DATA TYPE 23 (JUNCTION DATA) $$$

CARD TYPE   JUNCTION   UPSTRM     RIVER     NAME
             ELEMENT  ELEMENT     KILOM

JUNCTION         333     182      10.00     Four League Bay
ENDATA23

$$$ DATA TYPE 24 (WASTELOAD DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE  ELEMENT    RKILO  NAME                    FLOW      FLOW     FLOW    TEMP    SALIN      CM-I     CM-II
                                                     m³/s       cfs      MGD   deg C      ppt  umhos/cm

ENDATA24

$$$ DATA TYPE 25 (WASTELOAD DATA FOR DO, BOD, AND NITROGEN) $$$
                                                                 % BOD                          %
CARD TYPE     ELEMENT   NAME                        DO       BOD      RMVL     ORG-N     NH3-N    NITRIF     NO3-N     BOD#2
                                                   mg/L      mg/L                mg/L      mg/L                mg/L      mg/L

ENDATA25

$$$ DATA TYPE 26 (WASTELOAD DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE     ELEMENT   NAME                      PHOS      CHL A      COLI       NCM
                                                  mg/L      mg/L      mg/L      mg/L
```

```
ENDATA26

$$$ DATA TYPE 27 (LOWER BOUNDARY CONDITIONS) $$$

CARD TYPE    CONSTITUENT                    CONCENTRATION

LOWER BC     TEMPERATURE                       =     30.175     deg C
LOWER BC     SALINITY                          =     32.900     ppt
LOWER BC     CONSERVATIVE MATERIAL I           =  33905.000     umhos/cm
LOWER BC     DISSLOVED OXYGEN                  =      6.105     mg/L
LOWER BC     BIOCHEMICAL OXYGEN DEMAND         =      6.270     mg/L
LOWER BC     ORGANIC NITROGEN                  =      0.600     mg/L
LOWER BC     AMMONIA NITROGEN                  =      0.100     mg/L
LOWER BC     NITRATE NITROGEN                  =      0.000     mg/L
LOWER BC     CHLOROPHYLL A                     =     52.000     µg/L
ENDATA27

$$$ DATA TYPE 28 (DAM DATA) $$$

CARD TYPE     ELEMENT   NAME                 EQN      "A"       "B"       "H"

ENDATA28

$$$ DATA TYPE 29 (SENSITIVITY ANALYSIS DATA) $$$

CARD TYPE       PARAMETER     COL 1     COL 2     COL 3     COL 4     COL 5     COL 6     COL 7     COL 8

ENDATA29

$$$ DATA TYPE 30 (PLOT CONTROL CARDS) $$$


NUMBER OF PLOTS =  2
NUMBER OF REACHES IN PLOT 1 =   5
PLOT RCH  1  2  3  5  6
NUMBER OF REACHES IN PLOT 2 =   1
PLOT RCH  4
ENDATA30

$$$ DATA TYPE 31 (OVERLAY PLOT DATA) $$$


OVERLAY 1 ll_proj.ovl                    :Lost Lake to Gulf of Mexcio
OVERLAY 2 flb_proj.ovl                   :Four League Bay to Blue Hammock Bayou
ENDATA31



     .....NO ERRORS DETECTED IN INPUT DATA
```

```
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN   3 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
 ***** WARNING:  NEGATIVE CONCENTRATIONS SET TO ZERO FOR Nitrate+Nitrite Nitrogen
     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11
     .....GRAPHICS DATA FOR PLOT 2 WRITTEN TO UNIT 12


STREAM SUMMARY                                          LA-QUAL model for Lost Lake and Four League Bay (120708)
Bayou de Cade                                           Summer Projection

 TRAVEL TIME       =       13606.53 DAYS

 MAXIMUM EFFLUENT  =           0.00 PERCENT

 FLOW              =   0.02800 TO    0.05600   m3/s
 DISPERSION        =   0.3000  TO    0.6500    m2/s
 VELOCITY          =   0.00001 TO    0.00007   m/s
 DEPTH             =   0.75    TO    4.00      m
 WIDTH             = 209.31    TO  ******      m

 BOD DECAY         =    0.51   TO    0.58      per day
 NH3 DECAY         =    0.25   TO    0.30      per day
 SOD               =    0.43   TO    5.30      g/m2/d
 NH3 SOURCE        =    0.00   TO    0.00      g/m2/d
 REAERATION        =    0.26   TO    1.48      per day
 BOD SETTLING      =    0.00   TO    0.00      per day
 ORG-N DECAY       =    0.02   TO    0.03      per day
 ORG-N SETTLING    =    0.00   TO    0.00      per day

 TEMPERATURE       =   30.17   TO   32.90      deg C
 DISSOLVED OXYGEN  =    5.03   TO    7.96      mg/L


STREAM SUMMARY                                          LA-QUAL model for Lost Lake and Four League Bay (120708)
Atchafalaya Bay                                         Summer Projection

 TRAVEL TIME       =       33047.16 DAYS

 MAXIMUM EFFLUENT  =           0.00 PERCENT

 FLOW              =   0.02800 TO    0.02800   m3/s
 DISPERSION        =   0.4500  TO    0.4500    m2/s
 VELOCITY          =   0.00001 TO    0.00001   m/s
 DEPTH             =   1.24    TO    1.24      m
 WIDTH             = ******    TO  ******      m

 BOD DECAY         =    0.58   TO    0.58      per day
```

NH3 DECAY	=	0.31	TO	0.31	per day
SOD	=	0.92	TO	0.92	g/m²/d
NH3 SOURCE	=	0.00	TO	0.00	g/m²/d
REAERATION	=	0.90	TO	0.90	per day
BOD SETTLING	=	0.00	TO	0.00	per day
ORG-N DECAY	=	0.03	TO	0.03	per day
ORG-N SETTLING	=	0.00	TO	0.00	per day
TEMPERATURE	=	32.90	TO	32.90	deg C
DISSOLVED OXYGEN	=	7.40	TO	7.48	mg/L

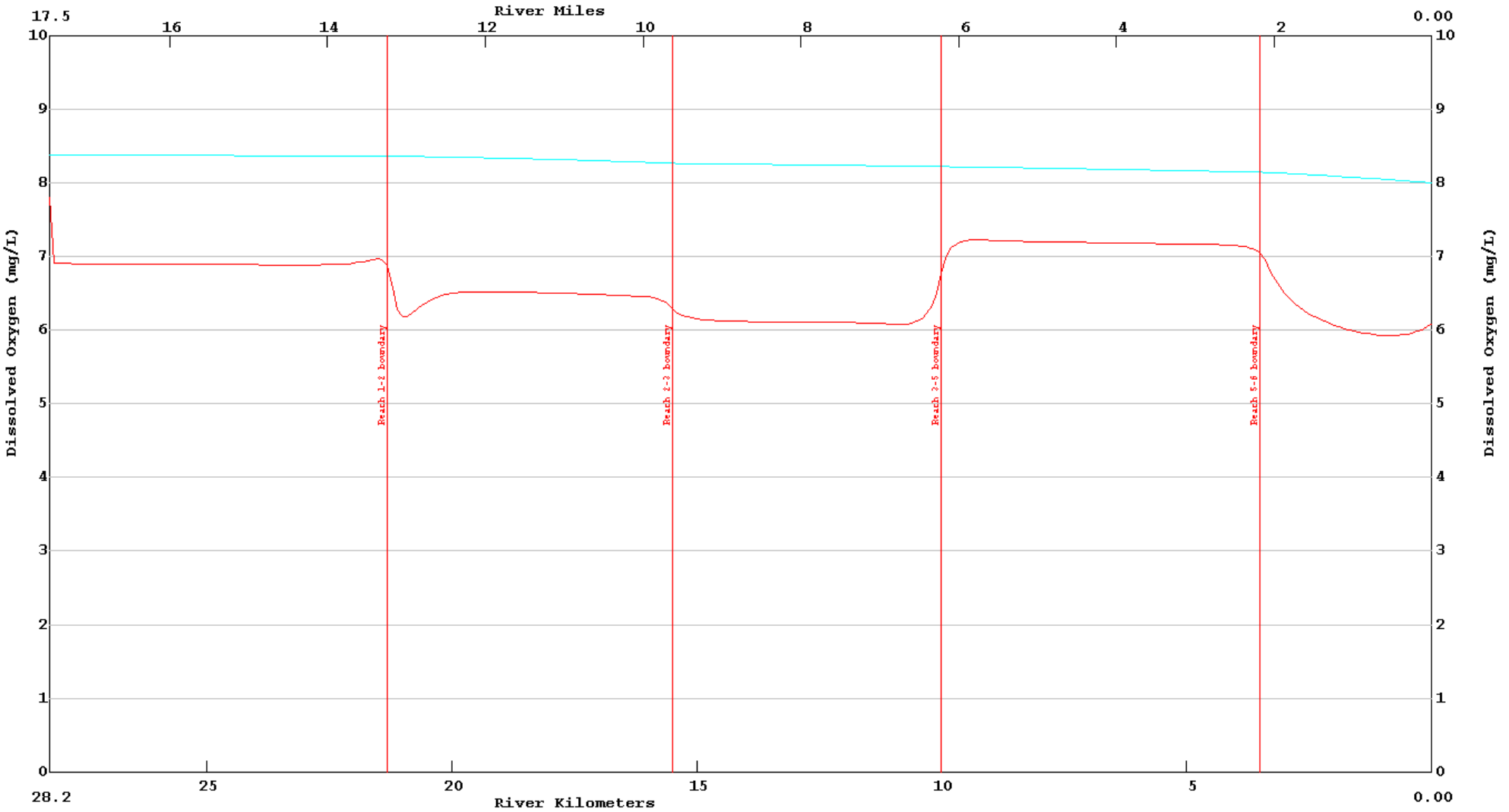
LA-QUAL model for Lost Lake and Four League Bay (120708)
Summer Projection

INPUT/OUTPUT LOADING SUMMARY

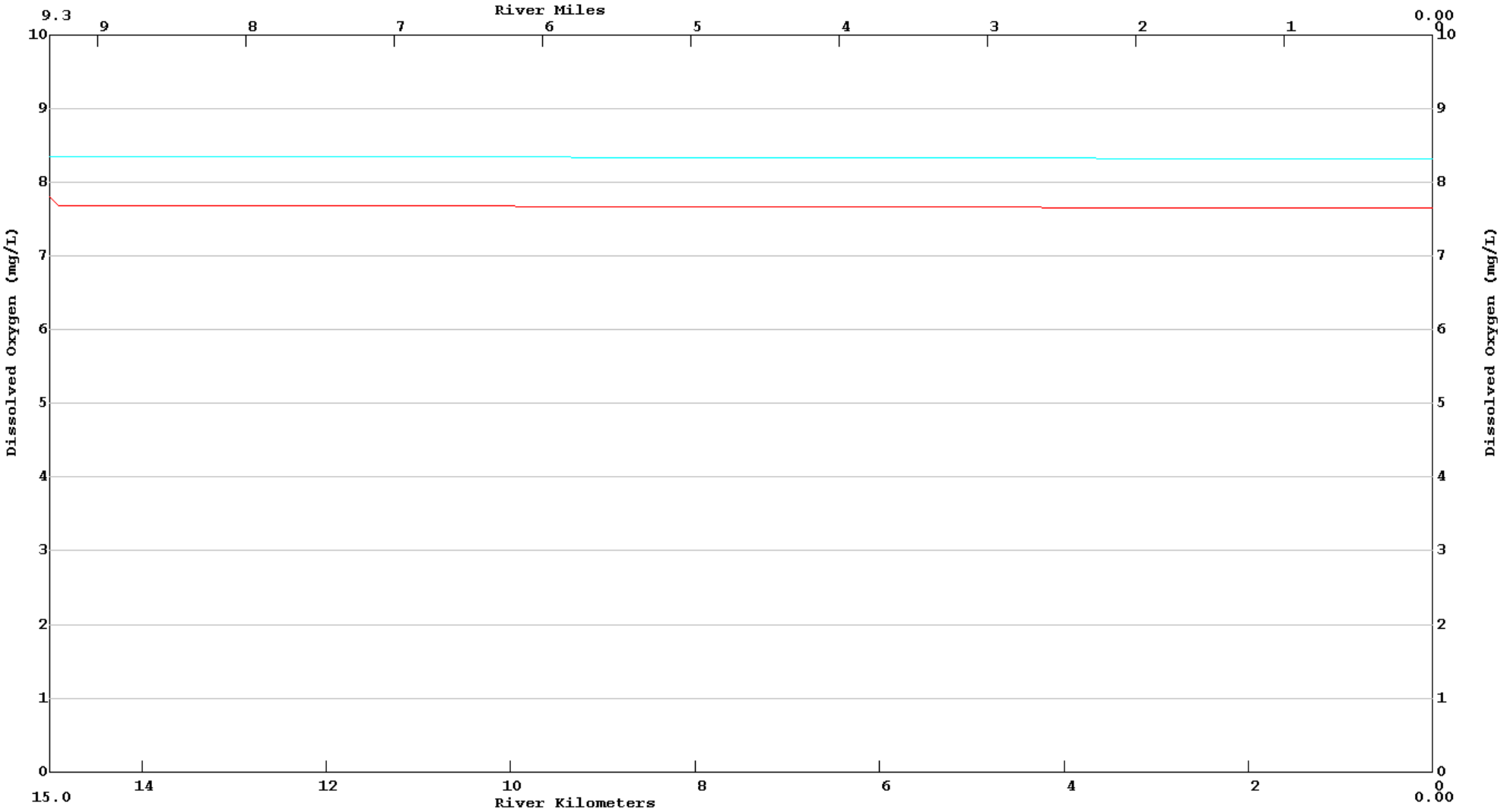
	FLOW m^3/s	DO kg/d	BOD#1 kg/d	BOD#2 kg/d	ORG-N kg/d	NH3-N kg/d	NO3-N kg/d	PHOS kg/d	CHL A	NCM
HEADWATER FLOW	0.056	37.7	14.7	0.0	4.8	0.5	0.0	0.0	0.0	0.0
INCREMENTAL INFLOW	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INCREMENTAL OUTFLOW	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WASTELOADS	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WITHDRAWLS	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FLOW THRU LOWER BNDRY	-0.056	-29.6	-16.6	0.0	-3.0	-0.5	0.0	0.0	0.0	0.0
DISPERSION THRU LOWER BNDRY		-4.3	232.7	0.0	-15.3	3.1	0.0	0.0	0.0	0.0
DISPERSION THRU HDWTR BNDRY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NON-POINT INPUT		0.0	152844.7	0.0	3072.0					0.0
NATURAL REAERATION		-38360.9								
DAM REAERATION		0.0								
BACKGROUND SOD		-125999.3								
BOD#1 DECAY		-153075.5	-153075.5							
BOD#1 SETTLING		0.0	0.0							
ANAEROBIC BOD#1 DECAY			0.0							
BOD#2 DECAY		0.0		0.0						
BOD#2 SETTLING		0.0		0.0						
ANAEROBIC BOD#2 DECAY				0.0						
ORG-N DECAY		0.0			-3058.5	3058.5				
ORG-N SETTLING					0.0	0.0				
NH3 DECAY		-13288.4				-3068.9	3068.9			
BACKGROUND NH3 SOURCE						0.0				
OTHER DENITRIFICATION							0.0			
PHOSPHORUS SOURCE								0.0		
ALGAE PHOTOSYNTHESIS		330688.9				0.0	-31797.0	0.0	0.0	
ALGAE RESPIRATION		0.0				0.0		0.0	0.0	
ALGAE SETTLING		0.0							0.0	
MACRO PHOTOSYNTHESIS		0.0				0.0	0.0	0.0		
NCM DECAY		0.0								0.0
NCM SETTLING		0.0								0.0
TOTAL INPUTS	0.056	330726.6	153092.1	0.0	3076.8	3062.1	3068.9	0.0	0.0	0.0
TOTAL OUTPUTS	-0.056	-330757.9	-153092.1	0.0	-3076.8	-3069.4	-31797.0	0.0	0.0	0.0
NET CONVERGENCE ERROR	0.000	-31.3	0.0	0.0	0.0	-7.3	-28728.1	0.0	0.0	0.0

.....EXECUTION COMPLETED

LA-QUAL Version 8.11 Run at 14:21 on 03/12/2008 File D:\laqual\lofowin-r.txt
Winter Projection min= 5.93 max= 7.80
:Lost Lake to Gulf of Mexcio



LA-QUAL Version 8.11 Run at 14:21 on 03/12/2008 File D:\laqual\lofowin-r.txt
Winter Projection min= 7.65 max= 7.80
:Four League Bay to Blue Hammock Bayou



```
LA-QUAL Version 8.11
Louisiana Department of Environmental Quality

Input file is D:\laqual\lofowin-r.txt
Output produced at 09:24 on 03/12/2008

$$$ DATA TYPE 1 (TITLES AND CONTROL CARDS) $$$

CARD TYPE       CONTROL TITLES

TITLE01         LA-QUAL model for Lost Lake and Four League Bay (120708)
TITLE02         Winter Projection
CNTROL03   NO   SEQU                        <Warning: legacy control - line ignored>
CNTROL04  YES   METR
CNTROL05  YES   OXYG                        <Warning: legacy control - line ignored>
ENDATA01

$$$ DATA TYPE 2 (MODEL OPTIONS) $$$

CARD TYPE       MODEL OPTION

MODOPT01   NO   TEMP
MODOPT02  YES   SALI
MODOPT03  YES   CONSERVATIVE MATERIAL  I = Specific Conductivity      IN umhos/cm Sp Cond
MODOPT04   NO   CONSERVATIVE MATERIAL II
MODOPT05  YES   DISS
MODOPT06  YES   BIOC
MODOPT07  YES   NITR
MODOPT08   NO   PHOS
MODOPT09   NO   CHLO
MODOPT10   NO   MACR
MODOPT11   NO   COLI
MODOPT12   NO   NONC
ENDATA02

$$$ DATA TYPE 3 (PROGRAM CONSTANTS) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                       VALUE

PROGRAM         HYDRAULIC CALCULATION METHOD       =        2.00000 (widths and depths)
PROGRAM         MAXIMUM ITERATION LIMIT            =      500.00000
PROGRAM         ALGAE OXYGEN PROD                  =        0.02600 mg O/ug chl a/day
PROGRAM         EFFECTIVE BOD DUE TO ALGAE         =        0.05000 mg/L BOD per ug/L chl a
PROGRAM         HEADWATER EXCHANGE RATIO           =        1.00000
ENDATA03

$$$ DATA TYPE 4 (TEMPERATURE CORRECTION CONSTANTS FOR RATE COEFFICIENTS) $$$
```

```
 CARD TYPE     RATE CODE     THETA VALUE

THETA        NH3 DECA       1.07000
ENDATA04

$$$ CONSTANTS TYPE 5 (TEMPERATURE DATA) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                      VALUE

ENDATA05

$$$ DATA TYPE 6 (ALGAE CONSTANTS) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                      VALUE

ENDATA06

$$$ DATA TYPE 7 (MACROPHYTE CONSTANTS) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                      VALUE

ENDATA07

$$$ DATA TYPE 8 (REACH IDENTIFICATION DATA) $$$
                                                          BEGIN          END      ELEM     REACH     ELEMS   BEGIN     END
CARD TYPE  REACH  ID  NAME                                REACH        REACH    LENGTH    LENGTH  PER RCH    ELEM    ELEM
                                                             km           km        km        km              NUM     NUM

REACH ID      1   LL   Lost Lake                         28.20  TO   21.30   0.1000     6.90      69       1      69
REACH ID      2   LL   Lost Lake Pass                    21.30  TO   15.50   0.1000     5.80      58      70     127
REACH ID      3   BH   Blue Hammock Bayou                15.50  TO   10.00   0.1000     5.50      55     128     182
REACH ID      4   FL   Four League Bay (North)           15.00  TO    0.00   0.1000    15.00     150     183     332
REACH ID      5   FL   Four League Bay (South)           10.00  TO    3.50   0.1000     6.50      65     333     397
REACH ID      6   OB   Oyster Bayou                       3.50  TO    0.00   0.1000     3.50      35     398     432
ENDATA08

$$$ DATA TYPE 9 (ADVECTIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE  REACH  ID       WIDTH       WIDTH       WIDTH       DEPTH       DEPTH       DEPTH      SLOPE    MANNINGS
                             "A"         "B"         "C"         "D"         "E"         "F"                   "N"

HYDR-1        1   LL       0.000       0.000    2556.160       0.000       0.000       0.850    0.00000   0.000
HYDR-1        2   LL       0.000       0.000     547.790       0.000       0.000       0.760    0.00000   0.000
HYDR-1        3   BH       0.000       0.000     546.580       0.000       0.000       2.260    0.00000   0.000
HYDR-1        4   FL       0.000       0.000    4298.260       0.000       0.000       1.240    0.00000   0.000
HYDR-1        5   FL       0.000       0.000    2974.870       0.000       0.000       0.750    0.00000   0.000
HYDR-1        6   OB       0.000       0.000     209.310       0.000       0.000       4.000    0.00000   0.000
ENDATA09
```

$$$ DATA TYPE 10 (DISPERSIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE	REACH	ID	TIDAL RANGE	DISPERSION "A"	DISPERSION "B"	DISPERSION "C"	DISPERSION "D"
HYDR	1	LL	0.00	0.300	0.000	0.000	0.000
HYDR	2	LL	0.00	0.400	0.000	0.000	0.000
HYDR	3	BH	0.00	0.500	0.000	0.000	0.000
HYDR	4	FL	0.00	0.450	0.000	0.000	0.000
HYDR	5	FL	0.00	0.650	0.000	0.000	0.000
HYDR	6	OB	0.00	0.650	0.000	0.000	0.000

ENDATA10

$$$ DATA TYPE 11 (INITIAL CONDITIONS) $$$

CARD TYPE	REACH	ID	TEMP	SALIN	DO	NH3	NO3+2	PHOS	CHL A	MACRO
INITIAL	1	LL	22.50	0.00	6.15	0.10	0.00	0.00	58.00	0.00
INITIAL	2	LL	22.50	0.00	5.80	0.10	0.00	0.00	58.00	0.00
INITIAL	3	BH	22.50	0.00	5.20	0.10	0.00	0.00	58.00	0.00
INITIAL	4	FL	22.50	0.00	6.16	0.10	0.00	0.00	58.00	0.00
INITIAL	5	FL	22.50	0.00	6.16	0.10	0.00	0.00	58.00	0.00
INITIAL	6	OB	22.50	0.00	6.16	0.10	0.00	0.00	58.00	0.00

ENDATA11

$$$ DATA TYPE 12 (REAERATION, SEDIMENT OXYGEN DEMAND, BOD COEFFICIENTS) $$$

CARD TYPE	RCH NUM	RCH ID	K2 OPT		K2 "A"	K2 "B"	K2 "C"	BKGRND SOD g/m²/d	BOD DECAY per day	BOD SETT m/d	BOD CONV TO SOD	ANAER BOD2 DECAY per day	BOD2 DECAY per day	BOD2 SETT m/d	BOD2 CONV TO SOD	ANAER BOD2 DECAY per day
COEFF-1	1	LL	20	K2=a/D	0.890	0.000	0.000	0.250	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	2	LL	20	K2=a/D	0.890	0.000	0.000	1.900	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	3	BH	20	K2=a/D	0.890	0.000	0.000	3.050	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	4	FL	20	K2=a/D	0.890	0.000	0.000	0.530	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	5	FL	20	K2=a/D	0.890	0.000	0.000	0.900	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	6	OB	20	K2=a/D	0.890	0.000	0.000	2.100	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000

ENDATA12

$$$ DATA TYPE 13 (NITROGEN AND PHOSPHORUS COEFFICIENTS) $$$

CARD TYPE	REACH	ID	ORG-N DECA	ORG-N SETT	ORGN CONV TO NH3 SRCE	NH3 DECA	NH3 SRCE	PHOS SRCE	DENIT RATE
COEFF-2	1	LL	0.020	0.000	1.000	0.130	0.000	0.000	0.000
COEFF-2	2	LL	0.020	0.000	1.000	0.130	0.000	0.000	0.000
COEFF-2	3	BH	0.020	0.000	1.000	0.130	0.000	0.000	0.000
COEFF-2	4	FL	0.020	0.000	1.000	0.130	0.000	0.000	0.000

```
COEFF-2          5   FL       0.020     0.000     1.000       0.130     0.000     0.000     0.000
COEFF-2          6   OB       0.020     0.000     1.000       0.130     0.000     0.000     0.000
ENDATA13

$$$ DATA TYPE 14 (ALGAE AND MACROPHYTE COEFFICIENTS) $$$

CARD TYPE      REACH  ID       SECCHI    ALGAE:     ALGAE    ALG CONV     ALGAE     ALGAE     MACRO     MACRO
                                DEPTH     CHL A      SETT     TO SOD      GROW      RESP      GROW      RESP   SHADING

ENDATA14

$$$ DATA TYPE 15 (COLIFORM AND NONCONSERVATIVE COEFFICIENTS) $$$

CARD TYPE      REACH  ID    COLIFORM       NCM       NCM    NCM CONV
                            DIE-OFF     DECAY      SETT     TO SOD

ENDATA15

$$$ DATA TYPE 16 (INCREMENTAL DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE      REACH  ID       OUTFLOW      INFLOW      TEMP     SALIN      CM-I     CM-II   IN/DIST  OUT/DIST

ENDATA16

$$$ DATA TYPE 17 (INCREMENTAL DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE      REACH  ID          DO       BOD     ORG-N     NH3-N     NO3-N     BOD#2

ENDATA17

$$$ DATA TYPE 18 (INCREMENTAL DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

 CARD TYPE      REACH  ID        PHOS     CHL A      COLI       NCM

ENDATA18

$$$ DATA TYPE 19 (NONPOINT SOURCE DATA) $$$

CARD TYPE      REACH  ID       BOD#1     ORG-N      COLI       NCM        DO     BOD#2

NONPOINT         1   LL    42000.00    600.00      0.00      0.00      0.00      0.00
NONPOINT         2   LL     2000.00     90.00      0.00      0.00      0.00      0.00
NONPOINT         3   BH     5500.00    300.00      0.00      0.00      0.00      0.00
NONPOINT         4   FL   125000.00   2400.00      0.00      0.00      0.00      0.00
NONPOINT         5   FL    20000.00    500.00      0.00      0.00      0.00      0.00
NONPOINT         6   OB     4000.00    100.00      0.00      0.00      0.00      0.00
ENDATA19
```

$$$ DATA TYPE 20 (HEADWATER FOR FLOW, TEMPERATURE, SALINITY AND CONSERVATIVES) $$$

CARD TYPE	ELEMENT	NAME	UNIT	FLOW m^3/s	FLOW cfs	TEMP deg C	SALIN ppt	CM-I umhos/cm	CM-II	
HDWTR-1	1	Bayou de Cade	0	0.02800	0.989	22.50	4.78	8320.000	0.000	0.00
HDWTR-1	183	Atchafalaya Bay	0	0.02800	0.989	22.50	1.95	3058.000	0.000	0.00

ENDATA20

$$$ DATA TYPE 21 (HEADWATER DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE	ELEMENT	NAME	DO mg/L	BOD#1 mg/L	ORG-N mg/L	NH3-N mg/L	NO3-N mg/L	BOD#2 mg/L
HDWTR-2	1	Bayou de Cade	7.80	5.88	1.40	0.10	0.00	0.00
HDWTR-2	183	Atchafalaya Bay	7.80	6.01	0.57	0.10	0.00	0.00

ENDATA21

$$$ DATA TYPE 22 (HEADWATER DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE	ELEMENT	NAME	PHOS mg/L	CHL A mg/L	COLI mg/L	NCM mg/L

ENDATA22

$$$ DATA TYPE 23 (JUNCTION DATA) $$$

CARD TYPE	JUNCTION ELEMENT	UPSTRM ELEMENT	RIVER KILOM	NAME
JUNCTION	333	182	10.00	Four League Bay

ENDATA23

$$$ DATA TYPE 24 (WASTELOAD DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE	ELEMENT	RKILO	NAME	FLOW m^3/s	FLOW cfs	FLOW MGD	TEMP deg C	SALIN ppt	CM-I umhos/cm	CM-II

ENDATA24

$$$ DATA TYPE 25 (WASTELOAD DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE	ELEMENT	NAME	DO mg/L	BOD mg/L	% BOD RMVL	ORG-N mg/L	NH3-N mg/L	% NITRIF	NO3-N mg/L	BOD#2 mg/L

ENDATA25

$$$ DATA TYPE 26 (WASTELOAD DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

```
CARD TYPE     ELEMENT   NAME                        PHOS     CHL A      COLI       NCM
                                                    mg/L      mg/L      mg/L      mg/L

ENDATA26

$$$ DATA TYPE 27 (LOWER BOUNDARY CONDITIONS) $$$

CARD TYPE    CONSTITUENT                    CONCENTRATION

LOWER BC     TEMPERATURE                       =     22.500     deg C
LOWER BC     SALINITY                          =     13.700     ppt
LOWER BC     CONSERVATIVE MATERIAL I           =  33905.000     umhos/cm
LOWER BC     DISSLOVED OXYGEN                  =      6.105     mg/L
LOWER BC     BIOCHEMICAL OXYGEN DEMAND         =      6.270     mg/L
LOWER BC     ORGANIC NITROGEN                  =      0.600     mg/L
LOWER BC     AMMONIA NITROGEN                  =      0.100     mg/L
LOWER BC     NITRATE NITROGEN                  =      0.000     mg/L
LOWER BC     CHLOROPHYLL A                     =     52.000     µg/L
ENDATA27

$$$ DATA TYPE 28 (DAM DATA) $$$

CARD TYPE     ELEMENT   NAME                 EQN      "A"       "B"       "H"

ENDATA28

$$$ DATA TYPE 29 (SENSITIVITY ANALYSIS DATA) $$$

CARD TYPE       PARAMETER     COL 1     COL 2     COL 3     COL 4     COL 5     COL 6     COL 7     COL 8

ENDATA29

$$$ DATA TYPE 30 (PLOT CONTROL CARDS) $$$


NUMBER OF PLOTS =  2
NUMBER OF REACHES IN PLOT 1 =   5
PLOT RCH  1  2  3  5  6
NUMBER OF REACHES IN PLOT 2 =   1
PLOT RCH  4
ENDATA30

$$$ DATA TYPE 31 (OVERLAY PLOT DATA) $$$


OVERLAY 1 ll_proj.ovl                    :Lost Lake to Gulf of Mexcio
OVERLAY 2 flb_proj.ovl                   :Four League Bay to Blue Hammock Bayou
ENDATA31
```

```
     .....NO ERRORS DETECTED IN INPUT DATA
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
 ***** WARNING:  NEGATIVE CONCENTRATIONS SET TO ZERO FOR Nitrate+Nitrite Nitrogen
     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11
     .....GRAPHICS DATA FOR PLOT 2 WRITTEN TO UNIT 12


STREAM SUMMARY                                          LA-QUAL model for Lost Lake and Four League Bay (120708)
Bayou de Cade                                           Winter Projection

 TRAVEL TIME       =       13606.53 DAYS

 MAXIMUM EFFLUENT  =           0.00 PERCENT

 FLOW              =   0.02800 TO    0.05600   m3/s
 DISPERSION        =   0.3000  TO    0.6500    m2/s
 VELOCITY          =   0.00001 TO    0.00007   m/s
 DEPTH             =   0.75    TO    4.00      m
 WIDTH             = 209.31    TO  ******      m

 BOD DECAY         =    0.36   TO    0.36      per day
 NH3 DECAY         =    0.15   TO    0.15      per day
 SOD               =    0.29   TO    3.57      g/m2/d
 NH3 SOURCE        =    0.00   TO    0.00      g/m2/d
 REAERATION        =    0.23   TO    1.24      per day
 BOD SETTLING      =    0.00   TO    0.00      per day
 ORG-N DECAY       =    0.02   TO    0.02      per day
 ORG-N SETTLING    =    0.00   TO    0.00      per day

 TEMPERATURE       =   22.50   TO   22.50      deg C
 DISSOLVED OXYGEN  =    5.93   TO    7.23      mg/L


STREAM SUMMARY                                          LA-QUAL model for Lost Lake and Four League Bay (120708)
Atchafalaya Bay                                         Winter Projection

 TRAVEL TIME       =       33047.16 DAYS

 MAXIMUM EFFLUENT  =           0.00 PERCENT

 FLOW              =   0.02800 TO    0.02800   m3/s
 DISPERSION        =   0.4500  TO    0.4500    m2/s
 VELOCITY          =   0.00001 TO    0.00001   m/s
 DEPTH             =   1.24    TO    1.24      m
 WIDTH             = ******    TO  ******      m
```

BOD DECAY	=	0.36	TO	0.36	per day
NH3 DECAY	=	0.15	TO	0.15	per day
SOD	=	0.62	TO	0.62	g/m²/d
NH3 SOURCE	=	0.00	TO	0.00	g/m²/d
REAERATION	=	0.75	TO	0.75	per day
BOD SETTLING	=	0.00	TO	0.00	per day
ORG-N DECAY	=	0.02	TO	0.02	per day
ORG-N SETTLING	=	0.00	TO	0.00	per day
TEMPERATURE	=	22.50	TO	22.50	deg C
DISSOLVED OXYGEN	=	7.65	TO	7.69	mg/L

LA-QUAL model for Lost Lake and Four League Bay (120708)
Winter Projection

INPUT/OUTPUT LOADING SUMMARY

	FLOW m^3/s	DO kg/d	BOD#1 kg/d	BOD#2 kg/d	ORG-N kg/d	NH3-N kg/d	NO3-N kg/d	PHOS kg/d	CHL A	NCM
HEADWATER FLOW	0.056	37.7	14.7	0.0	4.8	0.5	0.0	0.0	0.0	0.0
INCREMENTAL INFLOW	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INCREMENTAL OUTFLOW	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WASTELOADS	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WITHDRAWLS	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FLOW THRU LOWER BNDRY	-0.056	-29.4	-17.8	0.0	-3.1	-0.5	0.0	0.0	0.0	0.0
DISPERSION THRU LOWER BNDRY		21.9	-16.0	0.0	-32.4	-2.4	0.0	0.0	0.0	0.0
DISPERSION THRU HDWTR BNDRY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NON-POINT INPUT		0.0	198499.5	0.0	3990.0					0.0
NATURAL REAERATION		95323.2								
DAM REAERATION		0.0								
BACKGROUND SOD		-85128.4								
BOD#1 DECAY		-198481.0	-198481.0							
BOD#1 SETTLING		0.0	0.0							
ANAEROBIC BOD#1 DECAY			0.0							
BOD#2 DECAY		0.0		0.0						
BOD#2 SETTLING		0.0		0.0						
ANAEROBIC BOD#2 DECAY				0.0						
ORG-N DECAY		0.0			-3959.3	3959.3				
ORG-N SETTLING					0.0	0.0				
NH3 DECAY		-17207.1				-3973.9	3973.9			
BACKGROUND NH3 SOURCE						0.0				
OTHER DENITRIFICATION							0.0			
PHOSPHORUS SOURCE								0.0		
ALGAE PHOTOSYNTHESIS		205388.0				0.0	-19748.8	0.0	0.0	
ALGAE RESPIRATION		0.0				0.0		0.0	0.0	
ALGAE SETTLING		0.0							0.0	
MACRO PHOTOSYNTHESIS		0.0				0.0	0.0	0.0		
NCM DECAY		0.0								0.0
NCM SETTLING		0.0								0.0
TOTAL INPUTS	0.056	300770.8	198514.2	0.0	3994.8	3959.7	3973.9	0.0	0.0	0.0
TOTAL OUTPUTS	-0.056	-300846.0	-198514.8	0.0	-3994.8	-3976.8	-19748.8	0.0	0.0	0.0
NET CONVERGENCE ERROR	0.000	-75.2	-0.6	0.0	0.0	-17.1	-15774.9	0.0	0.0	0.0

.....EXECUTION COMPLETED

APPENDIX N

Input and Output for TMDL Calculation Program

```
120708                                  Subsegment number for this TMDL
"Lost Lake/Four League Bay"             Subsegment name (max 50 chars)
"lofosum.out"                           Name of LA-QUAL output file
6                                       Total number of reaches in the model
120708                                  Subsegment that reach 1 is in
120708                                  Subsegment that reach 2 is in
120708                                  Subsegment that reach 3 is in
120708                                  Subsegment that reach 4 is in
120708                                  Subsegment that reach 5 is in
120708                                  Subsegment that reach 6 is in
10                      point source margin of safety (%)
10                      point source Future Growth (%)
10                      NPS margin of safety (%)
10                      NPS Future Growth (%)
4.33                    Ratio of oxygen demand to nitrogen
0                       Number of minor point sources
No                      Nutrient TMDL needed?
1.0                     Natural ratio of total N to total P
```

TMDL CALCULATIONS FOR SUBSEGMENT: 120708   Lost Lake/Four League
FTN ASSOCIATES, LTD.
Program:Pr20m6f

INFO FOR INPUT FILE WITH USER SPECIFIED DATA AND OPTIONS:
File name:tmdllls.inp

INFO FOR LA-QUAL OUTPUT FILE:
File name:lofosum.out
Date/Time:Output produced at 18:45 on 10/17/2007
LA-QUAL Version 8.11

LIST OF ALL REACHES IN LA-QUAL OUTPUT FILE:
  Reach   1 (Elements   1 - 69) is in subsegment 120708 Lost Lake
  Reach   2 (Elements 70 - 127) is in subsegment 120708 Lost Lake Pass
  Reach   3 (Elements 128 - 182) is in subsegment 120708 Blue Hammock B
  Reach   4 (Elements 183 - 332) is in subsegment 120708 Four League Ba
  Reach   5 (Elements 333 - 397) is in subsegment 120708 Four League Ba
  Reach   6 (Elements 398 - 432) is in subsegment 120708 Oyster Bayou

==========

CALCULATIONS FOR LOADS FROM NPS INFLOWS (HEADWATERS, TRIBUTARIES, AND INCREMENTAL INFLOW):

Equation used: (Load, kg/day) = (Inflow rate, m3/sec) * (Conc., mg/L) * 1.0E-6 kg/mg * 1.0E3 L/m3 *
                                                                                    86400 sec/day

Values from LA-QUAL output:

Reach or Element number	Inflow rate (m3/sec)	CBODu conc. (mg/L)	Organic N conc. (mg/L)	Ammonia N conc. (mg/L)	NO2+NO3 N conc. (mg/L)	Name of inflow
1	0.02800	5.88	1.40	0.10	0.00	Bayou de Cade
183	0.02800	6.01	0.57	0.10	0.00	Atchafalaya Bay

Calculated values:

Element number	CBODu load (kg/day)	Organic N load (kg/day)	Ammonia N load (kg/day)	NO2+NO3 N load (kg/day)
1	14.22	3.39	0.24	0.00
183	14.54	1.38	0.24	0.00
Subsegment totals:	0.00	4.77	0.48	0.00

==========

CALCULATIONS FOR NONPOINT SOURCE MASS LOADS IN DATA TYPE 19:

Values from LA-QUAL output:

Reach number	CBODu mass load (kg/day)	Organic N mass load (kg/day)
1	32340.00	462.00
2	1540.00	69.00
3	4235.00	231.00
4	96250.00	1848.00
5	15400.00	385.00
6	3080.00	77.00
Subsegment totals	152845.00	3072.00

==========

CALCULATIONS FOR LOADS FROM SOD AND BENTHIC AMMONIA:

SOD temperature correction factor used in LA-QUAL model: 1.065 (default)

Equations used: SOD temp. corrected = (SOD at 20 C) * 1.065^(Water temp - 20 C)
SOD load = (SOD temp. corrected, g/m2/day) * (Surface area, m2) * 1.0E-3 kg/g
Benthic NH3-N load = (Benthic ammonia N, g/m2/day) * (Surface area, m2) * 1.0E-3 kg/g

		Values from LA-QUAL output:				Calculated values:		
Reach number	Element number	Water temp. (deg C)	Surface area (m2)	SOD at 20 C (g/m2/day)	Benthic ammonia N (g/m2/day)	SOD temp. corrected (g/m2/day)	SOD load (kg/day)	Benthic NH3-N load (kg/day)
1	1	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	2	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	3	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	4	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	5	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	6	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	7	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	8	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	9	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	10	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	11	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	12	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	13	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	14	32.90	255616.0	0.430	0.00	0.430	109.91	0.00

1	15	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	16	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	17	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	18	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	19	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	20	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	21	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	22	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	23	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	24	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	25	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	26	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	27	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	28	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	29	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	30	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	31	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	32	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	33	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	34	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	35	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	36	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	37	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	38	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	39	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	40	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	41	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	42	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	43	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	44	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	45	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	46	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	47	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	48	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	49	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	50	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	51	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	52	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	53	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	54	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	55	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	56	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	57	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	58	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	59	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	60	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	61	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	62	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	63	32.90	255616.0	0.430	0.00	0.430	109.91	0.00

1	64	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	65	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	66	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	67	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	68	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
1	69	32.90	255616.0	0.430	0.00	0.430	109.91	0.00
2	70	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	71	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	72	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	73	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	74	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	75	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	76	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	77	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	78	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	79	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	80	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	81	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	82	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	83	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	84	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	85	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	86	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	87	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	88	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	89	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	90	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	91	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	92	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	93	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	94	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	95	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	96	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	97	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	98	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	99	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	100	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	101	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	102	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	103	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	104	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	105	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	106	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	107	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	108	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	109	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	110	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	111	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	112	32.90	54779.0	0.430	0.00	3.290	180.22	0.00

2	113	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	114	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	115	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	116	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	117	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	118	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	119	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	120	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	121	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	122	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	123	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	124	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	125	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	126	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
2	127	32.90	54779.0	0.430	0.00	3.290	180.22	0.00
3	128	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	129	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	130	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	131	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	132	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	133	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	134	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	135	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	136	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	137	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	138	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	139	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	140	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	141	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	142	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	143	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	144	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	145	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	146	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	147	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	148	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	149	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	150	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	151	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	152	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	153	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	154	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	155	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	156	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	157	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	158	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	159	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	160	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	161	32.90	54658.0	0.430	0.00	5.300	289.69	0.00

3	162	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	163	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	164	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	165	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	166	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	167	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	168	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	169	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	170	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	171	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	172	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	173	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	174	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	175	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	176	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	177	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	178	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	179	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	180	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	181	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
3	182	32.90	54658.0	0.430	0.00	5.300	289.69	0.00
4	183	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	184	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	185	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	186	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	187	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	188	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	189	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	190	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	191	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	192	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	193	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	194	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	195	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	196	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	197	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	198	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	199	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	200	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	201	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	202	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	203	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	204	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	205	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	206	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	207	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	208	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	209	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	210	32.90	429826.0	0.430	0.00	0.920	395.44	0.00

4	211	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	212	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	213	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	214	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	215	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	216	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	217	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	218	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	219	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	220	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	221	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	222	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	223	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	224	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	225	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	226	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	227	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	228	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	229	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	230	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	231	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	232	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	233	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	234	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	235	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	236	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	237	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	238	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	239	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	240	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	241	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	242	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	243	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	244	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	245	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	246	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	247	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	248	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	249	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	250	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	251	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	252	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	253	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	254	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	255	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	256	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	257	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	258	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	259	32.90	429826.0	0.430	0.00	0.920	395.44	0.00

4	260	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	261	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	262	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	263	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	264	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	265	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	266	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	267	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	268	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	269	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	270	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	271	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	272	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	273	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	274	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	275	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	276	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	277	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	278	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	279	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	280	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	281	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	282	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	283	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	284	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	285	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	286	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	287	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	288	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	289	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
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4	291	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	292	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	293	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	294	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	295	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	296	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	297	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	298	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	299	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	300	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	301	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	302	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	303	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	304	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	305	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	306	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	307	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	308	32.90	429826.0	0.430	0.00	0.920	395.44	0.00

4	309	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	310	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	311	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	312	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	313	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	314	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	315	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	316	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	317	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	318	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	319	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	320	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	321	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	322	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	323	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	324	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	325	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	326	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	327	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	328	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	329	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	330	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	331	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
4	332	32.90	429826.0	0.430	0.00	0.920	395.44	0.00
5	333	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	334	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	335	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	336	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	337	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	338	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	339	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	340	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	341	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	342	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	343	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	344	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	345	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	346	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	347	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	348	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	349	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	350	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	351	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	352	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	353	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	354	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	355	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	356	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	357	32.90	297487.0	0.430	0.00	1.550	461.10	0.00

5	358	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	359	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	360	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	361	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	362	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	363	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	364	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	365	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	366	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	367	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	368	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	369	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	370	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	371	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	372	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	373	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	374	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	375	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	376	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	377	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	378	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	379	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	380	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	381	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	382	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	383	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	384	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	385	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	386	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	387	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	388	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	389	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	390	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	391	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	392	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	393	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	394	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	395	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	396	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
5	397	32.90	297487.0	0.430	0.00	1.550	461.10	0.00
6	398	32.90	20931.0	0.430	0.00	3.630	75.98	0.00
6	399	32.90	20931.0	0.430	0.00	3.610	75.56	0.00
6	400	32.90	20931.0	0.430	0.00	3.600	75.35	0.00
6	401	32.90	20931.0	0.430	0.00	3.580	74.93	0.00
6	402	32.90	20931.0	0.430	0.00	3.560	74.51	0.00
6	403	32.90	20931.0	0.430	0.00	3.540	74.10	0.00
6	404	32.90	20931.0	0.430	0.00	3.530	73.89	0.00
6	405	32.90	20931.0	0.430	0.00	3.510	73.47	0.00
6	406	32.90	20931.0	0.430	0.00	3.490	73.05	0.00

6	407	32.90	20931.0	0.430	0.00	3.480	72.84	0.00
6	408	32.90	20931.0	0.430	0.00	3.460	72.42	0.00
6	409	32.90	20931.0	0.430	0.00	3.440	72.00	0.00
6	410	32.90	20931.0	0.430	0.00	3.420	71.58	0.00
6	411	32.90	20931.0	0.430	0.00	3.410	71.37	0.00
6	412	32.90	20931.0	0.430	0.00	3.390	70.96	0.00
6	413	32.90	20931.0	0.430	0.00	3.370	70.54	0.00
6	414	32.90	20931.0	0.430	0.00	3.360	70.33	0.00
6	415	32.90	20931.0	0.430	0.00	3.340	69.91	0.00
6	416	32.90	20931.0	0.430	0.00	3.330	69.70	0.00
6	417	32.90	20931.0	0.430	0.00	3.310	69.28	0.00
6	418	32.90	20931.0	0.430	0.00	3.290	68.86	0.00
6	419	32.90	20931.0	0.430	0.00	3.280	68.65	0.00
6	420	32.90	20931.0	0.430	0.00	3.260	68.24	0.00
6	421	32.90	20931.0	0.430	0.00	3.250	68.03	0.00
6	422	32.90	20931.0	0.430	0.00	3.230	67.61	0.00
6	423	32.90	20931.0	0.430	0.00	3.210	67.19	0.00
6	424	32.90	20931.0	0.430	0.00	3.200	66.98	0.00
6	425	32.90	20931.0	0.430	0.00	3.180	66.56	0.00
6	426	32.90	20931.0	0.430	0.00	3.170	66.35	0.00
6	427	32.90	20931.0	0.430	0.00	3.150	65.93	0.00
6	428	32.90	20931.0	0.430	0.00	3.140	65.72	0.00
6	429	32.90	20931.0	0.430	0.00	3.120	65.30	0.00
6	430	32.90	20931.0	0.430	0.00	3.100	64.89	0.00
6	431	32.90	20931.0	0.430	0.00	3.090	64.68	0.00
6	432	32.90	20931.0	0.430	0.00	3.070	64.26	0.00
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				Subsegment totals:			125708.41	0.00

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CALCULATIONS FOR LOADS FROM POINT SOURCE DISCHARGES EXPLICITLY MODELED:

For this subsegment, there are no point source discharges explicitly modeled.

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CALCULATIONS FOR LOADS FROM POINT SOURCE DISCHARGES NOT EXPLICITLY MODELED:

For this subsegment, there are no point source discharges not explicitly modeled.

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SUMMARY OF NONPOINT SOURCE OXYGEN DEMAND FOR THIS SUBSEGEMENT:

Equations used: Organic N oxygen demand, kg/day = 4.3300 * Organic N load, kg/day of N
Ammonia N oxygen demand, kg/day = 4.3300 * Ammonia N load, kg/day of N
Margin of safety = 10.0% * nonpoint source load

Future Growth = 10.0% * nonpoint source load
Load Allocation = 80.0% * nonpoint source load

Values from calculations above

		Nitrogen loads (kg/day of N):		
	SOD (kg/day)	CBODu (kg/day)	Organic (kg/day)	Ammonia (kg/day)	NO2+NO3 N (kg/day)
NPS inflows	N/A	0.00	4.77	0.48	0.00
Mass Loads (data type 19)	N/A	152845.00	3072.00	N/A	N/A
SOD and Benthic	125708.41	N/A	N/A	0.00	N/A

Calculated loads of oxygen demand:

	Oygen demand loads:				Total Oxygen
	SOD (kg/day)	CBODu (kg/day)	Organic (kg/day)	Ammonia (kg/day)	demand (kg/day)
NPS inflows	N/A	0.00	20.65	2.08	22.73
Mass Loads (data type 19)	N/A	152845.00	13301.76	N/A	166146.77
SOD and Benthic	125708.41	N/A	N/A	0.00	125708.41
Total for all NPS loads	125708.41	152845.00	13322.41	2.08	291877.91
NPS future growth (10.0%)	12570.84	15284.50	1332.24	0.21	29187.79
NPS margin of safety (10.0%)	12570.84	15284.50	1332.24	0.21	29187.79
NPS load allocation (80.0%)	100566.73	122276.00	10657.93	1.66	233502.33

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SUMMARY OF POINT SOURCE OXYGEN DEMAND FOR THIS SUBSEGEMENT

For this subsegment, there are no point source discharges either modeled or unmodeled in this subsegment.

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120708                                  Subsegment number for this TMDL
"Lost Lake/Four League Bay"             Subsegment name (max 50 chars)
"lofotmdl.out"                          Name of LA-QUAL output file
6                                       Total number of reaches in the model
120708                                  Subsegment that reach 1 is in
120708                                  Subsegment that reach 2 is in
120708                                  Subsegment that reach 3 is in
120708                                  Subsegment that reach 4 is in
120708                                  Subsegment that reach 5 is in
120708                                  Subsegment that reach 6 is in
10                      point source margin of safety (%)
10                      point source Future Gorwth (%)
10                      NPS margin of safety (%)
10                      NPS Future Growth (%)
4.33                    Ratio of oxygen demand to nitrogen
0                       Number of minor point sources
No                      Nutrient TMDL needed?
1.0                     Natural ratio of total N to total P
```

TMDL CALCULATIONS FOR SUBSEGMENT: 120708   Lost Lake/Four League
 FTN ASSOCIATES, LTD.
 Program:Pr20m6f

 INFO FOR INPUT FILE WITH USER SPECIFIED DATA AND OPTIONS:
 File name:tmdlllw.inp

 INFO FOR LA-QUAL OUTPUT FILE:
 File name:lofotmdl.out
 Date/Time:Output produced at 09:20 on 03/12/2008
 LA-QUAL Version 8.11

 LIST OF ALL REACHES IN LA-QUAL OUTPUT FILE:
  Reach   1 (Elements   1 - 69) is in subsegment 120708 Lost Lake
  Reach   2 (Elements   70 - 127) is in subsegment 120708 Lost Lake Pass
  Reach   3 (Elements 128 - 182) is in subsegment 120708 Blue Hammock B
  Reach   4 (Elements 183 - 332) is in subsegment 120708 Four League Ba
  Reach   5 (Elements 333 - 397) is in subsegment 120708 Four League Ba
  Reach   6 (Elements 398 - 432) is in subsegment 120708 Oyster Bayou

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 CALCULATIONS FOR LOADS FROM NPS INFLOWS (HEADWATERS, TRIBUTARIES, AND INCREMENTAL INFLOW):

 Equation used: (Load, kg/day) = (Inflow rate, m3/sec) * (Conc., mg/L) * 1.0E-6 kg/mg * 1.0E3 L/m3 *
                                                                                    86400 sec/day

 Values from LA-QUAL output:

Reach or Element number	Inflow rate (m3/sec)	CBODu conc. (mg/L)	Organic N conc. (mg/L)	Ammonia N conc. (mg/L)	NO2+NO3 N conc. (mg/L)	Name of inflow
1	0.02800	5.88	1.40	0.10	0.00	Bayou de Cade
183	0.02800	6.01	0.57	0.10	0.00	Atchafalaya Bay

 Calculated values:

Element number	CBODu load (kg/day)	Organic N load (kg/day)	Ammonia N load (kg/day)	NO2+NO3 N load (kg/day)
1	14.22	3.39	0.24	0.00
183	14.54	1.38	0.24	0.00
Subsegment totals:	0.00	4.77	0.48	-NaN

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CALCULATIONS FOR NONPOINT SOURCE MASS LOADS IN DATA TYPE 19:

Values from LA-QUAL output:

Reach number	CBODu mass load (kg/day)	Organic N mass load (kg/day)
1	42000.00	600.00
2	2000.00	90.00
3	5500.00	300.00
4	125000.00	2400.00
5	20000.00	500.00
6	4000.00	100.00
Subsegment totals	198500.00	3990.00

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CALCULATIONS FOR LOADS FROM SOD AND BENTHIC AMMONIA:

SOD temperature correction factor used in LA-QUAL model: 1.065 (default)

Equations used: SOD temp. corrected = (SOD at 20 C) * 1.065^(Water temp - 20 C)
SOD load = (SOD temp. corrected, g/m2/day) * (Surface area, m2) * 1.0E-3 kg/g
Benthic NH3-N load = (Benthic ammonia N, g/m2/day) * (Surface area, m2) * 1.0E-3 kg/g

		Values from LA-QUAL output:				Calculated values:		
Reach number	Element number	Water temp. (deg C)	Surface area (m2)	SOD at 20 C (g/m2/day)	Benthic ammonia N (g/m2/day)	SOD temp. corrected (g/m2/day)	SOD load (kg/day)	Benthic NH3-N load (kg/day)
1	1	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	2	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	3	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	4	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	5	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	6	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	7	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	8	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	9	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	10	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	11	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	12	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	13	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	14	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	15	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	16	22.50	255616.0	0.290	0.00	0.290	74.13	0.00

1	17	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	18	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	19	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	20	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	21	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	22	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	23	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	24	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	25	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	26	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	27	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	28	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	29	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	30	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	31	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	32	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	33	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	34	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	35	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	36	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	37	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	38	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	39	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	40	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	41	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	42	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	43	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	44	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	45	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	46	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	47	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	48	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	49	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	50	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	51	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	52	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	53	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	54	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	55	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	56	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	57	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	58	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	59	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	60	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	61	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	62	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	63	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	64	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	65	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	66	22.50	255616.0	0.290	0.00	0.290	74.13	0.00

1	67	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	68	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
1	69	22.50	255616.0	0.290	0.00	0.290	74.13	0.00
2	70	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	71	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	72	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	73	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	74	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	75	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	76	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	77	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	78	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	79	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	80	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	81	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	82	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	83	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	84	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	85	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	86	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	87	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	88	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	89	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	90	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	91	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	92	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	93	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	94	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	95	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	96	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	97	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	98	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	99	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	100	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	101	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	102	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	103	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	104	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	105	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	106	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	107	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	108	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	109	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	110	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	111	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	112	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	113	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	114	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	115	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	116	22.50	54779.0	0.290	0.00	2.220	121.61	0.00

2	117	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	118	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	119	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	120	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	121	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	122	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	123	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	124	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	125	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	126	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
2	127	22.50	54779.0	0.290	0.00	2.220	121.61	0.00
3	128	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	129	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	130	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	131	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	132	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	133	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	134	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	135	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	136	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	137	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	138	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	139	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	140	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	141	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	142	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	143	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	144	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	145	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	146	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	147	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	148	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	149	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	150	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	151	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	152	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	153	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	154	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	155	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	156	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	157	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	158	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	159	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	160	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	161	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	162	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	163	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	164	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	165	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	166	22.50	54658.0	0.290	0.00	3.570	195.13	0.00

3	167	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	168	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	169	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	170	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	171	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	172	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	173	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	174	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	175	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	176	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	177	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	178	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	179	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	180	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	181	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
3	182	22.50	54658.0	0.290	0.00	3.570	195.13	0.00
4	183	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	184	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	185	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	186	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	187	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	188	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	189	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	190	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	191	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	192	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	193	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	194	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	195	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	196	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	197	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	198	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	199	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	200	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	201	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	202	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	203	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	204	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	205	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	206	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	207	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	208	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	209	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	210	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	211	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	212	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	213	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	214	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	215	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	216	22.50	429826.0	0.290	0.00	0.620	266.49	0.00

4	217	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	218	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	219	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	220	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	221	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	222	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	223	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	224	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	225	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	226	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	227	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	228	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	229	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	230	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	231	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	232	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	233	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	234	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	235	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	236	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	237	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	238	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	239	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	240	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	241	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	242	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	243	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
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4	245	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	246	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	247	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	248	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	249	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	250	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	251	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	252	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	253	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	254	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	255	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	256	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	257	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	258	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	259	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	260	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	261	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	262	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	263	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	264	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	265	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	266	22.50	429826.0	0.290	0.00	0.620	266.49	0.00

4	267	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	268	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	269	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	270	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	271	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	272	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	273	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	274	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	275	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	276	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	277	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	278	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	279	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	280	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	281	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	282	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
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4	284	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	285	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	286	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	287	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	288	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	289	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	290	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	291	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	292	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	293	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	294	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	295	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	296	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	297	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	298	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	299	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	300	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	301	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	302	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	303	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	304	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	305	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	306	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	307	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	308	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	309	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	310	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	311	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	312	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	313	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	314	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	315	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	316	22.50	429826.0	0.290	0.00	0.620	266.49	0.00

4	317	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	318	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	319	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	320	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	321	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	322	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	323	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	324	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	325	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	326	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	327	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	328	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	329	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	330	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	331	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
4	332	22.50	429826.0	0.290	0.00	0.620	266.49	0.00
5	333	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	334	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	335	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	336	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	337	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	338	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	339	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	340	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	341	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	342	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	343	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	344	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	345	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	346	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	347	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	348	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	349	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	350	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	351	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	352	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	353	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	354	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	355	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	356	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	357	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	358	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	359	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	360	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	361	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	362	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	363	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	364	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	365	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	366	22.50	297487.0	0.290	0.00	1.050	312.36	0.00

5	367	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	368	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	369	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	370	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	371	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	372	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	373	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	374	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	375	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	376	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	377	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	378	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	379	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	380	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	381	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	382	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	383	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	384	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	385	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	386	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	387	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	388	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	389	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	390	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	391	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	392	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	393	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	394	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	395	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	396	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
5	397	22.50	297487.0	0.290	0.00	1.050	312.36	0.00
6	398	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	399	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	400	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	401	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	402	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	403	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	404	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	405	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	406	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	407	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	408	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	409	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	410	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	411	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	412	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	413	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	414	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	415	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	416	22.50	20931.0	0.290	0.00	2.460	51.49	0.00

6	417	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	418	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	419	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	420	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	421	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	422	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	423	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	424	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	425	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	426	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	427	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	428	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	429	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	430	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	431	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
6	432	22.50	20931.0	0.290	0.00	2.460	51.49	0.00
							---------	---------
				Subsegment totals:			84979.79	0.00

==========

CALCULATIONS FOR LOADS FROM POINT SOURCE DISCHARGES EXPLICITLY MODELED:

For this subsegment, there are no point source discharges explicitly modeled.

==========

CALCULATIONS FOR LOADS FROM POINT SOURCE DISCHARGES NOT EXPLICITLY MODELED:

For this subsegment, there are no point source discharges not explicitly modeled.

==========

SUMMARY OF NONPOINT SOURCE OXYGEN DEMAND FOR THIS SUBSEGEMENT:

Equations used: Organic N oxygen demand, kg/day = 4.3300 * Organic N load, kg/day of N
Ammonia N oxygen demand, kg/day = 4.3300 * Ammonia N load, kg/day of N
Margin of safety = 10.0% * nonpoint source load
Future Growth = 10.0% * nonpoint source load
Load Allocation = 80.0% * nonpoint source load

Values from calculations above

			Nitrogen loads (kg/day of N):		
	SOD (kg/day)	CBODu (kg/day)	Organic (kg/day)	Ammonia (kg/day)	NO2+NO3 N (kg/day)
NPS inflows	N/A	0.00	4.77	0.48	-NaN

Mass Loads (data type 19)	N/A	198500.00	3990.00	N/A	N/A
SOD and Benthic	84979.79	N/A	N/A	0.00	N/A

Calculated loads of oxygen demand:

		Oxygen demand loads:		Total Oxygen
	SOD (kg/day)	CBODu (kg/day)	Organic (kg/day)	Ammonia (kg/day)	demand (kg/day)
NPS inflows	N/A	0.00	20.65	2.08	22.73
Mass Loads (data type 19)	N/A	198500.00	17276.70	N/A	215776.70
SOD and Benthic	84979.79	N/A	N/A	0.00	84979.79
Total for all NPS loads	84979.79	198500.00	17297.35	2.08	300779.22
NPS future growth (10.0%)	8497.98	19850.00	1729.74	0.21	30077.92
NPS margin of safety (10.0%)	8497.98	19850.00	1729.74	0.21	30077.92
NPS load allocation (80.0%)	67983.83	158800.00	13837.87	1.66	240623.38

==========

SUMMARY OF POINT SOURCE OXYGEN DEMAND FOR THIS SUBSEGEMENT

For this subsegment, there are no point source discharges either modeled or unmodeled in this subsegment.

==========

NUTRIENT TMDL CALCULATIONS:

Assumptions: Naturally occurring ratio of total N to total P = 1.00000000

Equations used: Total N = (Organic N) + (Ammonia N) + (NO2+NO3 N)
Total P = (Total N) / (Naturally occurring ratio of total N to total P)
NPS margin of safety = 10.0% * nonpoint source load
NPS Future Growth = 10.0% * nonpoint source load
NPS load allocation = 80.0% * nonpoint source load
Margin of safety for all point sources = 10.0% * total point source load
Future Growth for all point soures = 10.0% * nonpoint source load
Wasteload allocation (WLA) for modeled point source = 80.0% * modeled load
Wasteload allocation (WLA) for minor point sources = 80.0% * calculated load

Nonpoint sources:

	Organic N (kg/day)	Ammonia N (kg/day)	NO2+NO3 N (kg/day)	Total N (kg/day)	Total P (kg/day)
Total for all NPS loads	3994.77	0.48	-NaN	-NaN	-NaN
NPS margin of safety (10.0%)	399.48	0.05	-NaN	-NaN	-NaN
NPS Future Growth (10.0%)	399.48	0.05	-NaN	-NaN	-NaN
NPS load allocation (80.0%)	3195.82	0.43	-NaN	-NaN	-NaN

Point sources:

	Organic N (kg/day)	Ammonia N (kg/day)	NO2+NO3 N (kg/day)	Total N (kg/day)	Total P (kg/day)
Calculated load for minor point source	0.00	0.00	0.00	0.00	0.00
Total for all point source loads	0.00	0.00	-NaN	-NaN	-NaN
MOS for all point Sources (10.0%)	0.00	0.00	-NaN	-NaN	-NaN
FG for all point Sources (10.0%)	0.00	0.00	-NaN	-NaN	-NaN
WLA for minor point sources (80.0%)	0.00	0.00	0.00	0.00	0.00

APPENDIX O

Source Code for TMDL Calculation Program

SUMMARY OF TMDL CALCULATIONS FOR DO TMDLs IN RED AND SABINE BASINS

Total maximum daily load (TMDL) is sum of these six components:

- Wasteload allocations (WLA) for point sources
- Margin of safety (MOS) for point sources
- Future growth (FG) for point sources
- Load allocations (LA) for nonpoint sources
- Margin of safety (MOS) for nonpoint sources
- Future growth (FG) for nonpoint sources

Point sources:

- For this analysis, all effluent flows are set to 125% of design or expected flow (for both simulated point sources and minor point sources)

- Each load calculated as: Load, kg/day = (Flow, m^3/sec) × (Concentration, mg/L) × 86.4

- Oxygen demand from ammonia and organic nitrogen = nitrogen load × 4.33

- Total point source load = sum of point source loads simulated in model + sum of minor point source loads calculated in spreadsheet

- MOS for all point sources = 10% × total point source load
- FG for all point sources = 10% × total point source load

- WLA for each simulated point source = 80% × simulated load for that point source
- WLA for all minor point sources = 80% × total load for minor point sources

Nonpoint sources:

- This includes headwaters, tributaries, incremental inflow, sediment oxygen demand, benthic ammonia loads, mass loads of CBODu, and mass loads of organic nitrogen.

- Each load for headwaters, tributaries, and incremental inflow is calculated as:
  Load, kg/day = (Flow, m^3/sec) × (Concentration, mg/L) × 86.4

- For this analysis, the sediment oxygen demand (SOD) is corrected for temperature by multiplying the model input values times 1.065^(Temperature, °C – 20)

- Loads from SOD and benthic ammonia are calculated as:
  Load, kg/day = (rate per unit area, g/m^2/day)× (stream bottom area, m^2) × 0.001

- Oxygen demand from ammonia and organic nitrogen = nitrogen load × 4.33

- MOS for nonpoint sources = 10% × sum of all nonpoint source loads
- FG for nonpoint sources = 10% × sum of all nonpoint source loads

- LA for nonpoint sources = 80% × sum of all nonpoint source loads

```
        program pr20m6f
C**** For this prograqm to work the echo of the input and final report must be turned on:
C     1) The echo of the input provides MAJORITY of the ionformation for the calcuations,
C     2) The Hydralic, SOD, and NH3Sr data (needed for surface area for the SOD) are found
C        in the final report reach summary.

C     Printing:
C     This is printed in MSWord or VSlick by setting the left and right margins to 0.3 and 0.38
C     and setting the font to Courier New 9 pt normal text.

C     This program is specifcally formated for LA-QUAL 8.11.


C**********************************Search program (part 1)**************************************
C This whole program is written by Richard R. Bennett on 9/20/07 for LA-QUAL version 8.0
C Every variable is used in this program except

       INTEGER imp,i,a,c,d,e,f,g,h,j,k,l,m,n,o,q,k1
       Character*132 line,stream_id
       Character*8 target
       character*21 target2
       character*15 target3
       character*16 target3b,target5b,target5c,target6,t
     &arget7,target8,target9,target10
       character*36 target4


C**********All arrays are entered in the order in which they occurr in the program
C**************Input REAL arrays

      integer total_elem
      integer incr_reach(1:999)
       REAL SOD_temp_cor(1:999),C2_NH3SR(1:999),
     &incr2_CBODu_con(1:999),incr2_Org_N_con(1:999), incr2_Amm_N_con(1:
     &999),incr2_Nitrate_con(1:999), NP_BOD(1:999),NP_ORG(1:999),
     & HDWT1_Flow(1:999),incr_flow(1:999)
       INTEGER HDWT1_elem(1:999)
       REAL WSTLD_Flow(1:999),Elem_end(1:999),Elem_begin(1:999)
       character NPS_wstld_name(1:999)*25,PS_Wstld_name(1:999)*20
       REAL WSTLD2_BOD(1:999),WSTLD2_ORG(1:999),WSTLD2
     &_NH3(1:999), WSTLD2_NO3(1:999)
       REAL nps_WSTLD_Flow(1:999),nps_elem_wstld(1:999)
       REAL NPS_WSTLD2_BOD(1:999),NPS_WSTLD2_ORG(1:999),NPS_WSTLD2
     &_NH3(1:999),NPS_WSTLD2_NO3(1:999)
       REAL PS_WSTLD_Flow(1:999),ps_elem_wstld(1:999)
       REAL ps_WSTLD2_BOD(1:999),ps_WSTLD2_ORG(1:999),ps_WSTLD2
     &_NH3(1:999),ps_WSTLD2_NO3(1:999)
       Integer NP_reach(1:999),elem_wstld(1:999),num,num_pt_sour
       real ps_mos,ps_mos_per,nps_mos,nps_mos_per
       real ps_FG,ps_FG_per,nps_FG,nps_FG_per
       Real Temp(1:999),S_area_int(1:1000)
       integer elem_col_int
       character source_type(1:999)*3,reach_name(1:999)*15,wstld_name(1:
     &100)*20, hdwt1_name(1:999)*25,reach_subseg_num(1:999)*20,
     &permit_number(1:999)*20,outfall_num(1:999)*20,comment(1:999)*40,
     &comment_con(1:999)*40,nut_tmdl_need*4
       Real perm_flow(1:999),CBOD5_Perm(1:999), cod_perm(1:999),ammon_pe
     &rm(1:999),nat_rat,ammoxy_rat
       real HDWT2_BOD_con(1:999),HDWT2_ORG_con(1:999), HDWT2_NH3_con(1:1
     &00), HDWT2_NO3_con(1:999)
       real incr_outflow(1:999),incr_inflow(1:999)

C****************Character Search Strings
      target = 'CNTROL04'
      target2= 'THETA        BENTHAL'
      target3= '$$$ DATA TYPE 8'  ! Reach ID data
      target3b='$$$ DATA TYPE 11' ! Reach Initial conditions (need temps)
      target4= 'BIOLOGICAL AND PHYSICAL COEFFICIENTS' ! SOD and NH3Sr rates (Final Report)
      target5b= '$$$ DATA TYPE 16'  ! Incrmental flows
      target5c= '$$$ DATA TYPE 17'  ! Incrmental WQ
      target6= '$$$ DATA TYPE 19'   ! Mass laods
      target7= '$$$ DATA TYPE 20'   ! Headwater flows
      Target8= '$$$ DATA TYPE 21'   ! Headwater WQ
      Target9= '$$$ DATA TYPE 24'   ! Wasteload flows
```

```
      target10= '$$$ DATA TYPE 25'  ! Wastelaod WQ

C***************Array counterrs
      num=0
      num_incr=0
      num_hdwt=0
      num_wstld=0
      nps_num_wstld=0
      ps_num_wstld=0
      a=0
      cir=0
      c=0
      d=0
      e=0
      f=0
      g=0
      h=0
      j=0
      k=0
      k1=0
      l=0
      m=0
      nps=1
      ps=1
      n=0
      o=0
      q=0


      Character*70 userFilename,Laqualfilename,subsegname,subsegnumber,
     &pertime,LAQUAL_version,laqualfileoutput

      print*,'Enter user input filename: ' ! this is the TMDL program input file
      read*,userfilename                   ! it is NOT hte LA-QUAL file!!!!

      imp=1000000


C*Read input file
      OPEN(UNIT=12, FILE=userfilename, STATUS='OLD') ! input file
      Open (unit=11, FILE='tmdl-res.txt', Status='UNKNOWN')  ! output file
c      OPEN (UNIT=13, FILE='inter-res.txt', Status='UNKNOWN') ! debugging file
      REad(12,*)subsegnumber  ! subsegment number
      REad(12,*)subsegname    ! subsegment name
      read(12,*)laqualfileoutput ! LA-QUAL output file
      read(12,*)usernum          ! number of reaches in output file
      do 10 I=1,usernum          ! read subsegment number for each reach loop
10       read(12,*)reach_subseg_num(I)
      read(12,*)ps_mos_per  ! point source MOS in percent
      read(12,*)ps_FG_per   ! point source FG in percent
      read(12,*)nps_mos_per  ! nonpoint source MOS in percent
      read(12,*)nps_FG_per   ! nonpoint source FG in percent
      READ(12,*)ammoxy_rat   ! ammonia oxidation rate
      read(12,*)num_pt_sour  ! number of point sources in input file
      do 20 I=1,num_pt_sour  ! read point source data loop
         read(12,*)
         read(12,*)permit_number(I) ! permit number
         read(12,*)outfall_num(I)   ! outfall number
         read(12,*)perm_flow(I)     ! permit flow (MGD)
         read(12,*)comment(I)       ! comment (usually facility name)
         read(12,*)cbod5_perm(I)    ! CBOD5 or BOD5 permit conc in mg/L
         read(12,*)COD_perm(I)      ! COD permit conc in mg/L
         read(12,*)ammon_perm(I)    ! ammonia permit conc in mg/L
         read(12,*)comment_con(I)   ! comment for concentration
20    continue
      read(12,*)nut_tmdl_need       ! is a nutrietn TMDL needed?
      read(12,*) nat_rat            ! ratio of natural nitrogen to phosphorus

      ps_mos=ps_mos_per/100.000
      ps_FG=ps_FG_per/100.000
      nps_mos=nps_mos_per/100.000
      nps_FG=nps_FG_per/100.000

      laqualfilename=laqualfileoutput
```

```
      OPEN(UNIT=10, FILE=Laqualfilename, STATUS='OLD') ! this is teh LA-QUAL output file

1030  FORMAT(A35,3X,A25)
      DO 100 i=1,imp
      READ(10,'(A132)') line

C**********Are we at the end of the file?
      if(line(11:29).EQ.'EXECUTION COMPLETED')GO TO 900


C************ read LA-QUAL version
      if (i .EQ. 1) then
          read (line(1:32),'(A32)') LAQUAL_version
      end if

C**********when was the LA-QUAL file made and metric units
      if (line (1:6) .EQ. 'Output') then
         read(line(1:38),'(A38)') pertime
      else IF (line(1:8).EQ. target) then
1020     FORMAT (A35,3X,A10,3X,A10)

C**********Look for theta Benthal
         else IF (line(1:21).EQ. target2) then
1040        Format (A36,5X,A40)

C**********Data T8,Count number of reaches
         else IF (line (1:15) .EQ. target3) then
            Read (10,*)
            Read (10,*)
            Read (10,*)
            Read (10,*)
105         Read (10, '(A132)') stream_id
            if (stream_id(1:8).EQ. 'REACH ID')then
              num=num+1
              read(stream_ID(23:48),'(A15)')reach_name(num)
              read(stream_ID(109:111),)elem_begin(num)
              read(stream_ID(116:118),)elem_end(num)
              total_elem=elem_end(num)
              go to 105
            end if

C**********Data T11, read temp
      else IF (line (1:16).EQ. target3b) then
            READ (10,*)
            READ (10,*)
            READ (10,*)
107         READ (10,'(A132)') stream_id
            if (stream_id(1:7) .EQ. 'INITIAL') then
               q=q+1
               READ(stream_id(32:36),'(F5.0)') temp(q)
               go to 107
               end if

C**********FINAL REPORT,(read COEF-1 Bckgrd SOD and NH3SR)
      else IF (line (49:84) .EQ. target4) then
            Read (10,*)
            Read (10,*)
            Read (10,*)
            Read (10,*)
            Read (10,*)
110         Read (10, '(A132)') stream_id
            if (stream_id(1:7).NE. ' ') then
               a=a+1
               READ(Stream_id(1:4),'(I4)')elem
               READ(stream_id(68:73),'(F7.0)') SOD_temp_cor(elem)
               READ(Stream_id(106:111),'(F6.0)') C2_NH3SR(elem)
c               elem is used to put them in numerical order, NOT
c               in the order they are read from the LA_QUAL file!
c               (this only comes into play for branched models)
1060        FORMAT (A35,5X,A10,5X,A10)
            GO TO 110
            end if

C***********Data Type (incremenatal flow data part1)
```

```
       else if (line(1:16) .EQ. target5b) then
            read(10,*)
            read(10,*)
            read(10,*)
117         read(10,'(A132)')stream_id
            if (stream_id(1:6) .EQ. 'INCR-1') then
                num_incr=num_incr+1
                read(stream_id(17:19),'(I3)') incr_reach(num_incr)
                read(stream_id(32:38),'(F7.0)') incr_outflow(num_incr)
                read(stream_id(44:50),'(F7.0)') incr_inflow(num_incr)
                incr_flow(num_incr) = abs(incr_inflow(num_incr))-abs(inc
     &r_outflow(num_incr))
            go to 117
            end if

C**********Data Tyoe (incremental flow part 2)
       else if (line(1:16) .EQ. target5c) then
            num_incr=0
            read(10,*)
            read(10,*)
            read(10,*)
118          read(10,'(A132)')stream_id
            if (stream_id(1:6) .EQ. 'INCR-2') then
            num_incr=num_incr+1
            read(stream_id(37:46),'(F10.0)') incr2_CBODu_con(num_incr)
            read(stream_id(47:56),'(F10.0)') incr2_Org_N_con(num_incr)
            read(stream_id(57:66),'(F10.0)') incr2_Amm_N_con(num_incr)
            read(stream_id(67:76),'(F10.0)') incr2_Nitrate_con(num_incr)
            go to 118
            end if

C***********Data T19(reads BOD and ORG-N)
       else IF (line (1:16) .EQ. target6) then
            Read (10,*)
            Read (10,*)
            READ (10,*)
120         Read (10, '(A132)') stream_id
            if (stream_id(1:8).EQ. 'NONPOINT') then
               c=c+1
               d=d+1
               read(stream_ID(17:19),'(I3)')NP_reach(c)
               READ(stream_id(28:36),'(F9.0)')NP_BOD(c)
               READ(stream_id(38:46),'(F9.0)')NP_ORG(d)
1080        Format (A35,5X,A10,2X,A10,2X,A10)
            GO TO 120
            end if

C**********DATA T20(reads flow for HDWTR-1)
         else IF (line (1:16) .EQ. target7) then
            Read (10,*)
            READ (10,*)
            Read (10,*)
            REad (10,*)
125         Read (10, '(A132)') stream_id
            if (stream_id(1:7).EQ. 'HDWTR-1') then
               num_hdwt=num_HDwt+1
               e=e+1
               Read(stream_id(17:19),'(I3)')HDWT1_elem(e)
               read(stream_id(25:44),'(A20)')hdwt1_name(e)
               READ(stream_id(53:59),'(F7.0)') HDWT1_Flow(e)
               GO TO 125
            end if

C**********DATA T21(read BOD,ORG-N,NH3,NO3+2 for HDWTR-2)
         else IF (line (1:16) .EQ. target8) then
            Read (10,*)
            Read (10,*)
            READ (10,*)
            Read (10,*)
130         Read (10, '(A132)') stream_id
            if (stream_id(1:7).EQ. 'HDWTR-2') then
            f=f+1
            g=g+1
            h=h+1
```

```
            j=j+1
            READ(stream_id(58:66),'(F9.0)') HDWT2_BOD_con(f)
            READ(stream_id(68:76),'(F9.0)') HDWT2_ORG_con(g)
            READ(stream_id(78:86),'(F9.0)') HDWT2_NH3_con(h)
            READ(stream_id(88:96),'(F9.0)') HDWT2_NO3_con(j)
1090        Format (A35,5X,A5,5X,A5,5X,A5,5X,A5)
            GO TO 130
            end if

C**********DATA T24(flow for WSTLD-1)
          ps=1
          nps=1
          else IF (line (1:16) .EQ. target9) then
            Read (10,*)
            Read (10,*)
            Read (10,*)
            READ (10,*)
135         Read (10, '(A132)') stream_id
            if (stream_id(1:7).EQ. 'WSTLD-1') then
               num_wstld=num_wstld+1
               k=k+1
               READ(stream_id(52:59),'(F8.0)')WSTLD_Flow(k)
               read(stream_id(13:16),'(I4)')elem_wstld(k)
               read(stream_id(30:47),'(A18)')wstld_name(k)
               if (stream_id(30:32).EQ.'NPS') then !
                  nps_num_wstld=nps_num_wstld+1
                  NPS_wstld_name(nps) = wstld_name(K)
                  NPS_elem_wstld(nps) = elem_wstld(K)
                  NPS_wstld_flow(nps) = wstld_flow(K)
                  nps=nps+1
               else
                    ps_num_wstld=ps_num_wstld+1
                    PS_wstld_name(ps) = wstld_name(K)
                    PS_elem_wstld(ps) = elem_wstld(K)
                    PS_wstld_flow(ps) = wstld_flow(K)
                    ps=ps+1
c                   this loop and if statement is used to separate
c                   point and nonpoint wastelaods
               end if
            GO TO 135
            end if

C**********DATA T25(BOD,ORG-N,NH3,NO3+2) for WSTLD-2
      ps=1
      nps=1
         else IF (line (1:16) .EQ. target10) then
            Read (10,*)
            Read (10,*)
            READ (10,*)
            READ (10,*)
140         Read (10, '(A132)') stream_id
            if (stream_id(1:7).EQ. 'WSTLD-2') then
            l=l+1
            m=m+1
            n=n+1
            o=o+1
            k1=k1+1
            READ(stream_id(25:27),'(A3)')source_type(k1)
            READ(stream_id(57:66),'(F10.0)')WSTLD2_BOD(l)
            READ(stream_id(77:86),'(F10.0)')WSTLD2_ORG(m)
            READ(stream_id(87:96),'(F10.0)')WSTLD2_NH3(n)
            READ(stream_id(107:116),'(F10.0)')WSTLD2_NO3(o)
            if (source_type(K1).EQ.'NPS') then
                  nps_wstld2_bod(nps) = wstld2_bod(l)
                  nps_wstld2_org(nps) = wstld2_org(m)
                  nps_wstld2_nh3(nps) = WSTLD2_NH3(N)
                  nps_wstld2_no3(nps) = wstld2_no3(o)
                  nps=nps+1
               else
                  ps_wstld2_bod(ps) = wstld2_bod(l)
                  ps_wstld2_org(ps) = wstld2_org(m)
                  ps_wstld2_nh3(ps) = WSTLD2_NH3(N)
                  ps_wstld2_no3(ps) = wstld2_no3(o)
                  ps=ps+1
```

```
                end if
c must have blank space after else or the else will only apply to the first statement and NOT
c to all of them

1095        Format (A35,6X,A5,2X,A5,2X,A5,2X,A5,2X,A5)
            GO TO 140
            end if

C*************FINAL REPORT, hydrualic parameter
        else IF (line (1:62) .EQ. ' **********************************
     &*************** HYDRAULIC') then
             Read (10,*)
             READ (10,*)
             READ (10,*)
             READ (10,*)
             READ (10,*)
145          Read (10, '(A132)') stream_id
             if (stream_id(3:5).NE. '   ') then
c               p=p+1
C* these numbers are NOT in numerical order, they are in Branch (ie model layout) order
               read(stream_id(3:5),'(I3)')elem_col_int
               READ(stream_id(84:94),'(F11.0)')S_Area_int(elem_col_int)
               GO TO 145
            end if
1200  FORMAT (A35,5X,I4)
      END IF
100   Continue
900   CONTINUE
      Print*,'Program has finished reading the inputs!!!'


C***************************PART 2***********************************
C***********************Calculations

C*variables mostly in order of use
      real con3,con4,nps_FG_summary_org
      real mldt19_tot_cbodu, mldt19_tot_org
      real incr_CBODu(1:999), incr_Org_N(1:999), incr_Amm_N(1:999),
     &incr_NItrate(1:999)
      real incr_CBODu_tot, incr_Org_N_tot, incr_Amm_N_tot,incr_NItrate_t
     &ot
      real WSTLD2_BOD_con(1:999),WSTLD2_ORG_con(1:999),WSTLD2_NH3_con
     &(1:999),WSTLD2_NO3_con(1:999)
      real WSTLD2_BOD_cal(1:999),WSTLD2_Org_cal(1:999),WSTLD2_NH3_cal
     &(1:999),WSTLD2_NO3_cal(1:999)
      real WSTLD2_BOD_cal_tot,WSTLD2_Org_cal_tot,WSTLD2_NH3_cal_tot,
     &WSTLD2_NO3_cal_tot
      real ps_WSTLD2_BOD_con(1:999),ps_WSTLD2_ORG_con(1:999),ps_WSTLD2_N
     &H3_con(1:999),ps_WSTLD2_NO3_con(1:999)
      real ps_WSTLD2_BOD_cal(1:999),ps_WSTLD2_Org_cal(1:999),ps_WSTLD2_N
     &H3_cal(1:999),ps_WSTLD2_NO3_cal(1:999)
      real ps_WSTLD2_BOD_cal_tot, ps_WSTLD2_Org_cal_tot, ps_WSTLD2_NH3_c
     &al_tot,ps_WSTLD2_NO3_cal_tot
      real nps_WSTLD2_BOD_con(1:999),nps_WSTLD2_ORG_con(1:999),nps_WSTLD
     &2_NH3_con(1:999),nps_WSTLD2_NO3_con(1:999)
      real nps_WSTLD2_BOD_cal(1:999),nps_WSTLD2_Org_cal(1:999),nps_WSTLD
     &2_NH3_cal(1:999),nps_WSTLD2_NO3_cal(1:999)
      real nps_WSTLD2_BOD_cal_tot,nps_WSTLD2_Org_cal_tot, nps_WSTLD2_NH3
     &_cal_tot,nps_WSTLD2_NO3_cal_tot
      real nps_BOD_tot,nps_Org_N_tot,nps_NH3_N_tot,nps_NO3_tot
      real HDWT_BOD_cal(1:999), HDWT_Org_cal(1:999), HDWT_NH3_cal(1:999)
     &, HDWT_NO3_cal(1:999)
      real HDWT_BOD_cal_tot, HDWT_Org_cal_tot, HDWT_NH3_cal_tot,
     &HDWT_NO3_cal_tot
      real elem_benthis(1:1000), elem_sod(1:1000), elem_temp(1:1000)
     &,sod_load(1:1000), benthic(1:1000)
      real nps_sod_load_tot, nps_benthic_tot,fac_mos_FG
      reaL tmdl_cal_flow(1:999)
      real cbodu_tmdl_val(1:999), org_N_tmdl_val(1:999),ammon_tmdl_val(1
     &:100),no3_tmdl_val(1:999)
      real  cbodu_tmdl_cal(1:999),org_N_tmdl_cal(1:999), ammon_tmdl_cal(
     &1:100), no3_tmdl_cal(1:999)
      real  cbodu_tmdl_tot,org_N_tmdl_tot,ammon_tmdl_tot,no3_tmdl_tot
      real nps_summary_cbodu,nps_summary_org,nps_summary_ammon
```

```
 real oxy_dem_nps_org_N_tot, oxy_dem_nps_nh3_tot
 real nps_mos_sod_load_tot,nps_mos_summary_cbodu,nps_mos_summary_or
&g,nps_mos_summary_ammon,nps_mos_nps_NO3_tot
 real nps_FG_sod_load_tot,nps_FG_summary_cbodu
&,nps_FG_summary_ammon,nps_FG_nps_NO3_tot
 real nps_LA_sod_load_tot,nps_LA_summary_cbodu,nps_LA_summary_org,n
&ps_LA_summary_ammon,nps_LA_nps_NO3_tot
 real ps_summary_cbodu,ps_summary_org,ps_summary_nh3_n
 real mos_ps_summary_cbodu,mos_ps_summary_org,mos_ps_summary_nh3_n
 real FG_ps_summary_cbodu,FG_ps_summary_org,FG_ps_summary_nh3_n
 real wla_ps_cbodu_tmdl_tot,wla_ps_org_N_tmdl_tot, wla_ps_ammon_tmd
&l_tot
 real wla_ps_WSTLD2_BOD_cal(1:999),wla_ps_WSTLD2_ORG_cal(1:999),wla
&_ps_WSTLD2_NH3_cal(1:999)
 real oxy_dem_mldt19_tot_org,nps_inflows_tot_oxy_demand,
&mldt19_tot_oxy_dem,tot_oxy_dem_sod_ben
 real oxy_dem_ps_WSTLD2_Bod_cal(1:999),oxy_dem_ps_WSTLD2_ORG_cal(1:
&100),oxy_dem_ps_WSTLD2_Nh3_cal(1:999),tot_oxy_dem_nps,
&wla_min_ps_summary_tot
 real oxy_dem_ps_WSTLD2_Org_cal_tot,oxy_dem_ps_WSTLD2_NH3_cal_tot
 real nps_mos_tot_oxy_dem,nps_FG_tot_oxy_dem,nps_LA_tot_oxy_dem
 real oxy_dem_org_N_tmdl,oxy_dem_ammon_tmdl,min_ps_summary_tot,
&mod_tot_oxy_dem_ps(1:999),mos_tot_oxy_dem_summary,wla_mod_tot_oxy_
&dem_ps(1:999)
 real nut_tmdl_nps_org_N_tot,nps_tot_nitrogen_load,nps_total_P
 real ps_nut_tmdl_summary_org_N_tot,ps_nut_tmdl_summary_nh3_N_tot,
&ps_nut_tmdl_summary_no3_N_tot,ps_tot_nitrogen_final_load,ps_tot_P_
&final,ps_tot_sum_total_nitrogen_load,ps_tot_sum_total_P
 real mos_ps_nut_tmdl_sum_org_N_tot,
&mos_ps_nut_tmdl_sum_nh3_N_tot,
&mos_ps_nut_tmdl_sum_no3_N_tot,
&mos_ps_tot_nitrogen_final_load,
&mos_ps_tot_P_final
 real FG_ps_nut_tmdl_sum_org_N_tot,
&FG_ps_nut_tmdl_sum_nh3_N_tot,
&FG_ps_nut_tmdl_sum_no3_N_tot,
&FG_ps_tot_nitrogen_final_load,
&FG_ps_tot_P_final
 real wla_min_ps_nut_tmdl_sum_org,
&wla_min_ps_nut_tmdl_sum_nh3,
&wla_min_ps_nut_tmdl_sum_no3,
&wla_min_ps_nitrogen_final_load,
&wla_min_ps_P_final
 real wla_ps_WSTLD2_org_cal_sum(1:999),wla_ps_WSTLD2_NH3_cal_sum(1:
&100),wla_ps_WSTLD2_NO3_cal_sum(1:999)
 real wla_ps_total_nitrogen_load(1:999), wla_ps_total_P(1:999)
 real nps_mos_nut_tmdl_nps_Org_N_tot,nps_mos_nps_nh3_n_tot,
&nps_mos_tot_nitrogen_load,nps_mos_total_p
 real nps_FG_nut_tmdl_nps_Org_N_tot,nps_FG_nps_nh3_n_tot,
&nps_FG_tot_nitrogen_load,nps_FG_total_p
 real nps_la_nut_tmdl_nps_Org_N_tot,nps_la_nps_nh3_n_tot,
&nps_la_tot_nitrogen_load,nps_la_total_p
 real min_ps_total_nitrogen_load,min_ps_total_P
 real ps_total_nitrogen_load(1:999),ps_total_P(1:999)

 if (usernum.NE.num) then
   print*,'Usernum does not equal num, there has been a read failur
&e!',num,usernum
   Write(11,*)'This output is NOT correct!'
   end if

 mldt19_tot_cbodu=0
 mldt19_tot_org=0

 incr_CBODu_tot=0
 incr_Org_N_tot=0
 incr_Amm_N_tot=0
 incr_Nitrate_tot=0

 ps_WSTLD2_BOD_cal_tot=0
 ps_WSTLD2_Org_cal_tot=0
 ps_WSTLD2_NH3_cal_tot=0

 nps_WSTLD2_BOD_cal_tot=0
```

```
      nps_WSTLD2_Org_cal_tot=0
      nps_WSTLD2_NH3_cal_tot=0

      WSTLD2_BOD_cal_tot=0
      WSTLD2_Org_cal_tot=0
      WSTLD2_NH3_cal_tot=0

      HDWT_BOD_cal_tot=0
      HDWT_Org_cal_tot=0
      HDWT_NH3_cal_tot=0
      HDWT_NO3_cal_tot=0

      nps_sod_load_tot=0
      nps_benthic_tot=0

      cbodu_tmdl_tot=0
      org_N_tmdl_tot=0
      ammon_tmdl_tot=0
      no3_tmdl_tot=0

      fac_mos_FG=1/(1-(ps_mos+ps_FG))
      con3 = 1.00/1000000.00*1000.00*86400.00
      con4 = 3.7850000000 ! MGD * mg/L * con4,
c     con4 = 3.785 L/gal * 1.0E6 gal/MG * 1.0E-6 kg/mg

      do 180 I=1,num
      mldt19_tot_cbodu=mldt19_tot_cbodu+NP_bod(I)
      mldt19_tot_org= mldt19_tot_org+NP_org(I)
180   continue

C* Here I will arrange the elemntal surface areas into the numerical order to match the order the SOD
C* and NH3 data are in.
c          elem_col(1) = elem_col_int(1)
c          S_Area(1) = S_Area_int(1)
c      DO 185 I=2,total_elem   !need to start at 2 for comaprisons
c          elem_col(I)=I
c          if (elem_col_int(I).EQ.I) then
c             S_Area(I) = S_Area_int(I)
c          else
c
c             DO 184 R=1,total_elem  !go through the list until we get a match
c             if (Elem_col_int(R).EQ.Elem_col(I)) then
c                S_Area(I) = S_Area_int(I)
c             end if
c184          continue
c          end if

c185   continue

      cir=num_incr
      DO 190 cirr=1,cir

      incr_CBODu(cirr)=incr_flow(cirr)*incr2_CBODu_con(cirr)*con3
      incr_Org_N(cirr)=incr_flow(cirr)*incr2_Org_N_con(cirr)*con3
      incr_Amm_N(cirr)=incr_flow(cirr)*incr2_Amm_N_con(cirr)*con3
      incr_NItrate(cirr)=incr_flow(cirr)*incr2_Nitrate_con(cirr)*con3

      incr_CBODu_tot=incr_CBODu_tot+incr_CBODu(cirr)
      incr_Org_N_tot=incr_Org_N_tot+incr_Org_N(cirr)
      incr_Amm_N_tot=incr_Amm_N_tot+incr_Amm_N(cirr)
      incr_Nitrate_tot=incr_Nitrate_tot+incr_Nitrate(cirr)
190   continue

C*********** calcualtions for point soucers EXPLICITLY modeled
      cir=ps_num_wstld
      DO 194 cirr=1,cir
      ps_WSTLD2_BOD_con(cirr)=ps_wstld2_bod(cirr)
      ps_WSTLD2_ORG_con(cirr)=ps_wstld2_org(cirr)
      ps_WSTLD2_NH3_con(cirr)=ps_wstld2_nh3(cirr)
      ps_WSTLD2_NO3_con(cirr)=ps_wstld2_no3(cirr)

      ps_WSTLD2_BOD_cal(cirr)=ps_WSTLD_Flow(cirr)*ps_WSTLD2_BOD_con(cirr
     &)*con3
      ps_WSTLD2_Org_cal(cirr)=ps_WSTLD_FLow(cirr)*ps_WSTLD2_Org_con(cirr
```

```
     &)*con3
      ps_WSTLD2_NH3_cal(cirr)=ps_WSTLD_FLow(cirr)*ps_WSTLD2_NH3_con(cirr
     &)*con3
      ps_WSTLD2_NO3_cal(cirr)=ps_WSTLD_Flow(cirr)*ps_WSTLD2_NO3_con(cirr
     &)*con3

      wla_ps_WSTLD2_org_cal_sum(cirr)=ps_WSTLD2_org_cal(cirr)*(1-ps_mos-
     &ps_FG)
      wla_ps_WSTLD2_NH3_cal_sum(cirr)=ps_WSTLD2_NH3_cal(cirr)*(1-ps_mos-
     &ps_FG)
      wla_ps_WSTLD2_NO3_cal_sum(cirr)=ps_WSTLD2_NO3_cal(cirr)*(1-ps_mos-
     &ps_FG)

      ps_WSTLD2_BOD_cal_tot=ps_WSTLD2_BOD_cal_tot+ps_WSTLD2_BOD_cal(cirr
     &)
      ps_WSTLD2_Org_cal_tot=ps_WSTLD2_Org_cal_tot+ps_WSTLD2_Org_cal(cirr
     &)
      ps_WSTLD2_NH3_cal_tot=ps_WSTLD2_NH3_cal_tot+ps_WSTLD2_NH3_cal(cirr
     &)
      ps_WSTLD2_NO3_cal_tot=ps_WSTLD2_NO3_cal_tot+ps_WSTLD2_NO3_cal(cirr
     &)

       oxy_dem_ps_wstld2_bod_cal(cirr)=1*ps_WSTLD2_BOD_cal(cirr
     &)
       oxy_dem_ps_wstld2_org_cal(cirr)=ammoxy_rat*ps_wstld2_org_cal(cirr
     &)
       oxy_dem_ps_wstld2_nh3_cal(cirr)=ammoxy_rat*ps_wstld2_nh3_cal(cirr
     &)
       mod_tot_oxy_dem_ps(cirr)=oxy_dem_ps_wstld2_bod_cal(cirr)+oxy_dem_
     &ps_wstld2_org_cal(cirr)+ oxy_dem_ps_wstld2_nh3_cal(cirr)

       wla_ps_wstld2_bod_cal(cirr)=ps_wstld2_bod_cal(cirr)*(1-ps_mos-ps_
     &FG)
       wla_ps_WSTLD2_ORG_cal(cirr)=oxy_dem_ps_WSTLD2_Org_cal(cirr)*(1-ps
     &_mos-ps_FG)
       wla_ps_wstld2_nh3_cal(cirr)=oxy_dem_ps_WSTLD2_NH3_cal(cirr)*(1-ps
     &_mos-ps_FG)
       wla_mod_tot_oxy_dem_ps(cirr)=mod_tot_oxy_dem_ps(cirr)*(1-ps_mos-p
     &s_FG)

C     rounding functions (uisng the anint function)

       wla_ps_wstld2_bod_cal(cirr)=wla_ps_wstld2_bod_cal(cirr)*100
       wla_ps_wstld2_bod_cal(cirr)=anint(wla_ps_wstld2_bod_cal(cirr))
       wla_ps_wstld2_bod_cal(cirr)=wla_ps_wstld2_bod_cal(cirr)/100

       wla_ps_wstld2_org_cal(cirr)=wla_ps_wstld2_org_cal(cirr)*100
       wla_ps_wstld2_org_cal(cirr)=anint(wla_ps_wstld2_org_cal(cirr))
       wla_ps_wstld2_org_cal(cirr)=wla_ps_wstld2_org_cal(cirr)/100

       wla_ps_wstld2_nh3_cal(cirr)=wla_ps_wstld2_nh3_cal(cirr)*100
       wla_ps_wstld2_nh3_cal(cirr)=anint(wla_ps_wstld2_nh3_cal(cirr))
       wla_ps_wstld2_nh3_cal(cirr)=wla_ps_wstld2_nh3_cal(cirr)/100

       wla_mod_tot_oxy_dem_ps(cirr)=wla_mod_tot_oxy_dem_ps(cirr)*100
       wla_mod_tot_oxy_dem_ps(cirr)=anint(wla_mod_tot_oxy_dem_ps(cirr))
       wla_mod_tot_oxy_dem_ps(cirr)=wla_mod_tot_oxy_dem_ps(cirr)/100

C*************** nps wasteload calculations
194   continue
      do 196 cirr=1,nps_num_wstld
      nps_WSTLD2_BOD_con(cirr)=nps_wstld2_bod(cirr)
      nps_WSTLD2_ORG_con(cirr)=nps_wstld2_org(cirr)
      nps_WSTLD2_NH3_con(cirr)=nps_wstld2_nh3(cirr)
      nps_WSTLD2_NO3_con(cirr)=nps_wstld2_no3(cirr)

      nps_WSTLD2_BOD_cal(cirr)=nps_WSTLD_Flow(cirr)*nps_WSTLD2_BOD_con(c
     &irr)*con3
      nps_WSTLD2_Org_cal(cirr)=nps_WSTLD_FLow(cirr)*nps_WSTLD2_Org_con(c
     &irr)*con3
      nps_WSTLD2_NH3_cal(cirr)=nps_WSTLD_FLow(cirr)*nps_WSTLD2_NH3_con(c
     &irr)*con3
      nps_WSTLD2_NO3_cal(cirr)=nps_WSTLD_Flow(cirr)*nps_WSTLD2_NO3_con(c
     &irr)*con3
```

```
       nps_WSTLD2_BOD_cal_tot=nps_WSTLD2_BOD_cal_tot+nps_WSTLD2_BOD_cal(c
      &irr)
       nps_WSTLD2_Org_cal_tot=nps_WSTLD2_Org_cal_tot+nps_WSTLD2_Org_cal(c
      &irr)
       nps_WSTLD2_NH3_cal_tot=nps_WSTLD2_NH3_cal_tot+nps_WSTLD2_NH3_cal(c
      &irr)
       nps_WSTLD2_NO3_cal_tot=nps_WSTLD2_NO3_cal_tot+nps_WSTLD2_NO3_cal(c
      &irr)

       nps_WSTLD2_BOD_cal_tot=nps_WSTLD2_BOD_cal_tot*100
       nps_WSTLD2_BOD_cal_tot=anint(nps_WSTLD2_BOD_cal_tot)
       nps_WSTLD2_BOD_cal_tot=nps_WSTLD2_BOD_cal_tot/100

       nps_WSTLD2_Org_cal_tot=nps_WSTLD2_Org_cal_tot*100
       nps_WSTLD2_Org_cal_tot=anint(nps_WSTLD2_Org_cal_tot)
       nps_WSTLD2_Org_cal_tot=nps_WSTLD2_Org_cal_tot/100

       nps_WSTLD2_NH3_cal_tot=nps_WSTLD2_NH3_cal_tot*100
       nps_WSTLD2_NH3_cal_tot=anint(nps_WSTLD2_NH3_cal_tot)
       nps_WSTLD2_NH3_cal_tot=nps_WSTLD2_NH3_cal_tot/100

       nps_WSTLD2_NO3_cal_tot=nps_WSTLD2_NO3_cal_tot*100
       nps_WSTLD2_NO3_cal_tot=anint(nps_WSTLD2_NO3_cal_tot)
       nps_WSTLD2_NO3_cal_tot=nps_WSTLD2_NO3_cal_tot/100


c**********only wasteloads can be divided into point source and non point sources
196    continue

       do 198 cirr= 1, num_wstld
       WSTLD2_BOD_con(cirr)=WSTLD2_BOD(cirr)
       WSTLD2_ORG_con(cirr)=WSTLD2_Org(cirr)
       WSTLD2_NH3_con(cirr)=WSTLD2_NH3(cirr)
       WSTLD2_NO3_con(cirr)=WSTLD2_NO3(cirr)

       WSTLD2_BOD_cal(cirr)=WSTLD_Flow(cirr)*WSTLD2_BOD_con(cirr)*con3
       WSTLD2_Org_cal(cirr)=WSTLD_FLow(cirr)*WSTLD2_Org_con(cirr)*con3
       WSTLD2_NH3_cal(cirr)=WSTLD_FLow(cirr)*WSTLD2_NH3_con(cirr)*con3
       WSTLD2_NO3_cal(cirr)=WSTLD_Flow(cirr)*WSTLD2_NO3_con(cirr)*con3

       WSTLD2_BOD_cal_tot=WSTLD2_BOD_cal_tot+WSTLD2_BOD_cal(cirr)
       WSTLD2_Org_cal_tot=WSTLD2_Org_cal_tot+WSTLD2_Org_cal(cirr)
       WSTLD2_NH3_cal_tot=WSTLD2_NH3_cal_tot+WSTLD2_NH3_cal(cirr)
       WSTLD2_NO3_cal_tot=WSTLD2_NO3_cal_tot+WSTLD2_NO3_cal(cirr)

       wstld2_bod_cal_tot=wstld2_bod_cal_tot*100
       wstld2_bod_cal_tot=anint(wstld2_bod_cal_tot)
       wstld2_bod_cal_tot=wstld2_bod_cal_tot/100

       wstld2_org_cal_tot=wstld2_org_cal_tot*100
       wstld2_org_cal_tot=anint(wstld2_org_cal_tot)
       wstld2_org_cal_tot=wstld2_org_cal_tot/100

       wstld2_NH3_cal_tot=wstld2_NH3_cal_tot*100
       wstld2_NH3_cal_tot=anint(wstld2_NH3_cal_tot)
       wstld2_NH3_cal_tot=wstld2_NH3_cal_tot/100

       wstld2_NO3_cal_tot=wstld2_NO3_cal_tot*100
       wstld2_NO3_cal_tot=anint(wstld2_NO3_cal_tot)
       wstld2_NO3_cal_tot=wstld2_NO3_cal_tot/100
198    continue

       cir=num_hdwt

       DO 199 cirr=1,cir

       HDWT_BOD_cal(cirr)=HDWT1_Flow(cirr)*HDWT2_BOD_con(cirr)*con3
       HDWT_Org_cal(cirr)=HDWT1_FLow(cirr)*HDWT2_Org_con(cirr)*con3
       HDWT_NH3_cal(cirr)=HDWT1_FLow(cirr)*HDWT2_NH3_con(cirr)*con3
       HDWT_NO3_cal(cirr)=HDWT1_Flow(cirr)*HDWT2_NO3_con(cirr)*con3

       HDWT_BOD_cal_tot=HDWT_BOD_cal_tot+HDWT_BOD_cal(cirr)
```

```
      HDWT_Org_cal_tot=HDWT_Org_cal_tot+HDWT_Org_cal(cirr)
      HDWT_NH3_cal_tot=HDWT_NH3_cal_tot+HDWT_NH3_cal(cirr)
      HDWT_NO3_cal_tot=HDWT_NO3_cal_tot+HDWT_NO3_cal(cirr)

      HDWT_bod_cal_tot=HDWT_bod_cal_tot*100
      HDWT_bod_cal_tot=anint(HDWT_bod_cal_tot)
      HDWT_bod_cal_tot=wstld2_bod_cal_tot/100

      HDWT_org_cal_tot=HDWT_org_cal_tot*100
      HDWT_org_cal_tot=anint(HDWT_org_cal_tot)
      HDWT_org_cal_tot=HDWT_org_cal_tot/100

      HDWT_NH3_cal_tot=HDWT_NH3_cal_tot*100
      HDWT_NH3_cal_tot=anint(HDWT_NH3_cal_tot)
      HDWT_NH3_cal_tot=HDWT_NH3_cal_tot/100

      HDWT_NO3_cal_tot=HDWT_NO3_cal_tot*100
      HDWT_NO3_cal_tot=anint(HDWT_NO3_cal_tot)
      HDWT_NO3_cal_tot=HDWT_NO3_cal_tot/100



199   Continue


C*************** total up NPS values from incremetnal flow, tribs and headwaters
      nps_BOD_tot=incr_CBODu_tot+nps_WSTLD2_BOD_cal_tot+
     &HDWT_BOD_cal_tot
      nps_Org_N_tot=incr_Org_N_tot+nps_WSTLD2_Org_cal_tot+
     &HDWT_Org_cal_tot
      nps_NH3_N_tot=incr_Amm_N_tot+nps_WSTLD2_NH3_cal_tot+HDWT_NH3
     &_cal_tot
      nps_NO3_tot=incr_Nitrate_tot+nps_WSTLD2_NO3_cal_tot+HDWT_NO3_cal_t
     &ot

C************* total up oxygen demand for NPS
      oxy_dem_nps_org_N_tot=ammoxy_rat*nps_org_N_tot
      oxy_dem_nps_nh3_tot=ammoxy_rat*nps_nh3_N_tot
      oxy_dem_mldt19_tot_org=ammoxy_rat*mldt19_tot_org


C************* create the element and reach column, as well as other columns for
C************* for SOD and benthic ammonia
      DO 201 I=1,num
          DO 200 J=elem_begin(I), elem_end(I)
               elem_benthis(J)= C2_NH3SR (I)
               elem_sod(J)=SOD_temp_cor(I)
               elem_temp(J)=temp(I)
200            continue
201   continue



      do 202 I=1,total_elem
c               sod_temp_cor(I)=elem_sod(I)*1.065**(elem_temp(I)-20)
               sod_load(I)=sod_temp_cor(I)*s_area_int(I)*1.00/1000.00
               benthic(I)=elem_benthis(I)*s_area_int(I)*1.00/1000.00
               nps_sod_load_tot=nps_sod_load_tot+sod_load(I)
               nps_benthic_tot=nps_benthic_tot+benthic(I)
202   continue


C*****************calculate values for PS and NPS summary sections
      oxy_dem_nps_benthic_tot=ammoxy_rat*nps_benthic_tot

      nps_inflows_tot_oxy_demand=nps_BOD_tot+oxy_dem_nps_org_N_tot+oxy_d
     &em_nps_nh3_tot
      mldt19_tot_oxy_dem=mldt19_tot_cbodu+oxy_dem_mldt19_tot_org
      tot_oxy_dem_sod_ben=nps_sod_load_tot+oxy_dem_nps_benthic_tot

      tot_oxy_dem_nps=nps_inflows_tot_oxy_demand+mldt19_tot_oxy_dem+tot_
     &oxy_dem_sod_ben

      oxy_dem_ps_WSTLD2_Org_cal_tot=ps_WSTLD2_Org_cal_tot*ammoxy_rat
```

```
 oxy_dem_ps_WSTLD2_NH3_cal_tot=ps_WSTLD2_NH3_cal_tot*ammoxy_rat

 nps_summary_cbodu=nps_bod_tot+mldt19_tot_cbodu
 nps_summary_org=oxy_dem_nps_org_N_tot+oxy_dem_mldt19_tot_org
 nps_summary_ammon=oxy_dem_nps_nh3_tot+oxy_dem_nps_benthic_tot

 nps_mos_sod_load_tot=nps_sod_load_tot*nps_mos
 nps_mos_sod_load_tot=nps_mos_sod_load_tot*100
 nps_mos_sod_load_tot=anint(nps_mos_sod_load_tot)/100

 nps_mos_summary_cbodu=nps_summary_cbodu*nps_mos
 nps_mos_summary_cbodu=nps_mos_summary_cbodu*100
 nps_mos_summary_cbodu=anint(nps_mos_summary_cbodu)/100

 nps_mos_summary_org=nps_summary_org*nps_mos
 nps_mos_summary_org=nps_mos_summary_org*100
 nps_mos_summary_org=anint(nps_mos_summary_org)/100

 nps_mos_summary_ammon=nps_summary_ammon*nps_mos
 nps_mos_summary_ammon=nps_mos_summary_ammon*100
 nps_mos_summary_ammon=anint(nps_mos_summary_ammon)/100

 nps_FG_sod_load_tot=nps_sod_load_tot*nps_FG
 nps_FG_sod_load_tot=nps_FG_sod_load_tot*100
 nps_FG_sod_load_tot=anint(nps_FG_sod_load_tot)/100


 nps_FG_summary_cbodu=nps_summary_cbodu*nps_FG
 nps_FG_summary_cbodu=nps_FG_summary_cbodu*100
 nps_FG_summary_cbodu=anint(nps_FG_summary_cbodu)/100

 nps_FG_summary_org=nps_summary_org*nps_FG
 nps_FG_summary_org=nps_FG_summary_org*100
 nps_FG_summary_org=anint(nps_FG_summary_org)/100

 nps_FG_summary_ammon=nps_summary_ammon*nps_FG
 nps_FG_summary_ammon=nps_FG_summary_ammon*100
 nps_FG_summary_ammon=anint(nps_FG_summary_ammon)/100


 nps_mos_tot_oxy_dem=tot_oxy_dem_nps*nps_mos
 nps_mos_tot_oxy_dem=nps_mos_tot_oxy_dem*100
 nps_mos_tot_oxy_dem=anint(nps_mos_tot_oxy_dem)/100


 nps_FG_tot_oxy_dem=tot_oxy_dem_nps*nps_FG
 nps_FG_tot_oxy_dem=nps_FG_tot_oxy_dem*100
 nps_FG_tot_oxy_dem=anint(nps_FG_tot_oxy_dem)/100


 nps_mos_nps_NO3_tot=nps_NO3_tot*nps_mos
 nps_mos_nps_NO3_tot=nps_mos_nps_NO3_tot*100
 nps_mos_nps_NO3_tot=anint(nps_mos_nps_NO3_tot)/100


 nps_FG_nps_NO3_tot=nps_NO3_tot*nps_FG
 nps_FG_nps_NO3_tot=nps_FG_nps_NO3_tot*100
 nps_FG_nps_NO3_tot=anint(nps_FG_nps_NO3_tot)/100


 nps_LA_sod_load_tot=nps_sod_load_tot-nps_MOS_sod_load_tot-nps_FG_s
&od_load_tot
 nps_LA_summary_cbodu=nps_summary_cbodu-nps_MOS_summary_cbodu-nps_F
&G_summary_cbodu
 nps_LA_summary_org=nps_summary_org-nps_MOS_summary_org-nps_FG_summ
&ary_org
 nps_LA_summary_ammon=nps_summary_ammon-nps_MOS_summary_ammon-nps_F
&G_summary_ammon
 nps_LA_nps_NO3_tot=nps_NO3_tot-nps_MOS_nps_NO3_tot-nps_FG_nps_NO3_
&tot

 nps_LA_tot_oxy_dem=tot_oxy_dem_nps-nps_mos_tot_oxy_dem-nps_fg_tot_
&oxy_dem
```

```
c these values are from reading data from La_qual output (and thus ARE NOT minor point sources)
      ps_BOD_tot=ps_WSTLD2_BOD_cal_tot
      ps_Org_N_tot=ps_WSTLD2_Org_cal_tot
      ps_NH3_N_tot=ps_WSTLD2_NH3_cal_tot
      ps_NO3_tot=ps_WSTLD2_NO3_cal_tot

c this produces the "values for tmdl calculations table"
      do 204 I =1, num_pt_sour
               cbodu_tmdl_val(I)=2.30*cbod5_perm(I)
               if (CBOD5_perm(I).EQ.0.OR.CBOD5_perm(I).EQ.-999)then
                  cbodu_tmdl_val(I)=1.00*cod_perm(I)
                  if (cod_perm(I).EQ.0.OR.Cod_perm(I).EQ.-999)then
                  cbodu_tmdl_val(I)=0
               end if
               end if

               ammon_tmdl_val(I)=ammon_perm(I)
               if (ammon_perm(I) .EQ.-999) then
                  ammon_tmdl_val(I)=2*cbod5_perm(I)
                  if (cbod5_perm(I).EQ.-999) then
                     ammon_tmdl_val(I)=0
               end if
               end if

               no3_tmdl_val(I) = 0

               org_N_tmdl_val(I)=ammon_tmdl_val(I)*2.00

               if (cbod5_perm(I).EQ.0.AND.ammon_perm(I).EQ.0) then
               org_N_tmdl_val(I)=0
               ammon_tmdl_val(I)=0
               no3_tmdl_val(I) = 0
               end if

204   continue

C *** caluculate tmdl vlues for tmdl load chart
      do 206 I=1,num_pt_sour
         tmdl_cal_flow(I)=perm_flow(I)*fac_mos_FG
         cbodu_tmdl_cal(I) = tmdl_cal_flow(I)*cbodu_tmdl_val(I)*con4
         org_N_tmdl_cal(I) = tmdl_cal_flow(I)*org_N_tmdl_val(I)*con4
         ammon_tmdl_cal(I) = tmdl_cal_flow(I)*ammon_tmdl_val(I)*con4
         no3_tmdl_cal(I) = tmdl_cal_flow(I)*no3_tmdl_val(I) *con4

         cbodu_tmdl_tot=cbodu_tmdl_tot+cbodu_tmdl_cal(I)
         org_N_tmdl_tot=org_N_tmdl_tot+org_N_tmdl_cal(I)
         ammon_tmdl_tot=ammon_tmdl_tot+ammon_tmdl_cal(I)
         no3_tmdl_tot=no3_tmdl_tot+no3_tmdl_cal(I)

         oxy_dem_org_N_tmdl= org_N_tmdl_tot*ammoxy_rat
         oxy_dem_ammon_tmdl= ammon_tmdl_tot*ammoxy_rat


206   continue
c*********calculate tmdl values for summary chart (using ammox multiplier



c first term is read in from La-qual second is from User supplied data
c more summary calculations
      ps_summary_cbodu=ps_bod_tot+cbodu_tmdl_tot
      ps_summary_org= oxy_dem_ps_wstld2_org_cal_tot+ oxy_dem_org_N_tmdl

      ps_summary_nh3_n=oxy_dem_ps_WSTLD2_NH3_cal_tot+oxy_dem_ammon_tmdl

      tot_oxy_dem_summary=ps_summary_cbodu+ps_summary_org+ps_summary_nh3
     &_n

      mos_ps_summary_cbodu=ps_summary_cbodu*ps_mos
      mos_ps_summary_org=ps_summary_org*ps_mos
      mos_ps_summary_nh3_n= ps_summary_nh3_n*ps_mos

      FG_ps_summary_cbodu=ps_summary_cbodu*ps_FG
      FG_ps_summary_org=ps_summary_org*ps_FG
```

```
      FG_ps_summary_nh3_n= ps_summary_nh3_n*ps_FG


      min_ps_summary_tot=cbodu_tmdl_tot+oxy_dem_org_N_tmdl+oxy_dem_ammon
     &_tmdl

      mos_tot_oxy_dem_summary=tot_oxy_dem_summary*ps_mos
      FG_tot_oxy_dem_summary=tot_oxy_dem_summary*ps_FG

c WLA for minor point sources
      wla_ps_cbodu_tmdl_tot=cbodu_tmdl_tot*(1-ps_mos-ps_FG)
      wla_ps_org_N_tmdl_tot=oxy_dem_org_N_tmdl*(1-ps_mos-ps_FG)
      wla_ps_ammon_tmdl_tot=oxy_dem_ammon_tmdl*(1-ps_mos-ps_FG)
      wla_min_ps_summary_tot=min_ps_summary_tot*(1-ps_mos-ps_FG)


C********** Nutrient TMDL calucaltions (a lot of the NPS calcualatiosn are done above
C********* in lines 677-684
C just need to take nps_org_N_tot from
C the first equtaion (which has org_N from heads, tribs and increments)
C and add mass loads data type 19
C (seen in last term),


C******** the loop below should be with the section "calcualtions for point sources explicitly modeled
C*since the loop below is all PS stuff but oh well I do not want to risk moving it

      if (ps_num_wstld .EQ.0) then
      go to 207
      end if



      do 208 cir=1,ps_num_wstld
             ps_total_nitrogen_load(cir)=ps_WSTLD2_ORG_cal(cir)+ps_WSTLD
     &2_Nh3_cal(cir)+ps_WSTLd2_NO3_cal(cir)
             ps_total_P(cir)=ps_total_nitrogen_load(cir)/nat_rat

             ps_tot_sum_total_nitrogen_load=ps_tot_sum_total_nitrogen_lo
     &ad+ps_total_nitrogen_load(cir)
             ps_tot_sum_total_P=ps_tot_sum_total_P+ps_total_P(cir)

             wla_ps_total_nitrogen_load(cir)=ps_total_nitrogen_load(cir)
     &*(1-ps_mos-ps_FG)
             wla_ps_total_P(cir)=ps_total_P(cir)*(1-ps_mos-ps_FG)

208   continue



207   nut_tmdl_nps_Org_N_tot=nps_org_N_tot+mldt19_tot_org
      nps_tot_nitrogen_load= nut_tmdl_nps_org_N_tot+nps_nh3_n_tot+
     &nps_NO3_tot

      nps_total_P=nps_tot_nitrogen_load/nat_rat

      nps_mos_nut_tmdl_nps_Org_N_tot=nut_tmdl_nps_Org_N_tot*nps_mos
      nps_mos_nps_nh3_n_tot=nps_nh3_n_tot*nps_mos
      nps_mos_nps_NO3_tot=nps_NO3_tot*nps_mos
      nps_mos_tot_nitrogen_load=nps_tot_nitrogen_load*nps_mos
      nps_mos_total_p=NPS_total_p*nps_mos

      nps_FG_nut_tmdl_nps_Org_N_tot=nut_tmdl_nps_Org_N_tot*nps_FG
      nps_FG_nps_nh3_n_tot=nps_nh3_n_tot*nps_FG
      nps_FG_nps_NO3_tot=nps_NO3_tot*nps_FG
      nps_FG_tot_nitrogen_load=nps_tot_nitrogen_load*nps_FG
      nps_FG_total_p=NPS_total_p*nps_FG

      nps_la_nut_tmdl_nps_Org_N_tot=nut_tmdl_nps_Org_N_tot*(1-nps_mos-np
     &s_FG)
      nps_la_nps_nh3_n_tot=nps_nh3_n_tot*(1-nps_mos)
      nps_la_nps_NO3_tot=nps_NO3_tot*(1-nps_mos)
      nps_la_tot_nitrogen_load=nps_tot_nitrogen_load*(1-nps_mos)
```

```
      nps_la_total_p=npS_total_p*(1-nps_mos)

      min_ps_total_nitrogen_load=org_N_tmdl_tot+ammon_tmdl_tot+no3_tmdl_
     &tot
      min_ps_total_P=min_ps_total_nitrogen_load/nat_rat

      ps_nut_tmdl_summary_org_N_tot=ps_WSTLD2_Org_cal_tot+org_N_tmdl_tot
      ps_nut_tmdl_summary_nh3_N_tot=ps_WSTLD2_NH3_cal_tot+ammon_tmdl_tot
      ps_nut_tmdl_summary_no3_N_tot=ps_WSTLD2_NO3_cal_tot+no3_tmdl_tot

      ps_tot_nitrogen_final_load=min_ps_total_nitrogen_load+ps_tot_sum_t
     &otal_nitrogen_load
      ps_tot_P_final=min_ps_total_P+ps_tot_sum_total_P

      mos_ps_nut_tmdl_sum_org_N_tot=ps_nut_tmdl_summary_org_N_tot*ps_mos
      mos_ps_nut_tmdl_sum_nh3_N_tot=ps_nut_tmdl_summary_nh3_N_tot*ps_mos
      mos_ps_nut_tmdl_sum_no3_N_tot=ps_nut_tmdl_summary_no3_N_tot*ps_mos

      FG_ps_nut_tmdl_sum_org_N_tot=ps_nut_tmdl_summary_org_N_tot*ps_FG
      FG_ps_nut_tmdl_sum_nh3_N_tot=ps_nut_tmdl_summary_nh3_N_tot*ps_FG
      FG_ps_nut_tmdl_sum_no3_N_tot=ps_nut_tmdl_summary_no3_N_tot*ps_FG

      mos_ps_tot_nitrogen_final_load=ps_tot_nitrogen_final_load*ps_mos
      mos_ps_tot_P_final=ps_tot_P_final*ps_mos

      FG_ps_tot_nitrogen_final_load=ps_tot_nitrogen_final_load*ps_FG
      FG_ps_tot_P_final=ps_tot_P_final*ps_FG

      wla_min_ps_nut_tmdl_sum_org=org_N_tmdl_tot*(1-ps_mos-ps_FG)
      wla_min_ps_nut_tmdl_sum_nh3=ammon_tmdl_tot*(1-ps_mos-ps_FG)
      wla_min_ps_nut_tmdl_sum_no3=no3_tmdl_tot*(1-ps_mos-ps_FG)

      wla_min_ps_nitrogen_final_load=min_ps_total_nitrogen_load*(1-p
     &s_mos-ps_FG)
      wla_min_ps_P_final=min_ps_total_P*(1-ps_mos-ps_FG)

c590   write(11,6090)'Calculated load for minor point sources   ',org_N_t
c     &mdl_tot,ammon_tmdl_tot,no3_tmdl_tot,min_ps_total_nitrogen_load,min
c     &_ps_total_P



c      write(11,6090)'Total for all point source loads             ',ps_n
c     &ut_tmdl_summary_org_N_tot,ps_nut_tmdl_summary_nh3_N_tot,ps_nut_tmd
c     &l_summary_no3_N_tot,ps_tot_nitrogen_final_load,ps_tot_P_final




C***********Output File Write Statements

C*****SECTION: "TMDL CALCULATIONS FOR SUBSEGMENT:"

990   format(A33,2x,A10,2x,A20)
      Write (11,990)'TMDL CALCULATIONS FOR SUBSEGMENT:',subsegnumber,sub
     &segname
      Write(11,*)'FTN ASSOCIATES, LTD.'
      Write(11,*)'Program:Pr20m6f'
      Write(11,*)' '
      Write(11,*)'INFO FOR INPUT FILE WITH USER SPECIFIED DATA AND OPTIO
     &NS:'
      Write(11,*)'File name:',userfilename
      write(11,*)' '
      write(11,*)'INFO FOR LA-QUAL OUTPUT FILE:'
      Write(11,*)'File name:',laqualfilename
      Write(11,*)'Date/Time:',pertime
      write(11,*)LAQUAL_version
      write(11,*)'  '
      Write(11,*)'LIST OF ALL REACHES IN LA-QUAL OUTPUT FILE:'
      DO 209 numm=1, num
1000      Format(A7,1x,I3,1x,A10,1x,I3,1x,A1,1x,I3,A18,2x,A6,1x,A15)
209       WRITE(11,1000)'Reach',np_Reach(numm),'(Elements',Elem_begin(nu
```

```
     &mm),'-',elem_end(numm),') is in subsegment',reach_subseg_num(numm)
     &,reach_name(numm)
      write(11,*)' '


C***** SECTION:"CALCULATIONS FOR LOADS FROM NPS INFLOWS (HEADWATERS, TRIBUTARIES, AND INCREMENTAL INFLOW):"

      Write(11,3030)
      write(11,*)' '
3030  FORmat(102('='))
      Write(11,*)'CALCULATIONS FOR LOADS FROM NPS INFLOWS (HEADWATERS, T
     &RIBUTARIES, AND INCREMENTAL INFLOW):'
      Write(11,*)' '
      write(11,*)'Equation used: (Load, kg/day) = (Inflow rate, m3/sec)
     &* (Conc., mg/L) * 1.0E-6 kg/mg * 1.0E3 L/m3 *'
      write(11,*)'
     &                           86400 sec/day'
      write(11,*)' '
      Write(11,*)'Values from LA-QUAL output:'
      write(11,*)' '
      Write(11,*)'Reach or   Inflow      CBODu     Organic N   Ammonia N
     &        NO2+NO3 N'
      write(11,*)'Element     rate        conc.       conc.       conc.
     &          conc.'
      write(11,*)'number    (m3/sec)     (mg/L)      (mg/L)      (mg/L)
     &          (mg/L)     Name of inflow'
      write(11,*)'------    --------    --------    --------    --------
     &        --------     --------------------'
3050  Format(I3,5x,f10.5,4x,f8.2,4x,f8.2,4x,f8.2,8x,f8.2,5x,A25)
      do 210 cir=1,num_hdwt
210      write(11,3050) HDWT1_elem(cir), HDWT1_Flow(cir), HDWT2_BOD_con(
     &cir),HDWT2_ORG_con(cir),HDWT2_NH3_con(cir), HDWT2_NO3_con(cir),
     &hdwt1_name(cir)
      do 220 cir=1,nps_num_wstld
220   write(11,3050)nps_elem_wstld(cir),nps_WSTLD_Flow(cir), nps_WSTL
     &D2_BOD_con(cir),nps_WSTLD2_ORG_con(cir), nps_WSTLD2_NH3_con(cir),
     &nps_WSTLD2_NO3_con(cir),NPS_wstld_name(cir)
      do 222 cir=1,num_incr
222   write(11,3050)incr_reach(cir),incr_inFlow(cir), incr2_CBODu_con(ci
     &r),incr2_ORG_N_con(cir),incr2_Amm_N_con(cir),incr2_Nitrate_con(cir
     &),'Incremental Reach flow   '
      write(11,*)'  '
c      write(11,*)'------    --------    --------    --------    --------
c     &        --------     --------------------'
      write(11,*)'  '
      write(11,*)'Calculated values:'
      write(11,*)' '
      write(11,*)'                          CBODu     Organic N   Ammonia
     &N   NO2+NO3 N'
      write(11,*)'             Element     load        load        load
     &     load'
      write(11,*)'             number    (kg/day)    (kg/day)    (kg/day
     &)    (kg/day)'
      write(11,*)'             ------    --------    --------    --------
     &    --------'
3060  Format(13x,I3,5x,f10.2,2x,f10.2,1x,f10.2,2x,f10.2)
      cir=num_hdwt
      do 224 cirr=1,cir
224      write(11,3060) HDWT1_elem(cirr), HDWT_BOD_cal(cirr),
     &HDWT_ORG_cal(cirr),HDWT_NH3_cal(cirr), HDWT_NO3_
     &cal(cirr)
      cir=nps_num_wstld
      do 226 cirr=1,cir
226      write(11,3060)nps_elem_wstld(cirr),nps_WSTLD2_BOD_cal(cirr)
     &, nps_WSTLD2_ORG_cal(cirr), nps_WSTLD2_NH3_cal(cirr), nps_WSTLD2_N
     &O3_cal(cirr)
      do 228 cirr=1,num_incr
228      write(11,3060)incr_reach(cirr),incr_CBODu(cirr)
     &, incr_Org_N(cirr), incr_Amm_N(cirr),incr_NITrate(cirr)
      write(11,*)'             ------    --------    --------    --------
     &    --------'
3070  Format(A19,f12.2,2x,f10.2,1x,f10.2,2x,f10.2)
      write(11,3070)'Subsegment totals:',nps_BOD_tot,nps_Org_N_tot,nps_
     &NH3_N_tot,nps_NO3_tot
```

```
      write(11,*)' '


C***** SECTION:"CALCULATIONS FOR NONPOINT SOURCE MASS LOADS IN DATA TYPE 19:"

      Write(11,3030)
      write(11,*)' '
      write(11,*)'CALCULATIONS FOR NONPOINT SOURCE MASS LOADS IN DATA TY
     &PE 19:'
      write(11,*)' '
      write(11,*)'Values from LA-QUAL output:'
      write(11,*)' '
      write(11,*)'                                        CBODu       Orga
     &nic N'
      write(11,*)'                         Reach      mass load     mass
     & load'
      write(11,*)'                         number      (kg/day)      (kg
     &/day)'
      write(11,*)'                         ------      --------    -----
     &------'
      DO 230 numm=1,num
3080  Format(26X,I3,6x,F10.2,5x,F10.2)
230      Write(11,3080)NP_reach(numm),NP_BOD(numm), NP_Org(numm)
      write(11,*)'                         ------      --------    -----
     &------'
3090  format(A33,F12.2,3x,F12.2)
      write(11,3090)'Subsegment totals               ',MLDT19_tot_CBODu
     &,MLDT19_tot_org
      write(11,*)' '


C***** SECTION:"CALCULATIONS FOR LOADS FROM SOD AND BENTHIC AMMONIA:"

      ctr=1
      write(11,3030)
      write(11,*)'  '
      write(11,*)'CALCULATIONS FOR LOADS FROM SOD AND BENTHIC AMMONIA:'
      write(11,*)'  '
      write(11,*)'SOD temperature correction factor used in LA-QUAL mode
     &l: 1.065 (default)'
      write(11,*)' '
      write(11,*)'Equations used: SOD temp. corrected = (SOD at 20 C) *
     &1.065^(Water temp - 20 C)'
      write(11,*)'                SOD load = (SOD temp. corrected, g/m2/
     &day) * (Surface area, m2) * 1.0E-3 kg/g'
      write(11,*)'                Benthic NH3-N load = (Benthic ammonia
     &N, g/m2/day) * (Surface area, m2) * 1.0E-3 kg/g'
      write(11,*)' '
      write(11,*)' '
      write(11,*)'                              Values from LA-QUAL output
     &:                  Calculated values:'
      write(11,*)'                     ----------------------------------
     &---------    --------------------------------'
      write(11,*)'                      Water     Surface      SOD at
     &Benthic      SOD temp.     SOD       Benthic'
      write(11,*)'Reach    Element     temp.       area        20 C
     &ammonia N    corrected     load     NH3-N load'
      write(11,*)'number   number     (deg C)      (m2)     (g/m2/day)
     &(g/m2/day)  (g/m2/day)   (kg/day)    (kg/day)'
      write(11,*)'------   ------    --------    --------    --------
     &--------     --------    --------    ---------'
      DO 300 cir=1, total_elem
4000  format(I3,7x,I3,4x,f10.2,1x,f10,3x,f10.3,1x,f10.2,5x,f6.3,3x,f10.2
     &,6x,f6.2)
4001  if (cir.LT.elem_begin(ctr)) then

      ctr=ctr-1
      go to 4001
      end if

4002  if (cir.GT.elem_end(ctr)) then
      ctr=ctr+1
      go to 4002
      end if
```

```
4009  FORMAT(I3,2x,I3,2x,I3,2x,F6.2,2x,I3,2x,I3,2x,F8.4)
C      write(13,4009)cir,elem_begin(ctr),elem_end(ctr),elem_col(cir),ctr,
C     &np_reach(ctr),elem_sod(cir)

      write (11,4000)np_reach(ctr),cir,elem_temp(cir),
     &s_area_int(cir),elem_sod(cir), elem_benthis(cir),sod_temp_cor(cir)
     &,sod_load(cir),benthic(cir)

300   continue
      write(11,*)'
     &                        --------    ---------'
4010  format(A60,16x,F10.2,2x,f10.2)
      write(11,4010)'Subsegment totals:',nps_sod_load_tot,nps_benthic_to
     &t
      write(11,*)' '


C***** SECTION:"CALCULATIONS FOR LOADS FROM POINT SOURCE DISCHARGES EXPLICITLY MODELED:"

      write(11,3030)
      write(11,*)' '
      write(11,*)'CALCULATIONS FOR LOADS FROM POINT SOURCE DISCHARGES EX
     &PLICITLY MODELED:'
      write(11,*)' '
      if (ps_num_wstld.EQ.0) then
      WRITE(11,*)'For this subsegment, there are no point source dischar
     &ges explicitly modeled.'
      go to 335
      end if
      write(11,*)'Equation used: (Load, kg/day) = (Inflow rate, m3/sec)
     &* (Conc., mg/L) * 1.0E-6 kg/mg * 1.0E3 L/m3 *'
      write(11,*)'
     &                               86400 sec/day'
      write(11,*)'  '
      write(11,*)'Values from LA-QUAL output:'
      write(11,*)'  '
      write(11,*)'          Inflow      CBODu     Organic N   Ammonia N
     &   NO2+NO3 N'
      write(11,*)'Element     rate        conc.       conc.       conc.
     &     conc.'
      write(11,*)'number    (m3/sec)     (mg/L)      (mg/L)      (mg/L)
     &      (mg/L)     Name of discharge'
      write(11,*)'------    --------    --------    --------    --------
     &    --------    --------------------'
      DO 330 cir=1,ps_num_wstld
4020  Format(I3,5x,f10.5,5x,f7.3,5x,f7.3,5x,f7.3,5x,f7.3,6x,A20)
        write(11,4020)ps_elem_wstld(cir),ps_WSTLD_Flow(cir), ps_WSTL
     &D2_BOD_con(cir),ps_WSTLD2_ORG_con(cir), ps_WSTLD2_NH3_con(cir),
     &ps_WSTLD2_NO3_con(cir),PS_wstld_name(cir)
330   continue
      write(11,*)'  '
      write(11,*)'  '
      write(11,*)'  '
      write(11,*)'Calculated values:'
      write(11,*)' '
      write(11,*)'  '
      write(11,*)'                        CBODu     Organic N   Ammonia N
     & NO2+NO3 N'
      write(11,*)'            Element     load        load        load
     &       load'
      write(11,*)'            number    (kg/day)    (kg/day)    (kg/day)
     &    (kg/day)'
      write(11,*)'            ------    --------    --------    --------
     &    --------'
      cir=ps_num_wstld
      if (ps_num_wstld .EQ.0) then
      write(11,*)'             NONE         0.00        0.00        0.00
     &        0.00'
      go to 342
      end if
      do 340 cirr=1,cir
4030  Format(13x,I3,4x,f10.2,4x,f8.2,4x,f8.2,4x,f8.2)
340      write(11,4030)ps_elem_wstld(cirr),ps_WSTLD2_BOD_cal(cirr)
```

```
     &, ps_WSTLD2_ORG_cal(cirr), ps_WSTLD2_NH3_cal(cirr), ps_WSTLD2_N
     &O3_cal(cirr)
342   write(11,*)'            ------    --------    --------    --------
     &    --------'
4040  Format(A16,4x,f10.2,2x,f10.2,2x,f10.2,2x, f10.2)
      write(11,4040)'Subsegment totals:',ps_BOD_tot,ps_Org_N_tot,ps_
     &NH3_N_tot,ps_NO3_tot
      write(11,*)'  '
      write(11,*)'  '


C*****SECTION:"CALCULATIONS FOR LOADS FROM POINT SOURCE DISCHARGES NOT EXPLICITLY MODELED:"

335   write(11,3030)
      write(11,*)'  '
      write(11,*)'  '
      write(11,*)'CALCULATIONS FOR LOADS FROM POINT SOURCE DISCHARGES NO
     &T EXPLICITLY MODELED:'
      write(11,*)'  '
      if (num_pt_sour.EQ.0) THEN
         WRITE(11,*)'For this subsegment, there are no point source disc
     &harges not explicitly modeled.'
         write(11,*)' '
         GO TO 431
         END IF
4045  format (A62,f6.3,A33)
      write(11,4045)'Equations used: Flow rate from TMDL calcs = Permit
     &flow rate * ',fac_mos_FG,' (to incorporate MOS and FG) '
      write(11,*)'                (Load, kg/day) = (Flow rate, MGD) * (C
     &onc., mg/L) * 3.785 L/gal * 1.0E6 gal/MG * 1.0E-6 kg/mg'
      write(11,*)'  '
      write(11,*)'  '
      write(11,*)'Assumptions: Ratio of CBODu to CBOD5 for point source
     & dissharges = 2.3 (guidance from LTP).'
      write(11,*)'             For permits with BOD or ammonia limits, N
     &O2+NO3 = 10 mg/L (drinking water criteria).'
      write(11,*)'             For permits with COD limits, assume that
     &CBODu is about the same magnitude as COD and'
      write(11,*)'                          that discharges of nitrogen (o
     &rganic, ammonia, and NO2+NO3) are negligible.'
      write(11,*)' '
      write(11,*)'  '
      write(11,*)'                          Permit    Factor to      Flow
     &'
      write(11,*)'NPDES                     flow    incorporate   rate fo
     &r'
      write(11,*)'permit      Outfall       rate     MOS and FG   TMDL ca
     &lcs            '
      write(11,*)'number      number        (MGD)     into flow       (MG)
     &D      Comments'
      write(11,*)'--------    --------    --------    --------    ------
     &--    ----------------------------------------'
      do 400 I= 1,num_pt_sour
         tmdl_cal_flow(I)=perm_flow(I)*fac_mos_FG
4050     Format(A10,4x,A3,5x,F10.3,3x,F6.3,4x,f10.3,5x,A40)
         write (11,4050)permit_number(I), outfall_num(I),perm_flow(I),fa
     &c_mos_FG,tmdl_cal_flow(I), comment(I)
400    continue
      write(11,*)'  '
      write(11,*)'  '
      write(11,*)'  '
      write(11,*)'                           User specified permit limits
     &:'
      write(11,*)' NPDES                   ------------------------------
     &-'
      write(11,*)' permit      Outfall     CBOD5        COD       Ammoni
     &a'
      write(11,*)' number      number      (mg/L)      (mg/L)      (mg/L
     &)     Comments'
      write(11,*)'--------    --------    --------    --------    ------
     &--    ----------------------------------------'
      do 410 I= 1,num_pt_sour
4060     Format(A10,4x,A3,5x,F10.1,2x,F10.1,2x,F10.1,4x,A40)
410      write (11,4060)permit_number(I), outfall_num(I),CBOD5_perm(I),
```

```
     &COD_perm(I), ammon_perm(I),comment_con(I)
      write(11,*)'  '
      write(11,*)'  '
      write(11,*)'  '
      write(11,*)'                                Values for TMDL calcul
     &ations:'
      write(11,*)' NPDES                  ------------------------------
     &-------------'
      write(11,*)' permit      Outfall     CBODu     Organic N   Ammonia
     & N   NO2+NO3 N'
      write(11,*)'  number      number      (mg/L)      (mg/L)      (mg/
     &L)      (mg/L)     Comments'
      write(11,*)'--------    --------    --------    --------    ------
     &--    --------    ----------------------------'
      do 420 I= 1,num_pt_sour
         tmdl_cal_flow(I)=perm_flow(I)*fac_MOS_fg
4070     Format(A10,4x,A3,5x,F10.2,2x,F10.2,2x,F10.2,2x,F10.2)
420      write (11,4070)permit_number(I), outfall_num(I),CBODu_tmdl_val(
     &I),org_N_tmdl_val(I),ammon_tmdl_val(I), no3_tmdl_val(I)
      write(11,*)'  '
      write(11,*)'  '
      write(11,*)'  '
      write(11,*)'                                        Calculated loads
     &:'
      write(11,*)' NPDES                  ------------------------------
     &-------------'
      write(11,*)' permit      Outfall     CBODu     Organic N   Ammonia
     &N   NO2+NO3 N'
      write(11,*)' number      number     (kg/day)    (kg/day)    (kg.da
     &y)   (kg.day)     Comments'
      write(11,*)'--------    --------    --------    --------    ------
     &--    --------    ----------------------------'
      DO 430 I= 1,num_pt_sour
4080     Format(A10,4x,A3,5x,F10.2,2x,F10.2,2x,F10.2,2x,F10.2)
         write(11,4080)permit_number(I), outfall_num(I),cbodu_tmdl_cal(I
     &), org_n_tmdl_cal(I),ammon_tmdl_cal(I),no3_tmdl_cal(I)
430   continue
      write(11,*)'                            --------    --------    ------
     &--    --------'
4090  format(A20,2x,f10.2,2x,f10.2,2x,f10.2,2x, f10.2)
      write(11,4090)'Subsegment total',cbodu_tmdl_tot,org_N_tmdl_tot,amm
     &on_tmdl_tot,no3_tmdl_tot


C*****SECTION:"SUMMARY OF NONPOINT SOURCE OXYGEN DEMAND FOR THIS SUBSEGEMENT:"

431   write(11,3030)
      write(11,*)' '
      write(11,*)'SUMMARY OF NONPOINT SOURCE OXYGEN DEMAND FOR THIS SUBS
     &EGEMENT:'
      write(11,*)' '
      write(11,*)' '
4093  format(A52,f6.4,A30)
      write(11,4093)'Equations used:  Organic N oxygen demand, kg/day =
     &',ammoxy_rat,' * Organic N load, kg/day of N'
4094  format(A52,F6.4,A30)
      write(11,4094)'                 Ammonia N oxygen demand, kg/day =
     &',ammoxy_rat,' * Ammonia N load, kg/day of N'
4095  format(A37,f4.1,A24)
      write(11,4095)'                 Margin of safety = ',nps_mos_per,'
     &% * nonpoint source load'
4097  format(A34,f4.1,A24)
      write(11,4097)'                 Future Growth = ',nps_FG_per,'% *
     &nonpoint source load'
4099  format(A36,f4.1,A24)
      write(11,4099)'                 Load Allocation = ',100-nps_mos_pe
     &r-ps_FG_per,'% * nonpoint source load'
      write(11,*)' '
      write(11,*)'Values from calculations above'
      write(11,*)' '
      write(11,*)'
     &    Nitrogen loads (kg/day of N):'
      write(11,*)'
     &---------------------------------'
```

```
      write(11,*)'                                    SOD       CBODu
     &Organic      Ammonia     NO2+NO3 N'
      write(11,*)'                                 (kg/day)    (kg/day)   (
     &kg/day)     (kg/day)     (kg/day)'
      write(11,*)'                                 --------    --------   -
     &-------     --------     ---------'
5000  format(A36,4x,f10.2,1x,f10.2,3x,f10.2,4x,f10.2)
      write(11,5000)'NPS inflows                      N/A ',nps_bod_tot,n
     &ps_org_N_tot,nps_nh3_n_tot,nps_NO3_tot
5010  format(A36,4x,f10.2,1x,f10.2,4x,A20)
      write(11,5010)'Mass LOads (data type 19)       N/A ',mldt19_tot_cb
     &odu,mldt19_tot_org,'N/A          N/A'
5020  format(A15,13x,f10.2,1x,A20,5x,f10.2,7x,A4)
      write(11,5020)'SOD and Benthic ammonia',nps_sod_load_tot,'N/A
     &   N/A',nps_benthic_tot,'N/A'
c      write(11,*)'                                --------    --------   -
c     &-------     --------     ---------'
      write(11,*)'  '
      write(11,*)'Calculated loads of oxygen demand:'
      write(11,*)'
     & Oygen demand loads:     Total'
      write(11,*)'
     & -------------------     Oxygen'
      write(11,*)'                                    SOD       CBODu
     &Organic      Ammonia     demand'
      write(11,*)'                                 (kg/day)    (kg/day)   (
     &kg/day)     (kg/day)     (kg/day)'
      write(11,*)'                                 --------    --------   -
     &-------     --------     ---------'
c5000  format(A36,4x,f10.5,2x,f10.5,2x,f10.5,3x,f10.5)

      write(11,5000)'NPS inflows                      N/A ',nps_bod_tot,
     &oxy_dem_nps_org_N_tot,oxy_dem_nps_nh3_tot,nps_inflows_tot_oxy_dema
     &nd
5011  format(A36,4x,f10.2,1x,f10.2,8x,A3,6x,f10.2)
      write(11,5011)'Mass LOads (data type 19)       N/A ',mldt19_tot_cb
     &odu,oxy_dem_mldt19_tot_org,'N/A',mldt19_tot_oxy_dem
5021  format(A15,13x,f10.2,1x,A20,5x,f10.2,4x,f10.2)
      write(11,5021)'SOD and Benthic ammonia',nps_sod_load_tot,'N/A
     &   N/A',oxy_dem_nps_benthic_tot,tot_oxy_dem_sod_ben
      write(11,*)' '
5030  format(A23,5x,f10.2,2x,f10.2,1x,f10.2,3x,f10.2,4x,f10.2)
      write(11,5030)'Total for all NPS loads',nps_sod_load_tot,nps_summa
     &ry_cbodu,nps_summary_org,nps_summary_ammon, tot_oxy_dem_nps
      write(11,*)' '
5035  format(A22,f4.1,A2,f10.2,2x,f10.2,1x,f10.2,3x,f10.2,4x,f10.2)
      write(11,5035)'NPS future growth    (',nps_FG_per,'%)    ',nps_FG_
     &sod_load_tot,nps_FG_summary_cbodu,nps_FG_summary_org,nps_FG_s
     &ummary_ammon,nps_FG_tot_oxy_dem
5040  format(A22,f4.1,A2,f10.2,2x,f10.2,1x,f10.2,3x,f10.2,4x,f10.2)
      write(11,5040)'NPS margin of safety (',nps_mos_per,'%)    ',nps_mo
     &s_sod_load_tot,nps_mos_summary_cbodu,nps_mos_summary_org,nps_mos_s
     &ummary_ammon,nps_mos_tot_oxy_dem
5050  format(A22,f4.1,A2,f10.2,2x,f10.2,1x,f10.2,3x,f10.2,4x,f10.2)
      write(11,5050)'NPS load allocation  (',100-nps_MOS_PER-nps_FG_PER
     &,'%)    ',npS_LA_sod_load_tot,nps_LA _summary_cbodu,nps_LA_summary
     &_org,nps_La_summary_ammon,nps_LA_tot_oxy_dem
      write(11,*)' '
      write(11,*)'  '


C*****SECTION:"SUMMARY OF POINT SOURCE OXYGEN DEMAND FOR THIS SUBSEGEMENT"

      write(11,3030)
      write(11,*)' '
      Write(11,*)'SUMMARY OF POINT SOURCE OXYGEN DEMAND FOR THIS SUBSEGE
     &MENT'
      write(11,*)' '
      if (num_pt_sour+ps_num_wstld.EQ.0) THEN
         WRITE(11,*)'For this subsegment, there are no point source disc
     &harges either modeled or unmodeled in this subsegment.'
         write(11,*)' '
         GO TO 561
         end if
```

```
      write(11,*)'  '
      write(11,4093)' Equations used: Organic N oxygen demand, kg/day =
     & ',ammoxy_rat,' * Organic N load, kg/day of N'
      write(11,4093)'                 Ammonia N oxygen demand, kg/day =
     & ',ammoxy_rat,' * Ammonia N load, kg/day of N'
5052  format(A36,f4.1,A21)
      write(11,5052)'                 Margin of Safety = ',ps_mos_per,'%
     & * point source load'
5053  format(A33,F4.1,A24)
      write(11,5053)'                 Future Growth = ',nps_FG_per,'% *
     &nonpoint source load'
5054  format(A71,f4.1,A16)
      write(11,5054)'                 Wasteload Allocation (WLA) for mod
     &eled point source = ',100-ps_mos_per-ps_FG_per,'% * modeled load'
5056  format(A70,f4.1,A19)
      write(11,5056)'                 Wasteload Allocation (WLA) for min
     &or point sources = ',100-ps_mos_per-ps_FG_per,'% * calculated load
     &'
      write(11,*)' '
      write(11,*)'Values from calculations above'
      write(11,*)'
     & Nitrogen loads (kg/day of N):'
      write(11,*)'                                                      -
     &--------------------------------'
      write(11,*)'                                                       CBODu    O
     &rganic N   Ammonia N    NO3+NO2'
      write(11,*)'                                                      (kg/day)
     &(kg/day)    (kg/day)    (kg/day)'
      write(11,*)'                                                      -------   -
     &--------    --------    --------'
      if (ps_num_wstld .EQ.0) then
      go to 470
      end if
      DO 450 cir=1,ps_num_wstld
5060  Format(A17,1x,A20,2x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)
      write(11,5060)'Modeled load for:' ,ps_wstld_name(cir),
     &ps_WSTLD2_Bod_cal(cir),ps_WSTLD2_ORG_cal(cir), ps_WSTLD2_N
     &h3_cal(cir),ps_WSTLd2_NO3_cal(cir)
450   continue
5080  format(A38,2x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)
470   write(11,5080)'Calculated load for minor point sources   ',cbodu_t
     &mdl_tot,org_N_tmdl_tot,ammon_tmdl_tot,no3_tmdl_tot
      write(11,*)'  '
      write(11,*)'  '
      write(11,*)'Calculated loads of oxygen demand'
      write(11,*)' '
      write(11,*)'
     & Oygen demand loads:     Total'
      write(11,*)'
     & -------------------     Oxygen'
      write(11,*)'                                                       CBODu    O
     &rganic N   Ammonia N     demand'
      write(11,*)'                                                      (kg/day)
     &(kg/day)    (kg/day)    (kg/day)'
      write(11,*)'                                                      -------   -
     &--------    --------    --------'
      if (ps_num_wstld .EQ.0) then
      go to 540
      end if
      DO 490 cir=1,ps_num_wstld
      write(11,5060)'Modeled load for:',ps_wstld_name(cir),
     &oxy_dem_ps_WSTLD2_Bod_cal(cir),oxy_dem_ps_WSTLD2_ORG_cal(cir),oxy_
     &dem_ps_WSTLD2_Nh3_cal(cir),mod_tot_oxy_dem_ps(cir)
490   continue
540   write(11,5080)'Calculated load for minor point sources   ',cbodu_t
     &mdl_tot,oxy_dem_org_N_tmdl, oxy_dem_ammon_tmdl,min_ps_summary_tot
      write(11,5080)'Total for all point source loads             ',ps_s
     &ummary_cbodu, ps_summary_org,ps_summary_nh3_n,tot_oxy_dem_summary
      write(11,*)' '
5090  Format(A31,f4.1,A3,2x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)
      write(11,5090)'MOS for all point Sources     (',ps_mos_per,'%)  ',
     &mos_ps_summary_cbodu, mos_ps_summary_org,mos_ps_summary_nh3_n,mos_
     &tot_oxy_dem_summary
5092  Format(A31,f4.1,A3,2x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)
```

```
      write(11,5092)'FG for all point Sources      (',ps_FG_per,'%)  ',
     &FG_ps_summary_cbodu,FG_ps_summary_org,FG_ps_summary_nh3_n,FG_
     &tot_oxy_dem_summary

      if (ps_num_wstld .EQ.0) then
      go to 560
      end if
      DO 550 cir=1,ps_num_wstld
5095  Format(A8,1x,A21,A1,f4.1,A2,3x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)
      write(11,5095)'WLA for:',ps_wstld_name(cir),'(',100-ps_mos_per-ps_
     &FG_per,'%)',wla_ps_WSTLD2_BOD_cal(cir),wla_ps_WSTLD2_ORG_cal(cir),
     &wla_ps_WSTLd2_nH3_cal(cir),wla_mod_tot_oxy_dem_ps(cir)
550   continue
6000  format(A31,f4.1,A2,3x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)
560   write(11,6000)'WLA for minor point sources   (',100-ps_mos_per-ps_
     &FG_per,'%)   ',wla_ps_cbodu_tmdl_tot,wla_ps_org_N_tmdl_tot, wla_ps
     &_ammon_tmdl_tot,wla_min_ps_summary_tot


      if (nut_tmdl_need .EQ. 'YES') then
         goto 561
      else
         go to 605
      end if


C*****SECTION:"NUTRIENT TMDL CALCULATIONS:"

561   write(11,3030)
      write(11,*)' '
      write(11,*)' '
      write(11,*)'NUTRIENT TMDL CALCULATIONS:'
      write(11,*)'  '
      if(nut_tmdl_need.EQ.'NO') then
      write(11,*)'No nutrient TMDL is needed for this subsegment'
      go to 605
      end if
      write(11,*)'Assumptions: Naturally occurring ratio of total N to t
     &otal P = ',nat_rat
      write(11,*)' '
      write(11,*)'Equations used: Total N = (Organic N) + (Ammonia N) +
     &(NO2+NO3 N)'
      write(11,*)'                Total P = (Total N) / (Naturally occur
     &ring ratio of total N to total P)'
6010  format(A39,f4.1,A24)
      write(11,6010)'              NPS margin of safety = ',nps_mos_per,
     &'% * nonpoint source load'
6015  format(A36,f4.1,A24)
      write(11,6015)'              NPS Future Growth = ',nps_FG_per,
     &'% * nonpoint source load'
6020  format(A38,f4.1,A24)
      write(11,6020)'                NPS load allocation = ',100-nps_mos
     &_per-nps_FG_per,'% * nonpoint source load'
6030  format(A57,f4.1,A27)
      write(11,6030)'                Margin of safety for all point sour
     &ces = ',ps_mos_per,'% * total point source load'
6035  format(A53,F4.1,A24)
      write(11,6035)'                Future Growth for all point soures
     &= ',nps_FG_per,'% * nonpoint source load'
6040  format(A70,f4.1,A16)
      write(11,6040)'                Wasteload allocation (WLA) for mode
     &led point source = ',100-ps_mos_per-ps_FG_per,'% * modeled load'
6050  format(A69,f4.1,A19)
      write(11,6050)'                Wasteload allocation (WLA) for mino
     &r point sources = ',100-ps_mos_per-ps_FG_per,'% * calculated load'
      write(11,*)'  '
      write(11,*)' '
      write(11,*)'Nonpoint sources:'
      write(11,*)'                                                 Organic N
     &Ammonia N   NO2+NO3 N    Total N     Total P'
      write(11,*)'                                                  (kg/day)
     & (kg/day)    (kg/day)    (kg/day)    (kg/day)'
      write(11,*)'                                                  --------
     & --------    --------    --------    --------'
```

```
6060  format(A25,16x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)
      write(11,6060)'Total for all NPS loads                    ',nut_tm
     &dl_nps_org_N_tot,nps_nh3_n_tot,nps_NO3_tot,nps_tot_nitrogen_load,n
     &ps_total_P
      write(11,*)'  '
6070  format(A22,f4.1,A2,13x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)
      write(11,6070)'NPS margin of safety (',nps_mos_per,'%)    ',nps_mo
     &s_nut_tmdl_nps_Org_N_tot,nps_mos_nps_nh3_n_tot,nps_mos_nps_NO3_tot
     &,nps_mos_tot_nitrogen_load,nps_mos_total_p
6075  format(A22,f4.1,A2,13x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)
      write(11,6075)'NPS Future Growth    (',nps_mos_per,'%)    ',nps_FG
     &_nut_tmdl_nps_Org_N_tot,nps_FG_nps_nh3_n_tot,nps_FG_nps_NO3_tot
     &,nps_FG_tot_nitrogen_load,nps_FG_total_p
6080  format(A22,f4.1,A2,13x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)
      write(11,6080)'NPS load allocation  (',100-nps_mos_per-nps_FG_per,
     &'%)    ',nps_la_nut_tmdl_nps_Org_N_tot,nps_la_nps_nh3_n_tot,nps_la
     &_nps_NO3_tot,nps_la_tot_nitrogen_load,nps_la_total_p
      write(11,*)' '
      write(11,*)'  '
      write(11,*)'Point sources:'
      write(11,*)' '
      write(11,*)'                                              Organic N
     &Ammonia N   NO2+NO3 N    Total N     Total P'
      write(11,*)'                                               (kg/day)
     & (kg/day)    (kg/day)    (kg/day)    (kg/day)'
      write(11,*)'                                               --------
     & --------    --------    --------    --------'
      if (ps_num_wstld .EQ.0) then
      go to 590
      end if
      DO 585 cir=1,ps_num_wstld
6085  Format(A17,1x,A14,8x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)
        write(11,6085)'Modeled load for:',ps_wstld_name(cir),
     &ps_WSTLD2_ORG_cal(cir),ps_WSTLD2_Nh3_cal(cir),ps_WSTLd2_NO3_cal(c
     &ir),ps_total_nitrogen_load(cir),ps_total_P(cir)

585   continue
c5080  format(A38,2x,f10.5,2x,f10.5,2x,f10.5,2x,f10.5)
6090  format(A38,2x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)
590   write(11,6090)'Calculated load for minor point sources   ',org_N_t
     &mdl_tot,ammon_tmdl_tot,no3_tmdl_tot,min_ps_total_nitrogen_load,min
     &_ps_total_P
      write(11,*)'                                               --------
     & --------    --------    --------    --------'
      write(11,6090)'Total for all point source loads             ',ps_n
     &ut_tmdl_summary_org_N_tot,ps_nut_tmdl_summary_nh3_N_tot,ps_nut_tmd
     &l_summary_no3_N_tot,ps_tot_nitrogen_final_load,ps_tot_P_final
      write(11,*)' '
7000  Format(A31,f4.1,A2,3x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)
      write(11,7000)'MOS for all point Sources     (',ps_mos_per,'%)',
     &mos_ps_nut_tmdl_sum_org_N_tot,mos_ps_nut_tmdl_sum_nh3_N_tot,
     &mos_ps_nut_tmdl_sum_no3_N_tot,mos_ps_tot_nitrogen_final_load,
     &mos_ps_tot_P_final
7005  Format(A31,f4.1,A2,3x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)
      write(11,7005)'FG for all point Sources      (',ps_mos_p
     &er,'%)',FG_ps_nut_tmdl_sum_org_N_tot,FG_ps_nut_tmdl_sum_nh3_N_to
     &t,FG_ps_nut_tmdl_sum_no3_N_tot,FG_ps_tot_nitrogen_final_load,
     &FG_ps_tot_P_final
      if (ps_num_wstld .EQ.0) then
      go to 610
      end if
      DO 600 cir=1,ps_num_wstld
7010  Format(A9,1x,A20,A1,f4.1,A2,3x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2,2
     &x,f10.2)
600   write(11,7010)'WLA for: ',ps_wstld_name(cir),'(',100-ps_mos_per-ps
     &_FG_per,'%)',wla_ps_WSTLD2_ORG_cal_sum(cir),wla_ps_WSTLd2_nH3_cal_
     &sum(cir),wla_ps_wstLD2_NO3_cal_sum(cir),wla_ps_total_nitrogen_load
     &(cir),wla_ps_total_P(cir)
610   continue
7020  format(A31,f4.1,A2,3x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2,2x,f10.2)

      write(11,7020)'WLA for minor point sources   (',100-ps_mos_per-ps_
     &FG_per,'%)   ',wla_min_ps_nut_tmdl_sum_org,wla_min_ps_nut_tmdl_sum
     &_nh3,wla_min_ps_nut_tmdl_sum_no3,wla_min_ps_nitrogen_final_load
```

```
     &,wla_min_ps_P_final

605   Print*,'Program has made the output file!!!'

606   STOP
      END
```

APPENDIX P

Ammonia Toxicity Calculations

AMMONIA TOXICITY CALCULATIONS FOR LOST LAKE AND FOUR LEAGUE BAY (SUBSEGMENT 120708)

Equations from 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014, Dec. 1999.

Use chronic criterion when fish early life stages are present (as mentioned on page 88, this is the same as CCC for early life stages absent when temp > 15 ^{o}C)

CCC, in mg N/L = $[0.0577/(1+10^{7.688-pH}) + 2.487/(1+10^{pH-7.688})] * MIN [2.85, 1.45*10^{0.028*(25-T)}]$

Note: CCC is the Chronic Criterion Concentration

CCC calculations below use seasonal average pH from LDEQ ambient monitoring data at station 955 (Lost Lake):

Summer (May-Oct)	
Date	pH (su)
10-May-00	7.85
7-Jun-00	7.61
12-Jul-00	8.13
9-Aug-00	7.11
6-Sep-00	8.14
4-Oct-00	7.54
Average =	7.73

Winter (Nov-Apr)	
Date	pH (su)
12-Jan-00	7.74
15-Feb-00	7.20
15-Mar-00	7.67
12-Apr-00	8.21
1-Nov-00	7.65
6-Dec-00	7.53
5-Jan-04	7.10
3-Feb-04	8.00
8-Mar-04	7.57
20-Apr-04	8.73
Average =	7.74

	Summer				Winter			
Model Element	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?
1	32.9	1.06	0.10	No	22.5	2.04	0.26	No
2	32.9	1.06	0.10	No	22.5	2.04	0.26	No
3	32.9	1.06	0.10	No	22.5	2.04	0.26	No
4	32.9	1.06	0.10	No	22.5	2.04	0.27	No
5	32.9	1.06	0.10	No	22.5	2.04	0.27	No
6	32.9	1.06	0.10	No	22.5	2.04	0.27	No
7	32.9	1.06	0.10	No	22.5	2.04	0.27	No
8	32.9	1.06	0.10	No	22.5	2.04	0.27	No
9	32.9	1.06	0.10	No	22.5	2.04	0.27	No
10	32.9	1.06	0.10	No	22.5	2.04	0.27	No
11	32.9	1.06	0.10	No	22.5	2.04	0.27	No
12	32.9	1.06	0.10	No	22.5	2.04	0.27	No
13	32.9	1.06	0.10	No	22.5	2.04	0.27	No
14	32.9	1.06	0.10	No	22.5	2.04	0.27	No
15	32.9	1.06	0.10	No	22.5	2.04	0.27	No
16	32.9	1.06	0.10	No	22.5	2.04	0.27	No
17	32.9	1.06	0.10	No	22.5	2.04	0.27	No
18	32.9	1.06	0.10	No	22.5	2.04	0.27	No
19	32.9	1.06	0.10	No	22.5	2.04	0.27	No
20	32.9	1.06	0.10	No	22.5	2.04	0.27	No
21	32.9	1.06	0.10	No	22.5	2.04	0.27	No
22	32.9	1.06	0.10	No	22.5	2.04	0.27	No
23	32.9	1.06	0.10	No	22.5	2.04	0.27	No
24	32.9	1.06	0.10	No	22.5	2.04	0.27	No
25	32.9	1.06	0.10	No	22.5	2.04	0.27	No
26	32.9	1.06	0.10	No	22.5	2.04	0.27	No

Model Element	Summer				Winter			
	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?
27	32.9	1.06	0.10	No	22.5	2.04	0.27	No
28	32.9	1.06	0.10	No	22.5	2.04	0.27	No
29	32.9	1.06	0.10	No	22.5	2.04	0.27	No
30	32.9	1.06	0.10	No	22.5	2.04	0.27	No
31	32.9	1.06	0.10	No	22.5	2.04	0.27	No
32	32.9	1.06	0.10	No	22.5	2.04	0.27	No
33	32.9	1.06	0.10	No	22.5	2.04	0.27	No
34	32.9	1.06	0.10	No	22.5	2.04	0.27	No
35	32.9	1.06	0.10	No	22.5	2.04	0.27	No
36	32.9	1.06	0.10	No	22.5	2.04	0.27	No
37	32.9	1.06	0.10	No	22.5	2.04	0.27	No
38	32.9	1.06	0.10	No	22.5	2.04	0.27	No
39	32.9	1.06	0.10	No	22.5	2.04	0.27	No
40	32.9	1.06	0.10	No	22.5	2.04	0.27	No
41	32.9	1.06	0.10	No	22.5	2.04	0.27	No
42	32.9	1.06	0.10	No	22.5	2.04	0.27	No
43	32.9	1.06	0.10	No	22.5	2.04	0.27	No
44	32.9	1.06	0.10	No	22.5	2.04	0.27	No
45	32.9	1.06	0.10	No	22.5	2.04	0.27	No
46	32.9	1.06	0.10	No	22.5	2.04	0.27	No
47	32.9	1.06	0.10	No	22.5	2.04	0.27	No
48	32.9	1.06	0.10	No	22.5	2.04	0.27	No
49	32.9	1.06	0.10	No	22.5	2.04	0.27	No
50	32.9	1.06	0.10	No	22.5	2.04	0.27	No
51	32.9	1.06	0.10	No	22.5	2.04	0.27	No
52	32.9	1.06	0.10	No	22.5	2.04	0.27	No
53	32.9	1.06	0.10	No	22.5	2.04	0.27	No
54	32.9	1.06	0.10	No	22.5	2.04	0.27	No
55	32.9	1.06	0.10	No	22.5	2.04	0.27	No
56	32.9	1.06	0.10	No	22.5	2.04	0.27	No
57	32.9	1.06	0.10	No	22.5	2.04	0.27	No
58	32.9	1.06	0.10	No	22.5	2.04	0.27	No
59	32.9	1.06	0.10	No	22.5	2.04	0.27	No
60	32.9	1.06	0.10	No	22.5	2.04	0.27	No
61	32.9	1.06	0.10	No	22.5	2.04	0.27	No
62	32.9	1.06	0.10	No	22.5	2.04	0.27	No
63	32.9	1.06	0.10	No	22.5	2.04	0.27	No
64	32.9	1.06	0.10	No	22.5	2.04	0.27	No
65	32.9	1.06	0.10	No	22.5	2.04	0.27	No
66	32.9	1.06	0.10	No	22.5	2.04	0.27	No
67	32.9	1.06	0.10	No	22.5	2.04	0.27	No
68	32.9	1.06	0.10	No	22.5	2.04	0.27	No
69	32.9	1.06	0.10	No	22.5	2.04	0.27	No
70	32.9	1.06	0.10	No	22.5	2.04	0.27	No
71	32.9	1.06	0.10	No	22.5	2.04	0.27	No
72	32.9	1.06	0.10	No	22.5	2.04	0.27	No
73	32.9	1.06	0.10	No	22.5	2.04	0.27	No
74	32.9	1.06	0.10	No	22.5	2.04	0.27	No
75	32.9	1.06	0.10	No	22.5	2.04	0.27	No
76	32.9	1.06	0.10	No	22.5	2.04	0.26	No
77	32.9	1.06	0.10	No	22.5	2.04	0.26	No
78	32.9	1.06	0.10	No	22.5	2.04	0.26	No
79	32.9	1.06	0.10	No	22.5	2.04	0.26	No
80	32.9	1.06	0.10	No	22.5	2.04	0.26	No

Model Element	Summer				Winter			
	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?
81	32.9	1.06	0.10	No	22.5	2.04	0.26	No
82	32.9	1.06	0.10	No	22.5	2.04	0.26	No
83	32.9	1.06	0.10	No	22.5	2.04	0.26	No
84	32.9	1.06	0.10	No	22.5	2.04	0.26	No
85	32.9	1.06	0.10	No	22.5	2.04	0.26	No
86	32.9	1.06	0.10	No	22.5	2.04	0.26	No
87	32.9	1.06	0.10	No	22.5	2.04	0.26	No
88	32.9	1.06	0.10	No	22.5	2.04	0.26	No
89	32.9	1.06	0.10	No	22.5	2.04	0.26	No
90	32.9	1.06	0.10	No	22.5	2.04	0.26	No
91	32.9	1.06	0.10	No	22.5	2.04	0.26	No
92	32.9	1.06	0.10	No	22.5	2.04	0.26	No
93	32.9	1.06	0.10	No	22.5	2.04	0.26	No
94	32.9	1.06	0.10	No	22.5	2.04	0.26	No
95	32.9	1.06	0.10	No	22.5	2.04	0.26	No
96	32.9	1.06	0.10	No	22.5	2.04	0.26	No
97	32.9	1.06	0.10	No	22.5	2.04	0.26	No
98	32.9	1.06	0.10	No	22.5	2.04	0.26	No
99	32.9	1.06	0.10	No	22.5	2.04	0.26	No
100	32.9	1.06	0.10	No	22.5	2.04	0.26	No
101	32.9	1.06	0.10	No	22.5	2.04	0.26	No
102	32.9	1.06	0.10	No	22.5	2.04	0.26	No
103	32.9	1.06	0.10	No	22.5	2.04	0.26	No
104	32.9	1.06	0.10	No	22.5	2.04	0.26	No
105	32.9	1.06	0.10	No	22.5	2.04	0.26	No
106	32.9	1.06	0.10	No	22.5	2.04	0.26	No
107	32.9	1.06	0.10	No	22.5	2.04	0.26	No
108	32.9	1.06	0.10	No	22.5	2.04	0.26	No
109	32.9	1.06	0.10	No	22.5	2.04	0.26	No
110	32.9	1.06	0.10	No	22.5	2.04	0.26	No
111	32.9	1.06	0.10	No	22.5	2.04	0.27	No
112	32.9	1.06	0.10	No	22.5	2.04	0.27	No
113	32.9	1.06	0.10	No	22.5	2.04	0.27	No
114	32.9	1.06	0.10	No	22.5	2.04	0.27	No
115	32.9	1.06	0.10	No	22.5	2.04	0.27	No
116	32.9	1.06	0.10	No	22.5	2.04	0.27	No
117	32.9	1.06	0.11	No	22.5	2.04	0.27	No
118	32.9	1.06	0.11	No	22.5	2.04	0.27	No
119	32.9	1.06	0.11	No	22.5	2.04	0.27	No
120	32.9	1.06	0.11	No	22.5	2.04	0.28	No
121	32.9	1.06	0.11	No	22.5	2.04	0.28	No
122	32.9	1.06	0.11	No	22.5	2.04	0.28	No
123	32.9	1.06	0.11	No	22.5	2.04	0.28	No
124	32.9	1.06	0.11	No	22.5	2.04	0.28	No
125	32.9	1.06	0.11	No	22.5	2.04	0.29	No
126	32.9	1.06	0.11	No	22.5	2.04	0.29	No
127	32.9	1.06	0.11	No	22.5	2.04	0.29	No
128	32.9	1.06	0.11	No	22.5	2.04	0.29	No
129	32.9	1.06	0.11	No	22.5	2.04	0.29	No
130	32.9	1.06	0.11	No	22.5	2.04	0.29	No
131	32.9	1.06	0.11	No	22.5	2.04	0.29	No
132	32.9	1.06	0.11	No	22.5	2.04	0.29	No
133	32.9	1.06	0.11	No	22.5	2.04	0.29	No
134	32.9	1.06	0.11	No	22.5	2.04	0.29	No

Model Element	Summer				Winter			
	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?
135	32.9	1.06	0.11	No	22.5	2.04	0.29	No
136	32.9	1.06	0.11	No	22.5	2.04	0.29	No
137	32.9	1.06	0.11	No	22.5	2.04	0.29	No
138	32.9	1.06	0.11	No	22.5	2.04	0.29	No
139	32.9	1.06	0.11	No	22.5	2.04	0.29	No
140	32.9	1.06	0.11	No	22.5	2.04	0.29	No
141	32.9	1.06	0.11	No	22.5	2.04	0.29	No
142	32.9	1.06	0.11	No	22.5	2.04	0.30	No
143	32.9	1.06	0.11	No	22.5	2.04	0.30	No
144	32.9	1.06	0.11	No	22.5	2.04	0.30	No
145	32.9	1.06	0.11	No	22.5	2.04	0.30	No
146	32.9	1.06	0.11	No	22.5	2.04	0.29	No
147	32.9	1.06	0.11	No	22.5	2.04	0.29	No
148	32.9	1.06	0.11	No	22.5	2.04	0.29	No
149	32.9	1.06	0.11	No	22.5	2.04	0.29	No
150	32.9	1.06	0.11	No	22.5	2.04	0.29	No
151	32.9	1.06	0.11	No	22.5	2.04	0.29	No
152	32.9	1.06	0.11	No	22.5	2.04	0.29	No
153	32.9	1.06	0.11	No	22.5	2.04	0.29	No
154	32.9	1.06	0.11	No	22.5	2.04	0.29	No
155	32.9	1.06	0.11	No	22.5	2.04	0.29	No
156	32.9	1.06	0.11	No	22.5	2.04	0.29	No
157	32.9	1.06	0.11	No	22.5	2.04	0.29	No
158	32.9	1.06	0.11	No	22.5	2.04	0.29	No
159	32.9	1.06	0.11	No	22.5	2.04	0.29	No
160	32.9	1.06	0.11	No	22.5	2.04	0.29	No
161	32.9	1.06	0.11	No	22.5	2.04	0.29	No
162	32.9	1.06	0.11	No	22.5	2.04	0.29	No
163	32.9	1.06	0.11	No	22.5	2.04	0.29	No
164	32.9	1.06	0.11	No	22.5	2.04	0.29	No
165	32.9	1.06	0.11	No	22.5	2.04	0.28	No
166	32.9	1.06	0.11	No	22.5	2.04	0.28	No
167	32.9	1.06	0.11	No	22.5	2.04	0.28	No
168	32.9	1.06	0.11	No	22.5	2.04	0.28	No
169	32.9	1.06	0.11	No	22.5	2.04	0.28	No
170	32.9	1.06	0.11	No	22.5	2.04	0.28	No
171	32.9	1.06	0.11	No	22.5	2.04	0.28	No
172	32.9	1.06	0.11	No	22.5	2.04	0.27	No
173	32.9	1.06	0.11	No	22.5	2.04	0.27	No
174	32.9	1.06	0.11	No	22.5	2.04	0.27	No
175	32.9	1.06	0.10	No	22.5	2.04	0.27	No
176	32.9	1.06	0.10	No	22.5	2.04	0.27	No
177	32.9	1.06	0.10	No	22.5	2.04	0.26	No
178	32.9	1.06	0.10	No	22.5	2.04	0.26	No
179	32.9	1.06	0.10	No	22.5	2.04	0.26	No
180	32.9	1.06	0.10	No	22.5	2.04	0.26	No
181	32.9	1.06	0.10	No	22.5	2.04	0.25	No
182	32.9	1.06	0.10	No	22.5	2.04	0.25	No
183	32.9	1.06	0.10	No	22.5	2.04	0.20	No
184	32.9	1.06	0.10	No	22.5	2.04	0.20	No
185	32.9	1.06	0.10	No	22.5	2.04	0.20	No
186	32.9	1.06	0.10	No	22.5	2.04	0.20	No
187	32.9	1.06	0.09	No	22.5	2.04	0.20	No
188	32.9	1.06	0.09	No	22.5	2.04	0.20	No

Model Element	Summer				Winter			
	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?
189	32.9	1.06	0.09	No	22.5	2.04	0.20	No
190	32.9	1.06	0.09	No	22.5	2.04	0.20	No
191	32.9	1.06	0.09	No	22.5	2.04	0.20	No
192	32.9	1.06	0.09	No	22.5	2.04	0.20	No
193	32.9	1.06	0.09	No	22.5	2.04	0.20	No
194	32.9	1.06	0.09	No	22.5	2.04	0.20	No
195	32.9	1.06	0.09	No	22.5	2.04	0.20	No
196	32.9	1.06	0.09	No	22.5	2.04	0.20	No
197	32.9	1.06	0.09	No	22.5	2.04	0.20	No
198	32.9	1.06	0.09	No	22.5	2.04	0.20	No
199	32.9	1.06	0.09	No	22.5	2.04	0.20	No
200	32.9	1.06	0.09	No	22.5	2.04	0.20	No
201	32.9	1.06	0.09	No	22.5	2.04	0.20	No
202	32.9	1.06	0.09	No	22.5	2.04	0.20	No
203	32.9	1.06	0.09	No	22.5	2.04	0.20	No
204	32.9	1.06	0.09	No	22.5	2.04	0.20	No
205	32.9	1.06	0.09	No	22.5	2.04	0.20	No
206	32.9	1.06	0.09	No	22.5	2.04	0.20	No
207	32.9	1.06	0.09	No	22.5	2.04	0.20	No
208	32.9	1.06	0.09	No	22.5	2.04	0.20	No
209	32.9	1.06	0.09	No	22.5	2.04	0.20	No
210	32.9	1.06	0.09	No	22.5	2.04	0.20	No
211	32.9	1.06	0.09	No	22.5	2.04	0.20	No
212	32.9	1.06	0.09	No	22.5	2.04	0.20	No
213	32.9	1.06	0.09	No	22.5	2.04	0.20	No
214	32.9	1.06	0.09	No	22.5	2.04	0.20	No
215	32.9	1.06	0.09	No	22.5	2.04	0.20	No
216	32.9	1.06	0.09	No	22.5	2.04	0.20	No
217	32.9	1.06	0.09	No	22.5	2.04	0.20	No
218	32.9	1.06	0.09	No	22.5	2.04	0.20	No
219	32.9	1.06	0.09	No	22.5	2.04	0.20	No
220	32.9	1.06	0.09	No	22.5	2.04	0.20	No
221	32.9	1.06	0.09	No	22.5	2.04	0.20	No
222	32.9	1.06	0.09	No	22.5	2.04	0.20	No
223	32.9	1.06	0.09	No	22.5	2.04	0.20	No
224	32.9	1.06	0.09	No	22.5	2.04	0.20	No
225	32.9	1.06	0.09	No	22.5	2.04	0.20	No
226	32.9	1.06	0.09	No	22.5	2.04	0.20	No
227	32.9	1.06	0.09	No	22.5	2.04	0.20	No
228	32.9	1.06	0.09	No	22.5	2.04	0.20	No
229	32.9	1.06	0.09	No	22.5	2.04	0.20	No
230	32.9	1.06	0.09	No	22.5	2.04	0.20	No
231	32.9	1.06	0.09	No	22.5	2.04	0.20	No
232	32.9	1.06	0.09	No	22.5	2.04	0.20	No
233	32.9	1.06	0.09	No	22.5	2.04	0.20	No
234	32.9	1.06	0.09	No	22.5	2.04	0.20	No
235	32.9	1.06	0.09	No	22.5	2.04	0.20	No
236	32.9	1.06	0.09	No	22.5	2.04	0.20	No
237	32.9	1.06	0.09	No	22.5	2.04	0.20	No
238	32.9	1.06	0.09	No	22.5	2.04	0.20	No
239	32.9	1.06	0.09	No	22.5	2.04	0.20	No
240	32.9	1.06	0.09	No	22.5	2.04	0.20	No
241	32.9	1.06	0.09	No	22.5	2.04	0.20	No
242	32.9	1.06	0.09	No	22.5	2.04	0.20	No

Model Element	Summer				Winter			
	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?
243	32.9	1.06	0.09	No	22.5	2.04	0.20	No
244	32.9	1.06	0.09	No	22.5	2.04	0.20	No
245	32.9	1.06	0.09	No	22.5	2.04	0.20	No
246	32.9	1.06	0.09	No	22.5	2.04	0.20	No
247	32.9	1.06	0.09	No	22.5	2.04	0.20	No
248	32.9	1.06	0.09	No	22.5	2.04	0.20	No
249	32.9	1.06	0.09	No	22.5	2.04	0.20	No
250	32.9	1.06	0.09	No	22.5	2.04	0.20	No
251	32.9	1.06	0.09	No	22.5	2.04	0.20	No
252	32.9	1.06	0.09	No	22.5	2.04	0.20	No
253	32.9	1.06	0.09	No	22.5	2.04	0.20	No
254	32.9	1.06	0.09	No	22.5	2.04	0.20	No
255	32.9	1.06	0.09	No	22.5	2.04	0.20	No
256	32.9	1.06	0.09	No	22.5	2.04	0.20	No
257	32.9	1.06	0.09	No	22.5	2.04	0.20	No
258	32.9	1.06	0.08	No	22.5	2.04	0.20	No
259	32.9	1.06	0.08	No	22.5	2.04	0.20	No
260	32.9	1.06	0.08	No	22.5	2.04	0.20	No
261	32.9	1.06	0.08	No	22.5	2.04	0.20	No
262	32.9	1.06	0.08	No	22.5	2.04	0.20	No
263	32.9	1.06	0.08	No	22.5	2.04	0.20	No
264	32.9	1.06	0.08	No	22.5	2.04	0.20	No
265	32.9	1.06	0.08	No	22.5	2.04	0.20	No
266	32.9	1.06	0.08	No	22.5	2.04	0.20	No
267	32.9	1.06	0.08	No	22.5	2.04	0.20	No
268	32.9	1.06	0.08	No	22.5	2.04	0.20	No
269	32.9	1.06	0.08	No	22.5	2.04	0.20	No
270	32.9	1.06	0.08	No	22.5	2.04	0.20	No
271	32.9	1.06	0.08	No	22.5	2.04	0.20	No
272	32.9	1.06	0.08	No	22.5	2.04	0.20	No
273	32.9	1.06	0.08	No	22.5	2.04	0.20	No
274	32.9	1.06	0.08	No	22.5	2.04	0.20	No
275	32.9	1.06	0.08	No	22.5	2.04	0.20	No
276	32.9	1.06	0.08	No	22.5	2.04	0.20	No
277	32.9	1.06	0.08	No	22.5	2.04	0.20	No
278	32.9	1.06	0.08	No	22.5	2.04	0.20	No
279	32.9	1.06	0.09	No	22.5	2.04	0.20	No
280	32.9	1.06	0.09	No	22.5	2.04	0.20	No
281	32.9	1.06	0.09	No	22.5	2.04	0.20	No
282	32.9	1.06	0.10	No	22.5	2.04	0.20	No
283	32.9	1.06	0.08	No	22.5	2.04	0.20	No
284	32.9	1.06	0.08	No	22.5	2.04	0.20	No
285	32.9	1.06	0.08	No	22.5	2.04	0.20	No
286	32.9	1.06	0.08	No	22.5	2.04	0.20	No
287	32.9	1.06	0.08	No	22.5	2.04	0.20	No
288	32.9	1.06	0.08	No	22.5	2.04	0.20	No
289	32.9	1.06	0.08	No	22.5	2.04	0.20	No
290	32.9	1.06	0.08	No	22.5	2.04	0.20	No
291	32.9	1.06	0.08	No	22.5	2.04	0.20	No
292	32.9	1.06	0.08	No	22.5	2.04	0.20	No
293	32.9	1.06	0.08	No	22.5	2.04	0.20	No
294	32.9	1.06	0.08	No	22.5	2.04	0.20	No
295	32.9	1.06	0.08	No	22.5	2.04	0.20	No
296	32.9	1.06	0.08	No	22.5	2.04	0.20	No

Model Element	Summer				Winter			
	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?
297	32.9	1.06	0.08	No	22.5	2.04	0.20	No
298	32.9	1.06	0.08	No	22.5	2.04	0.20	No
299	32.9	1.06	0.08	No	22.5	2.04	0.20	No
300	32.9	1.06	0.08	No	22.5	2.04	0.20	No
301	32.9	1.06	0.08	No	22.5	2.04	0.20	No
302	32.9	1.06	0.08	No	22.5	2.04	0.20	No
303	32.9	1.06	0.08	No	22.5	2.04	0.20	No
304	32.9	1.06	0.08	No	22.5	2.04	0.20	No
305	32.9	1.06	0.08	No	22.5	2.04	0.20	No
306	32.9	1.06	0.08	No	22.5	2.04	0.20	No
307	32.9	1.06	0.08	No	22.5	2.04	0.20	No
308	32.9	1.06	0.08	No	22.5	2.04	0.20	No
309	32.9	1.06	0.08	No	22.5	2.04	0.20	No
310	32.9	1.06	0.08	No	22.5	2.04	0.20	No
311	32.9	1.06	0.08	No	22.5	2.04	0.20	No
312	32.9	1.06	0.08	No	22.5	2.04	0.20	No
313	32.9	1.06	0.08	No	22.5	2.04	0.20	No
314	32.9	1.06	0.08	No	22.5	2.04	0.20	No
315	32.9	1.06	0.08	No	22.5	2.04	0.20	No
316	32.9	1.06	0.08	No	22.5	2.04	0.20	No
317	32.9	1.06	0.08	No	22.5	2.04	0.20	No
318	32.9	1.06	0.08	No	22.5	2.04	0.20	No
319	32.9	1.06	0.08	No	22.5	2.04	0.20	No
320	32.9	1.06	0.08	No	22.5	2.04	0.20	No
321	32.9	1.06	0.08	No	22.5	2.04	0.20	No
322	32.9	1.06	0.08	No	22.5	2.04	0.20	No
323	32.9	1.06	0.08	No	22.5	2.04	0.20	No
324	32.9	1.06	0.08	No	22.5	2.04	0.20	No
325	32.9	1.06	0.08	No	22.5	2.04	0.20	No
326	32.9	1.06	0.08	No	22.5	2.04	0.20	No
327	32.9	1.06	0.08	No	22.5	2.04	0.20	No
328	32.9	1.06	0.08	No	22.5	2.04	0.20	No
329	32.9	1.06	0.08	No	22.5	2.04	0.20	No
330	32.9	1.06	0.08	No	22.5	2.04	0.20	No
331	32.9	1.06	0.08	No	22.5	2.04	0.20	No
332	32.9	1.06	0.08	No	22.5	2.04	0.20	No
333	32.9	1.06	0.08	No	22.5	2.04	0.25	No
334	32.9	1.06	0.08	No	22.5	2.04	0.25	No
335	32.9	1.06	0.08	No	22.5	2.04	0.25	No
336	32.9	1.06	0.08	No	22.5	2.04	0.25	No
337	32.9	1.06	0.08	No	22.5	2.04	0.25	No
338	32.9	1.06	0.08	No	22.5	2.04	0.24	No
339	32.9	1.06	0.08	No	22.5	2.04	0.24	No
340	32.9	1.06	0.08	No	22.5	2.04	0.24	No
341	32.9	1.06	0.08	No	22.5	2.04	0.24	No
342	32.9	1.06	0.08	No	22.5	2.04	0.24	No
343	32.9	1.06	0.08	No	22.5	2.04	0.24	No
344	32.9	1.06	0.08	No	22.5	2.04	0.24	No
345	32.9	1.06	0.08	No	22.5	2.04	0.24	No
346	32.9	1.06	0.08	No	22.5	2.04	0.24	No
347	32.9	1.06	0.08	No	22.5	2.04	0.24	No
348	32.9	1.06	0.08	No	22.5	2.04	0.24	No
349	32.9	1.06	0.08	No	22.5	2.04	0.24	No
350	32.9	1.06	0.08	No	22.5	2.04	0.24	No

Model Element	Summer				Winter			
	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?
351	32.9	1.06	0.08	No	22.5	2.04	0.24	No
352	32.9	1.06	0.08	No	22.5	2.04	0.24	No
353	32.9	1.06	0.08	No	22.5	2.04	0.24	No
354	32.9	1.06	0.08	No	22.5	2.04	0.24	No
355	32.9	1.06	0.08	No	22.5	2.04	0.24	No
356	32.9	1.06	0.08	No	22.5	2.04	0.23	No
357	32.9	1.06	0.08	No	22.5	2.04	0.23	No
358	32.9	1.06	0.08	No	22.5	2.04	0.23	No
359	32.9	1.06	0.08	No	22.5	2.04	0.23	No
360	32.9	1.06	0.08	No	22.5	2.04	0.23	No
361	32.9	1.06	0.08	No	22.5	2.04	0.23	No
362	32.9	1.06	0.08	No	22.5	2.04	0.23	No
363	32.9	1.06	0.08	No	22.5	2.04	0.23	No
364	32.9	1.06	0.08	No	22.5	2.04	0.23	No
365	32.9	1.06	0.08	No	22.5	2.04	0.23	No
366	32.9	1.06	0.08	No	22.5	2.04	0.23	No
367	32.9	1.06	0.08	No	22.5	2.04	0.23	No
368	32.9	1.06	0.08	No	22.5	2.04	0.23	No
369	32.9	1.06	0.08	No	22.5	2.04	0.23	No
370	32.9	1.06	0.08	No	22.5	2.04	0.23	No
371	32.9	1.06	0.08	No	22.5	2.04	0.23	No
372	32.9	1.06	0.08	No	22.5	2.04	0.23	No
373	32.9	1.06	0.08	No	22.5	2.04	0.23	No
374	32.9	1.06	0.08	No	22.5	2.04	0.23	No
375	32.9	1.06	0.08	No	22.5	2.04	0.23	No
376	32.9	1.06	0.08	No	22.5	2.04	0.23	No
377	32.9	1.06	0.08	No	22.5	2.04	0.23	No
378	32.9	1.06	0.08	No	22.5	2.04	0.23	No
379	32.9	1.06	0.08	No	22.5	2.04	0.23	No
380	32.9	1.06	0.08	No	22.5	2.04	0.23	No
381	32.9	1.06	0.08	No	22.5	2.04	0.23	No
382	32.9	1.06	0.08	No	22.5	2.04	0.23	No
383	32.9	1.06	0.08	No	22.5	2.04	0.23	No
384	32.9	1.06	0.08	No	22.5	2.04	0.23	No
385	32.9	1.06	0.08	No	22.5	2.04	0.23	No
386	32.9	1.06	0.08	No	22.5	2.04	0.23	No
387	32.9	1.06	0.08	No	22.5	2.04	0.23	No
388	32.9	1.06	0.08	No	22.5	2.04	0.23	No
389	32.9	1.06	0.08	No	22.5	2.04	0.23	No
390	32.9	1.06	0.08	No	22.5	2.04	0.23	No
391	32.9	1.06	0.08	No	22.5	2.04	0.23	No
392	32.9	1.06	0.08	No	22.5	2.04	0.22	No
393	32.9	1.06	0.08	No	22.5	2.04	0.22	No
394	32.9	1.06	0.08	No	22.5	2.04	0.22	No
395	32.9	1.06	0.08	No	22.5	2.04	0.22	No
396	32.9	1.06	0.08	No	22.5	2.04	0.22	No
397	32.9	1.06	0.08	No	22.5	2.04	0.22	No
398	32.9	1.06	0.08	No	22.5	2.04	0.22	No
399	32.9	1.06	0.08	No	22.5	2.04	0.22	No
400	32.9	1.06	0.08	No	22.5	2.04	0.22	No
401	32.9	1.06	0.08	No	22.5	2.04	0.22	No
402	32.9	1.06	0.08	No	22.5	2.04	0.22	No
403	32.9	1.06	0.08	No	22.5	2.04	0.21	No
404	32.9	1.06	0.08	No	22.5	2.04	0.21	No

Model Element	Summer				Winter			
	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?	Temp. in projection run (ºC)	Calculated CCC (mg N/L)	Predicted NH3-N conc. in projection (mg N/L)	Toxic ?
405	32.9	1.06	0.08	No	22.5	2.04	0.21	No
406	32.9	1.06	0.08	No	22.5	2.04	0.21	No
407	32.9	1.06	0.08	No	22.5	2.04	0.21	No
408	32.9	1.06	0.08	No	22.5	2.04	0.20	No
409	32.9	1.06	0.08	No	22.5	2.04	0.20	No
410	32.9	1.06	0.08	No	22.5	2.04	0.20	No
411	32.9	1.06	0.08	No	22.5	2.04	0.20	No
412	32.9	1.06	0.08	No	22.5	2.04	0.19	No
413	32.9	1.06	0.08	No	22.5	2.04	0.19	No
414	32.9	1.06	0.08	No	22.5	2.04	0.19	No
415	32.9	1.06	0.08	No	22.5	2.04	0.18	No
416	32.9	1.06	0.08	No	22.5	2.04	0.18	No
417	32.9	1.06	0.08	No	22.5	2.04	0.18	No
418	32.9	1.06	0.08	No	22.5	2.04	0.17	No
419	32.9	1.06	0.08	No	22.5	2.04	0.17	No
420	32.9	1.06	0.08	No	22.5	2.04	0.16	No
421	32.9	1.06	0.08	No	22.5	2.04	0.16	No
422	32.9	1.06	0.08	No	22.5	2.04	0.16	No
423	32.9	1.06	0.08	No	22.5	2.04	0.15	No
424	32.9	1.06	0.08	No	22.5	2.04	0.15	No
425	32.9	1.06	0.08	No	22.5	2.04	0.14	No
426	32.9	1.06	0.08	No	22.5	2.04	0.14	No
427	32.9	1.06	0.08	No	22.5	2.04	0.13	No
428	32.9	1.06	0.08	No	22.5	2.04	0.12	No
429	32.9	1.06	0.08	No	22.5	2.04	0.12	No
430	32.9	1.06	0.08	No	22.5	2.04	0.11	No
431	32.9	1.06	0.08	No	22.5	2.04	0.11	No
432	32.9	1.06	0.08	No	22.5	2.04	0.10	No

Number of elements with toxicity = 0

Number of elements with toxicity = 0

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APPENDIX Q

Nutrient TMDL Calculations

NUTRIENT DATA FOR REFERENCE SITES IN LOWER TERREBONNE BASIN

Nutrient Data for Reference Waterbodies in the Terrebonne Basin:
(Source: Report prepared for EPA Region 6 by Cadmus, dated May 30, 2007)

	Parameter	Bayou Tambour (C-11)	Jude's Cut (C-12)	Bayou Platt (C-13)	Fred Bayou (C-14)	Off of Bayou DuLarge (C-15)	Averages for five sites
Summer 2005	Nitrate N (mg/L)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	--
	Nitrite N (mg/L)	< 0.02	0.02	< 0.02	< 0.02	0.03	--
	TKN (mg/L)	1.84	2.11	1.66	1.70	1.84	--
	Total N* (mg/L)	1.86	2.14	1.68	1.72	1.88	1.86
	Total P (mg/L)	0.15	0.15	0.17	0.15	0.18	0.16
Winter 2006	Nitrate N (mg/L)	0.24	0.02	0.13	< 0.02	0.12	--
	Nitrite N (mg/L)	0.03	< 0.02	0.03	< 0.02	0.04	--
	TKN (mg/L)	2.63	0.90		1.41	1.40	--
	Total N* (mg/L)	2.90	0.93	0.16	1.43	1.56	1.40
	Total P (mg/L)	0.17	0.11	0.08	0.11	0.12	0.12
Spring 2006	Nitrate N (mg/L)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	--
	Nitrite N (mg/L)	< 0.02	0.02	< 0.02	0.02	< 0.02	--
	TKN (mg/L)	1.47	1.87	1.88	2.03	1.51	--
	Total N* (mg/L)	1.49	1.90	1.90	2.06	1.53	1.78
	Total P (mg/L)	0.09	0.15	0.18	0.19	0.16	0.15
Summer 2006	Nitrate N (mg/L)	< 0.02	< 0.02	< 0.02	0.04	< 0.02	--
	Nitrite N (mg/L)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	--
	TKN (mg/L)	1.95	1.77	1.70	1.57	1.80	--
	Total N* (mg/L)	1.97	1.79	1.72	1.62	1.82	1.78
	Total P (mg/L)	0.15	0.13	0.19	0.13	0.22	0.16

Overall average concentrations:

Total N* (mg/L) average for all four sampling events = 1.70
Total P (mg/L) average for all four sampling events = 0.15

*Notes: A. Total N was calculated as Nitrate + Nitrite + TKN
B. Values below the detection limit were entered as half of the detection limit.

Naturally occurring ratio of total N to total P = 1.70 ÷ 0.15 = 11.3

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SUMMER NUTRIENT TMDL CALCULATIONS FOR LOST LAKE / FOUR LEAGUE BAY (SUBSEGMENT 120708)

Naturally occurring ratio of total nitrogen to total phosphorus = 11.3 (from report prepared for EPA Region 6 by Cadmus, dated May 30, 2007)
Percentage for explicit margin of safety = 10%
Percentage for explicit future growth = 10%

	Flow (m3/sec)	Organic N conc. (mg/L)	Ammonia conc. (mg/L)	NO2+NO3 conc. (mg/L)	Organic N load (kg/day)	Ammonia load (kg/day)	NO2+NO3 load (kg/day)	Allowable loads of total N (kg/day)	Allowable loads of total P (kg/day)	Allowable loads of total N (lbs/day)	Allowable loads of total P (lbs/day)
Nonpoint Sources:											
Bayou de Cade inflow	0.028	1.40	0.10	0.04	3.4	0.2	0.1	3.7	0.3	8.2	0.7
Atchafalaya Bay inflow	0.028	0.57	0.10	0.90	1.4	0.2	2.2	3.8	0.3	8.4	0.7
Mass loads (Data Type 19)	--	--	--	--	3072.0	--	--	3072.0	271.9	6772.5	599.3
Benthic loads (Data Type 13)	--	--	--	--	--	0.00	--	0.0	0.0	0.0	0.0
Point Sources											
None	0				0	0	0	0	0	0	0
Total Point and Nonpoint Source Loading								3079.5	272.5	6789.1	600.7
Explicit Margin of Safety								384.9	34.1	848.6	75.1
Explicit Future Growth								384.9	34.1	848.6	75.1
Total maximum daily loads:								3849.3	340.7	8486.3	750.9

Notes:

1. Headwater inflows were taken directly from summer projection simulation.
2. Headwater inflow concentrations of organic N and ammonia were taken from the summer projection simulation.
3. Bayou de Cade inflow concentration of NO2+NO3 was set to the measured value at 120708-F during the FTN field study.
4. Atchafalaya Bay inflow concentration of NO2+NO3 was set to the average of values at LDEQ station 1204 when Atchafalaya River flows were less than 150,000 cfs.
5. Inflow loads (kg/day) were calculated as flow (m3/sec) times concentration (mg/L) times conversion factor of 86.4.
6. Mass loads (Data Type 19) were taken directly from summer projection simulation for all six reaches (462+69+231+1848+385+77).
7. Benthic loads (Data Type 13) were taken directly from summer projection simulation (zero for all 6 reaches).
8. Allowable loads of total N were calculated as loads of organic N plus loads of ammonia plus loads of NO2+NO3.
9. Allowable loads of total P were calculated as allowable loads of total N divided by naturally occurring ratio of total N to total P.
10. Explicit MOS loads were calculated as total point and nonpoint source loads divided by 80% (1 minus MOS minus FG), then multiplied by 10% (MOS).
11. Explicit FG loads were calculated as total point and nonpoint source loads divided by 80% (1 minus MOS minus FG), then multiplied by 10% (FG).

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WINTER NUTRIENT TMDL CALCULATIONS FOR LOST LAKE / FOUR LEAGUE BAY (SUBSEGMENT 120708)

Naturally occurring ratio of total nitrogen to total phosphorus = 11.3 (from report prepared for EPA Region 6 by Cadmus, dated May 30, 2007)
Percentage for explicit margin of safety = 10%
Percentage for explicit future growth = 10%

	Flow (m3/sec)	Organic N conc. (mg/L)	Ammonia conc. (mg/L)	NO2+NO3 conc. (mg/L)	Organic N load (kg/day)	Ammonia load (kg/day)	NO2+NO3 load (kg/day)	Allowable loads of total N (kg/day)	Allowable loads of total P (kg/day)	Allowable loads of total N (lbs/day)	Allowable loads of total P (lbs/day)
Nonpoint Sources:											
Bayou de Cade inflow	0.028	1.40	0.10	0.04	3.4	0.2	0.1	3.7	0.3	8.2	0.7
Atchafalaya Bay inflow	0.028	0.57	0.10	0.90	1.4	0.2	2.2	3.8	0.3	8.4	0.7
Mass loads (Data Type 19)	--	--	--	--	3990.0	--	--	3990.0	353.1	8796.4	778.4
Benthic loads (Data Type 13)	--	--	--	--	--	0.00	--	0.0	0.0	0.0	0.0
Point Sources											
None	0				0	0	0	0	0	0	0
Total Point and Nonpoint Source Loading								3997.5	353.7	8813	779.8
Explicit Margin of Safety								499.7	44.2	1101.6	97.5
Explicit Future Growth								499.7	44.2	1101.6	97.5
Total maximum daily loads:								4996.9	442.1	11016.2	974.8

Notes:

1. Headwater inflows were taken directly from winter projection simulation.
2. Headwater inflow concentrations of organic N and ammonia were taken from the winter projection simulation.
3. Bayou de Cade inflow concentration of NO2+NO3 was set to the measured value at 120708-F during the FTN field study.
4. Atchafalaya Bay inflow concentration of NO2+NO3 was set to the average of values at LDEQ station 1204 when Atchafalaya River flows were less than 150,000 cfs.
5. Inflow loads (kg/day) were calculated as flow (m3/sec) times concentration (mg/L) times conversion factor of 86.4.
6. Mass loads (Data Type 19) were taken directly from winter projection simulation for all six reaches (600+90+300+2400+500+100).
7. Benthic loads (Data Type 13) were taken directly from winter projection simulation (zero for all 6 reaches).
8. Allowable loads of total N were calculated as loads of organic N plus loads of ammonia plus loads of NO2+NO3.
9. Allowable loads of total P were calculated as allowable loads of total N divided by naturally occurring ratio of total N to total P.
10. Explicit MOS loads were calculated as total point and nonpoint source loads divided by 80% (1 minus MOS minus FG), then multiplied by 10% (MOS).
11. Explicit FG loads were calculated as total point and nonpoint source loads divided by 80% (1 minus MOS minus FG), then multiplied by 10% (FG).

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