APPENDIX K

Published 7Q10 Information and 7Q10 Calculations

Table K.1. Calculations for flow in Subsegment 101302.

7/14/2004

Iatt Creek flow =	4.23	cfs	(from LDEQ TMDL for Iatt Creek, Station IC8)
Big Creek flow =	50	cfs	(from USGS Station 07373000 - Big Creek at Pollock, LA)
Iatt Creek : Big Creek ratio =	0.0846		

9/8/2005

Iatt Creek flow =	0.846	cfs	(calculated based on ratio of Iatt Creek and Big Creek flows)
Big Creek flow =	10	cfs	(from USGS Station 07373000 - Big Creek at Pollock, LA)
Area of XS =	51.4	ft^2	(from LDEQ TMDL for Iatt Creek, Station IC8)
Avg velocity =	0.016459	ft/sec	

Drainage Areas

Iatt Creek at Lake Iatt =	113.34	mi2	Drainage per Unit Area =	0.007464	cfs/mi2
Iatt Creek at Iatt Lake Dam =	238.45	mi2			

Flow at Iatt Lake Dam = 1.779854 cfs

						from mouth of Rigolette			
Flow Iatt Creek at Lake Iatt =	0.846	cfs	0.023956	cms	@ RM	34.30702	=	55.2	km
Flow Dartigo Cr at Lake Iatt =	0.62257	cfs	0.017629	cms	@ RM	30.5	=	49.08499	km
Flow Black Cr at Lake Iatt = (1.8 mi d/s Dartigo Cr)	0.311285	cfs	0.008815	cms	@ RM	28.7	=	46.18817	km

Table K.2. Calculations for flow in Subsegment 101301.

Flow at Dam =	1.78	cfs	0.050404	cms									
Flow from Colfax =	0.451389	cfs	0.012782	cms	(0.3 MGD, monthly avg from 9/2005 DMR)								
Flow at 101301-A =	3	cfs	0.084951	cms	(measured during FTN survey)								
Incremental flow =	0.768611	cfs	0.021765	cms									
Drainage area =	73.96	mi^2			(area at mouth of Gray Creek - area at Iatt Lake Dam)								
Inc. flow / unit area =	0.010392	cfs / mi^2											
Drainage area =	100.16	mi^2			(area at Bayou Rigolette mouth - area at mouth of Gray Creek)								
Inc. flow =	1.040888	cfs	0.029475	cms									
Total flow =	4.040888	cfs	0.114425	cms									
XS Area at 1220 =	746.3	ft^2											
Velocity at 1220 =	0.005415	ft/s											
Remaining Incremental flow above 101301-A			0.004117	cms	divided evenly between Sugarhouse Bayou and Gray Creek								
Sugarhouse Bayou													
Drainage area at head =	2.4	mi^2			(Bayou Grappe = head of Sugarhouse Bayou)								
Flow at head =	0.024941	cfs	0.000706	cms									
Drainage area at mouth =	28.8	mi^2					from mouth of Rigolette				from Iatt dam	Model element	
Flow at mouth =	0.299297	cfs	0.008475	cms	@ RM	23.75	=	38.22192	km		3.87808 km	69.7808	
Gray Creek													
Drainage area at mouth =	31.17	mi^2											
Flow at mouth =	0.323927	cfs	0.009173	cms	@ RM	18	=	28.96819	km		13.13181 km	293.3181	179.3181
Remaining incremental flow above Rigolette at mouth			0.014369	cms									
Bayou Marteau													
Drainage area at mouth =	36.63	mi^2											
Flow at mouth =	0.380668	cfs	0.010779	cms	@ RM	12.5	=	20.1168	km		21.9832 km	381.832	267.832
Hudson Creek													
Drainage area at mouth =	14.7	mi^2											
Flow at mouth =	0.152766	cfs	0.004326	cms	@ RM	7	=	11.26541	km		30.83459 km	470.3459	356.3459

APPENDIX L

Projection Model Input Files

```
CNTROL01     LA-QUAL calibration for Lake Iatt and Bayou Rigolette
CNTROL02     Summer Projection
CNTROL03  NO SEQU
CNTROL04 YES METR
CNTROL05 YES OXYG
ENDATA01
MODOPT01  NO TEMP
MODOPT02  NO SALI
MODOPT03  NO CONS
MODOPT04  NO CONS
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
PROGRAM  HYDRAULIC CALCULATION METHOD       =   2.
PROGRAM  MAXIMUM ITERATION LIMIT            = 500.
ENDATA03
THETA    NH3 DECA 1.070
ENDATA04
ENDATA05
ENDATA06
ENDATA07
REACH ID    1  L1 Lake Iatt                              55.2      50.8   0.44000
REACH ID    2  L2 Lake Iatt                              50.8      46.4   0.44000
REACH ID    3  L3 Lake Iatt                              46.4      42.1   0.43000
REACH ID    4  R1 Rigolette Bayou                        42.1      38.0   0.10000
REACH ID    5  S1 Sugarhouse Bayou                        1.7         0   0.10000
REACH ID    6  R2 Rigolette Bayou                        38.0      30.7   0.10000
REACH ID    7  R3 Rigolette Bayou                        30.7      25.6   0.10000
REACH ID    8  R4 Rigolette Bayou                        25.6      18.4   0.10000
REACH ID    9  R5 Rigolette Bayou                        18.4       7.9   0.10000
REACH ID   10  R6 Rigolette Bayou                         7.9       3.7   0.10000
REACH ID   11  R7 Rigolette Bayou                         3.7        .0   0.10000
ENDATA08
HYDR-1      1     0.00   0.00  1483.   0.00   0.00   1
HYDR-1      2     0.00   0.00  2360.   0.00   0.00   1.5
HYDR-1      3     0.00   0.00  2257.   0.00   0.00   2
HYDR-1      4     0.00   0.00  16.     0.00   0.00   0.24
HYDR-1      5     0.00   0.00  21.59   0.00   0.00   0.24
HYDR-1      6     0.00   0.00  29.4    0.00   0.00   0.24
HYDR-1      7     0.00   0.00  11.1    0.00   0.00   0.24
HYDR-1      8     0.00   0.00  23.2    0.00   0.00   0.58
HYDR-1      9     0.00   0.00  10.8    0.00   0.00   0.94
HYDR-1     10     0.00   0.00  47.7    0.00   0.00   1.28
HYDR-1     11     0.00   0.00  97.5    0.00   0.00   1.28
ENDATA09
ENDATA10
INITIAL     1      24.2    0.00    1.82    0.18
INITIAL     2      24.2    0.00    1.82    0.18
INITIAL     3      24.2    0.00    1.82    0.18
INITIAL     4      24.2    0.00    5.47    0.19
INITIAL     5      24.2    0.00    5.47    0.19
INITIAL     6      24.2    0.00    5.47    0.19
INITIAL     7      24.2    0.00    5.47    0.19
INITIAL     8      25.3    0.00    5.01    0.17
INITIAL     9      26.7    0.00    4.40    0.14
INITIAL    10      27.4    0.00    4.10    0.12
INITIAL    11      27.4    0.00    4.10    0.12
```

```
ENDATA11
COEFF-1     1     20  0.70 0.00  0.000   1.50   0.15
COEFF-1     2     20  0.70 0.00  0.000   1.08   0.15
COEFF-1     3     20  0.70 0.00  0.000   0.92   0.15
COEFF-1     4     15  0.00 0.00  0.000   2.08   0.08
COEFF-1     5     15  0.00 0.00  0.000   1.22   0.08
COEFF-1     6     15  0.00 0.00  0.000   1.22   0.08
COEFF-1     7     15  0.00 0.00  0.000   1.57   0.08
COEFF-1     8     15  0.00 0.00  0.000   0.96   0.08
COEFF-1     9     15  0.00 0.00  0.000   0.96   0.08
COEFF-1    10     15  0.00 0.00  0.000   0.72   0.08
COEFF-1    11     15  0.00 0.00  0.000   0.72   0.08
ENDATA12
COEFF-2     1     0.02   0.00   1.00   0.06  0.00
COEFF-2     2     0.02   0.00   1.00   0.06  0.00
COEFF-2     3     0.02   0.00   1.00   0.06  0.00
COEFF-2     4     0.02   0.00   1.00   0.07  0.00
COEFF-2     5     0.02   0.00   1.00   0.07  0.00
COEFF-2     6     0.02   0.00   1.00   0.07  0.00
COEFF-2     7     0.02   0.00   1.00   0.07  0.00
COEFF-2     8     0.02   0.00   1.00   0.07  0.00
COEFF-2     9     0.02   0.00   1.00   0.07  0.00
COEFF-2    10     0.02   0.00   1.00   0.07  0.00
COEFF-2    11     0.02   0.00   1.00   0.07  0.00
ENDATA13
ENDATA14
ENDATA15
ENDATA16
ENDATA17
ENDATA18
NONPOINT    1       3266     68.2
NONPOINT    2       5640      141
NONPOINT    3       4230    159.8
NONPOINT    4        3.2     0.320
NONPOINT    5        3.2     0.320
NONPOINT    6       1.28     0.32
NONPOINT    7       1.28     0.320
NONPOINT    8         32     1.28
NONPOINT    9         64     1.920
NONPOINT   10        141     3.97
NONPOINT   11        250     6.08
ENDATA19
HDWTR-1     1  Iatt Creek @ 101302-A       0.019   27.9     0.0     0.0     0.0
HDWTR-1    72  Sugarhouse Bayou            0.003   27.9     0.0     0.0     0.0
ENDATA20
HDWTR-2     1       5.28    8.56     1.23     0.19     0.0545
HDWTR-2    72       5.26    0.40     0.44     0.08     0.025
ENDATA21
ENDATA22
JUNCTION  89   71   Sugarhouse Bayou
ENDATA23
WSTLD-1     9  NPS Dartigo Creek    0.003000     27.9
WSTLD-1    13  NPS Black Creek      0.003000     27.9
WSTLD-1    72  Colfax STP           0.016400     27.9
WSTLD-1   183  NPS Gray Creek       0.003000     27.9
WSTLD-1   267  NPS Bayou Marteau    0.003000     27.9
WSTLD-1   359  NPS Hudson Creek     0.003000     27.9
WSTLD-1   458  Tioga Manor Nursing  0.000900     27.9
WSTLD-1   458  Bellsouth Tioga Main 0.000002     27.9
ENDATA24
WSTLD-2     9       6.88     0.94  0.0     0.24    0.047    0     00.1
WSTLD-2    13       6.88     0.94  0.0     0.24    0.047    0     00.1
WSTLD-2    72        5.0     23.0  0.0     3.30     1.70    0     00.3
```

```
WSTLD-2   183       6.94     1.28  0.0     0.19     0.13    0     00.0
WSTLD-2   267       6.94     1.28  0.0     0.19     0.13    0     00.0
WSTLD-2   359       6.94     1.28  0.0     0.19     0.13    0     00.0
WSTLD-2   458        5.0     69.0  0.0     5.00     10.0    0     00.3
WSTLD-2   458        5.0     104   0.0     5.00     10.0    0     00.3
ENDATA25
ENDATA26
ENDATA27
ENDATA28
ENDATA29
NUMBER OF PLOTS = 1
NUMBER OF REACHES IN PLOT 1 = 10
PLOT RCH  1  2  3  4  6  7  8  9 10 11
ENDATA30
OVERLAY 1 rigolett.ovl                    :Iatt Lake & Bayou Rigolette
ENDATA31
```

```
CNTROL01     LA-QUAL Winter Projection for Lake Iatt and Bayou Rigolette
CNTROL02     Winter Projection
CNTROL03  NO SEQU
CNTROL04 YES METR
CNTROL05 YES OXYG
ENDATA01
MODOPT01  NO TEMP
MODOPT02  NO SALI
MODOPT03  NO CONS
MODOPT04  NO CONS
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
PROGRAM  HYDRAULIC CALCULATION METHOD       =   2.
PROGRAM  MAXIMUM ITERATION LIMIT            = 500.
ENDATA03
THETA    NH3 DECA 1.070
ENDATA04
ENDATA05
ENDATA06
ENDATA07
REACH ID    1  L1 Lake Iatt                              55.2      50.8   0.44000
REACH ID    2  L2 Lake Iatt                              50.8      46.4   0.44000
REACH ID    3  L3 Lake Iatt                              46.4      42.1   0.43000
REACH ID    4  R1 Rigolette Bayou                        42.1      38.0   0.10000
REACH ID    5  S1 Sugarhouse Bayou                        1.7         0   0.10000
REACH ID    6  R2 Rigolette Bayou                        38.0      30.7   0.10000
REACH ID    7  R3 Rigolette Bayou                        30.7      25.6   0.10000
REACH ID    8  R4 Rigolette Bayou                        25.6      18.4   0.10000
REACH ID    9  R5 Rigolette Bayou                        18.4       7.9   0.10000
REACH ID   10  R6 Rigolette Bayou                         7.9       3.7   0.10000
REACH ID   11  R7 Rigolette Bayou                         3.7        .0   0.10000
ENDATA08
HYDR-1      1     0.00   0.00  1483.   0.00   0.00   1
HYDR-1      2     0.00   0.00  2360.   0.00   0.00   1.5
HYDR-1      3     0.00   0.00  2257.   0.00   0.00   2
HYDR-1      4     0.00   0.00  16.     0.00   0.00   0.24
HYDR-1      5     0.00   0.00  21.59   0.00   0.00   0.24
HYDR-1      6     0.00   0.00  29.4    0.00   0.00   0.24
HYDR-1      7     0.00   0.00  11.1    0.00   0.00   0.24
HYDR-1      8     0.00   0.00  23.2    0.00   0.00   0.58
HYDR-1      9     0.00   0.00  10.8    0.00   0.00   0.94
HYDR-1     10     0.00   0.00  47.7    0.00   0.00   1.28
HYDR-1     11     0.00   0.00  97.5    0.00   0.00   1.28
ENDATA09
ENDATA10
INITIAL     1      24.2    0.00    1.82    0.18
INITIAL     2      24.2    0.00    1.82    0.18
INITIAL     3      24.2    0.00    1.82    0.18
INITIAL     4      24.2    0.00    5.47    0.19
INITIAL     5      24.2    0.00    5.47    0.19
INITIAL     6      24.2    0.00    5.47    0.19
INITIAL     7      24.2    0.00    5.47    0.19
INITIAL     8      25.3    0.00    5.01    0.17
INITIAL     9      26.7    0.00    4.40    0.14
INITIAL    10      27.4    0.00    4.10    0.12
INITIAL    11      27.4    0.00    4.10    0.12
```

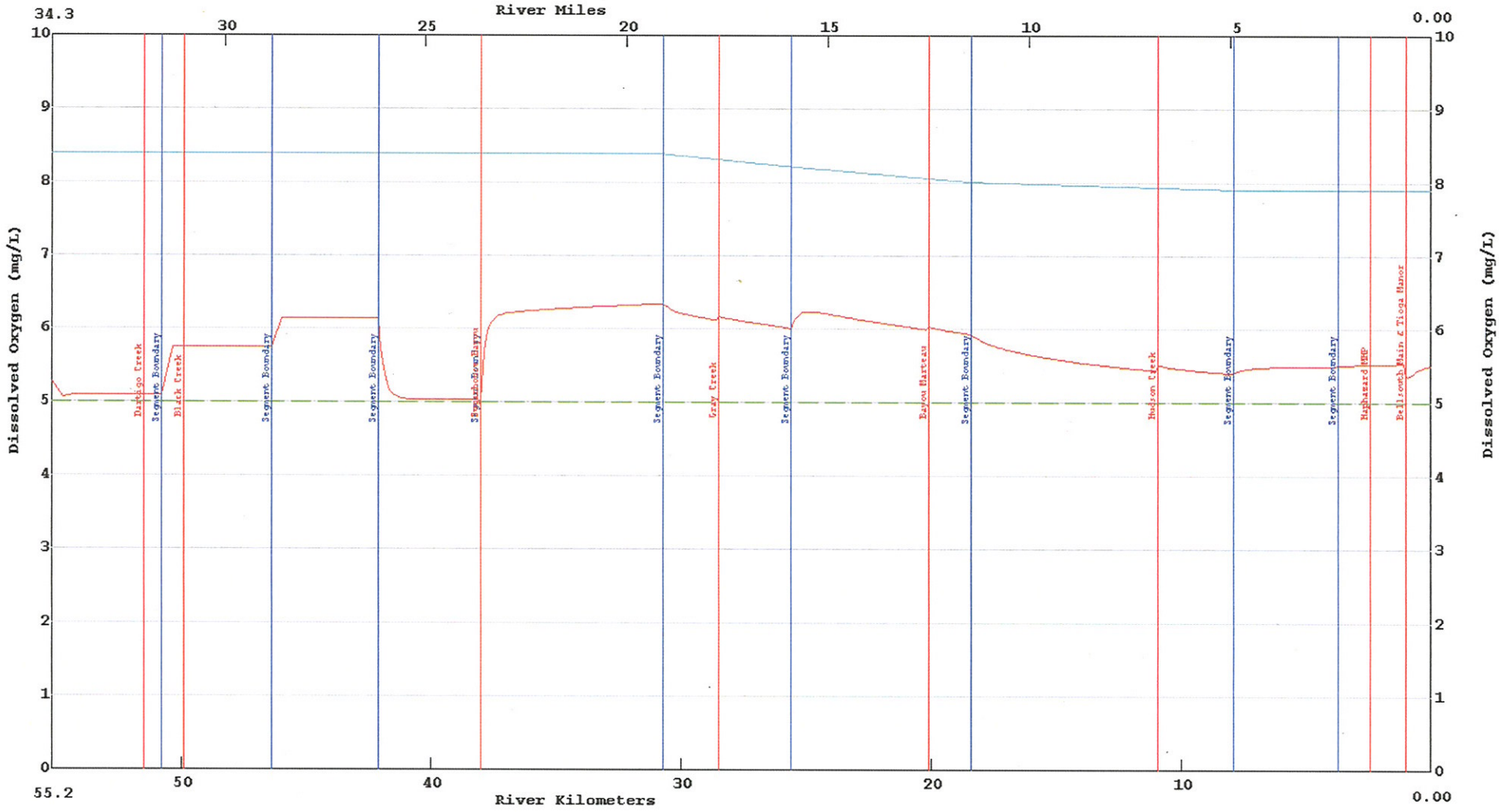
```
ENDATA11
COEFF-1     1     20  0.70 0.00  0.000   1.50   0.15
COEFF-1     2     20  0.70 0.00  0.000   1.08   0.15
COEFF-1     3     20  0.70 0.00  0.000   0.92   0.15
COEFF-1     4     15  0.00 0.00  0.000   2.47   0.08
COEFF-1     5     15  0.00 0.00  0.000   1.44   0.08
COEFF-1     6     15  0.00 0.00  0.000   1.44   0.08
COEFF-1     7     15  0.00 0.00  0.000   1.86   0.08
COEFF-1     8     15  0.00 0.00  0.000   1.14   0.08
COEFF-1     9     15  0.00 0.00  0.000   1.14   0.08
COEFF-1    10     15  0.00 0.00  0.000   0.85   0.08
COEFF-1    11     15  0.00 0.00  0.000   0.85   0.08
ENDATA12
COEFF-2     1     0.02   0.00   1.00   0.06  0.00
COEFF-2     2     0.02   0.00   1.00   0.06  0.00
COEFF-2     3     0.02   0.00   1.00   0.06  0.00
COEFF-2     4     0.02   0.00   1.00   0.07  0.00
COEFF-2     5     0.02   0.00   1.00   0.07  0.00
COEFF-2     6     0.02   0.00   1.00   0.07  0.00
COEFF-2     7     0.02   0.00   1.00   0.07  0.00
COEFF-2     8     0.02   0.00   1.00   0.07  0.00
COEFF-2     9     0.02   0.00   1.00   0.07  0.00
COEFF-2    10     0.02   0.00   1.00   0.07  0.00
COEFF-2    11     0.02   0.00   1.00   0.07  0.00
ENDATA13
ENDATA14
ENDATA15
ENDATA16
ENDATA17
ENDATA18
NONPOINT    1       3267     68.2
NONPOINT    2       5640      141
NONPOINT    3       4230      160
NONPOINT    4       3.80     0.38
NONPOINT    5       3.80     0.38
NONPOINT    6       1.52     0.38
NONPOINT    7       1.52     0.38
NONPOINT    8         38     1.52
NONPOINT    9         76     2.28
NONPOINT   10        167     4.71
NONPOINT   11        296     7.22
ENDATA19
HDWTR-1     1  Iatt Creek @ 101302-A       0.033   19.9     0.0     0.0     0.0
HDWTR-1    72  Sugarhouse Bayou            0.030   19.9     0.0     0.0     0.0
ENDATA20
HDWTR-2     1       7.48    10.39     1.69     0.09     0.0545
HDWTR-2    72       3.69     0.76     0.84     0.14     0.025
ENDATA21
ENDATA22
JUNCTION  89   71   Sugarhouse Bayou
ENDATA23
WSTLD-1     9  NPS Dartigo Creek    0.030000     19.9
WSTLD-1    13  NPS Black Creek      0.030000     19.9
WSTLD-1    72  Colfax STP           0.016400     19.9
WSTLD-1   183  NPS Gray Creek       0.030000     19.9
WSTLD-1   267  NPS Bayou Marteau    0.030000     19.9
WSTLD-1   359  NPS Hudson Creek     0.030000     19.9
WSTLD-1   458  Tioga Manor Nursing  0.000900     19.9
WSTLD-1   458  Bellsouth Tioga Main 0.000002     19.9
ENDATA24
WSTLD-2     9       8.76     0.94  0.0     0.24     0.05    0     00.1
WSTLD-2    13       8.76     0.94  0.0     0.24     0.05    0     00.1
WSTLD-2    72       5.00     34.5  0.0      3.3      1.7    0     00.3
```

```
WSTLD-2   183       8.09     1.52  0.0     0.23     0.15    0     00.0
WSTLD-2   267       8.09     1.52  0.0     0.23     0.15    0     00.0
WSTLD-2   359       8.09     1.52  0.0     0.23     0.15    0     00.0
WSTLD-2   458       5.00     104   0.0      5.0     10.0    0     00.3
WSTLD-2   458       5.00     104   0.0      5.0     10.0    0     00.3
ENDATA25
ENDATA26
ENDATA27
ENDATA28
ENDATA29
NUMBER OF PLOTS = 1
NUMBER OF REACHES IN PLOT 1 = 10
PLOT RCH  1  2  3  4  6  7  8  9 10 11
ENDATA30
OVERLAY 1 IATTLAKE.ovl                    :Iatt Lake
ENDATA31
```

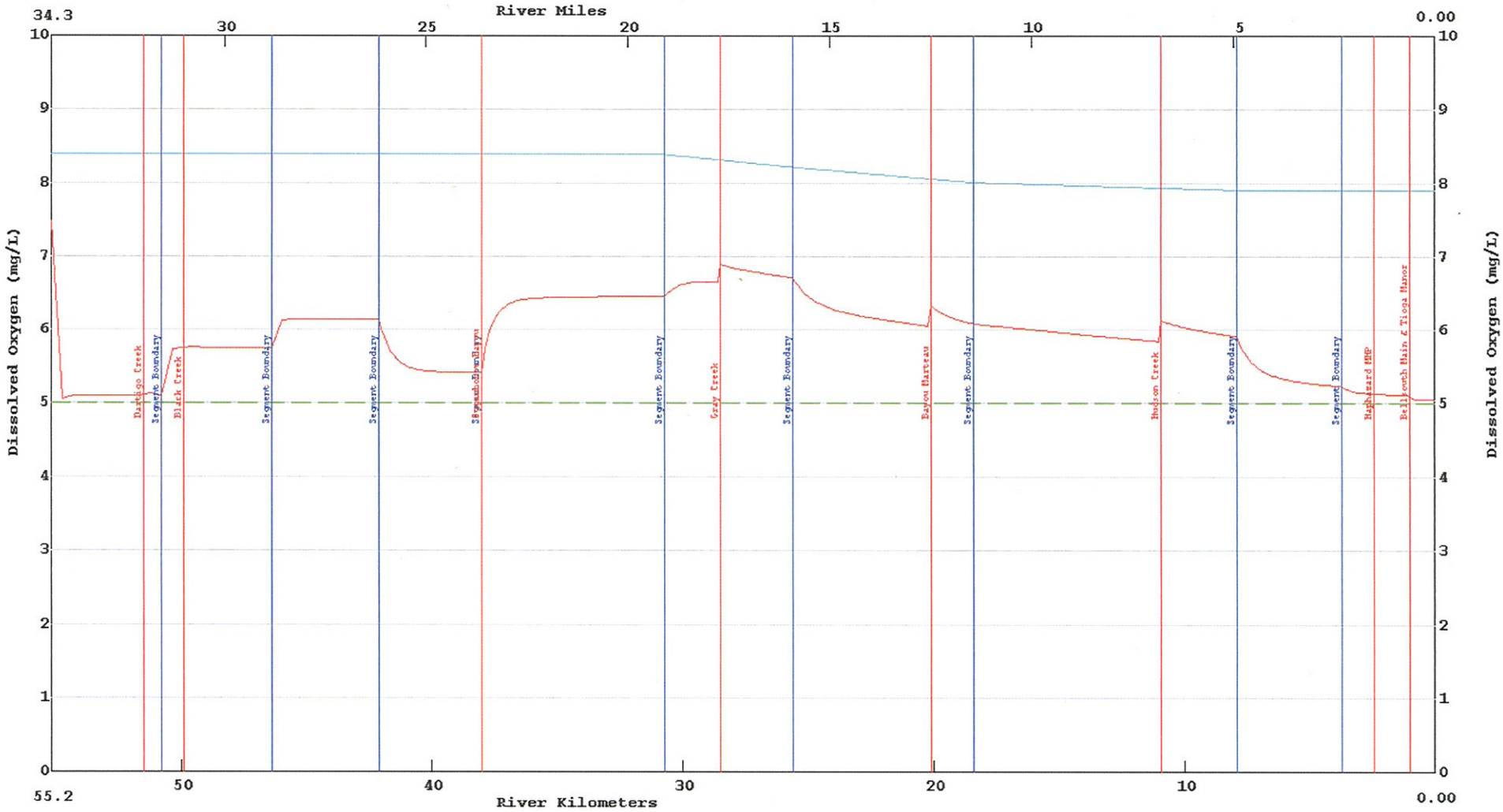
APPENDIX M

Plot of Predicted Dissolved Oxygen for Projections

LA-QUAL Version 8.11 Run at 10:10 on 02/28/2008 File D:\laqual\Iatt Rigolette sum proj2.txt
Summer Projection min= 5.03 max= 6.34
Iatt Lake & Bayou Rigolette



LA-QUAL Version 8.11 Run at 10:10 on 02/28/2008 File D:\laqual\Iatt Lake winter proj3.txt
Winter Projection min= 5.04 max= 7.48
Iatt Lake & Rigolette



APPENDIX N

Printout of Model Output for Projections

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

Input file is D:\laqual\Iatt Rigolette sum proj2.txt
Output produced at 10:43 on 03/12/2008

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

CARD TYPE       CONTROL TITLES

TITLE01         LA-QUAL calibration for Lake Iatt and Bayou Rigolette
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   NO   SALI
MODOPT03   NO   CONS
MODOPT04   NO   CONS
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
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	L1	Lake Iatt	55.20	TO	50.80	0.4400	4.40	10	1	10
REACH ID	2	L2	Lake Iatt	50.80	TO	46.40	0.4400	4.40	10	11	20
REACH ID	3	L3	Lake Iatt	46.40	TO	42.10	0.4300	4.30	10	21	30
REACH ID	4	R1	Rigolette Bayou	42.10	TO	38.00	0.1000	4.10	41	31	71
REACH ID	5	S1	Sugarhouse Bayou	1.70	TO	0.00	0.1000	1.70	17	72	88
REACH ID	6	R2	Rigolette Bayou	38.00	TO	30.70	0.1000	7.30	73	89	161
REACH ID	7	R3	Rigolette Bayou	30.70	TO	25.60	0.1000	5.10	51	162	212
REACH ID	8	R4	Rigolette Bayou	25.60	TO	18.40	0.1000	7.20	72	213	284
REACH ID	9	R5	Rigolette Bayou	18.40	TO	7.90	0.1000	10.50	105	285	389
REACH ID	10	R6	Rigolette Bayou	7.90	TO	3.70	0.1000	4.20	42	390	431
REACH ID	11	R7	Rigolette Bayou	3.70	TO	0.00	0.1000	3.70	37	432	468

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	L1	0.000	0.000	1483.000	0.000	0.000	1.000	0.00000	0.000
HYDR-1	2	L2	0.000	0.000	2360.000	0.000	0.000	1.500	0.00000	0.000
HYDR-1	3	L3	0.000	0.000	2257.000	0.000	0.000	2.000	0.00000	0.000
HYDR-1	4	R1	0.000	0.000	16.000	0.000	0.000	0.240	0.00000	0.000
HYDR-1	5	S1	0.000	0.000	21.590	0.000	0.000	0.240	0.00000	0.000
HYDR-1	6	R2	0.000	0.000	29.400	0.000	0.000	0.240	0.00000	0.000
HYDR-1	7	R3	0.000	0.000	11.100	0.000	0.000	0.240	0.00000	0.000
HYDR-1	8	R4	0.000	0.000	23.200	0.000	0.000	0.580	0.00000	0.000
HYDR-1	9	R5	0.000	0.000	10.800	0.000	0.000	0.940	0.00000	0.000
HYDR-1	10	R6	0.000	0.000	47.700	0.000	0.000	1.280	0.00000	0.000
HYDR-1	11	R7	0.000	0.000	97.500	0.000	0.000	1.280	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"

ENDATA10

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

CARD TYPE	REACH	ID	TEMP	SALIN	DO	NH3	NO3+2	PHOS	CHL A	MACRO
INITIAL	1	L1	24.20	0.00	1.82	0.18	0.00	0.00	0.00	0.00
INITIAL	2	L2	24.20	0.00	1.82	0.18	0.00	0.00	0.00	0.00
INITIAL	3	L3	24.20	0.00	1.82	0.18	0.00	0.00	0.00	0.00
INITIAL	4	R1	24.20	0.00	5.47	0.19	0.00	0.00	0.00	0.00
INITIAL	5	S1	24.20	0.00	5.47	0.19	0.00	0.00	0.00	0.00
INITIAL	6	R2	24.20	0.00	5.47	0.19	0.00	0.00	0.00	0.00
INITIAL	7	R3	24.20	0.00	5.47	0.19	0.00	0.00	0.00	0.00
INITIAL	8	R4	25.30	0.00	5.01	0.17	0.00	0.00	0.00	0.00
INITIAL	9	R5	26.70	0.00	4.40	0.14	0.00	0.00	0.00	0.00
INITIAL	10	R6	27.40	0.00	4.10	0.12	0.00	0.00	0.00	0.00
INITIAL	11	R7	27.40	0.00	4.10	0.12	0.00	0.00	0.00	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	L1	20 K2=a/D	0.700	0.000	0.000	1.500	0.150	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	2	L2	20 K2=a/D	0.700	0.000	0.000	1.080	0.150	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	3	L3	20 K2=a/D	0.700	0.000	0.000	0.920	0.150	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	4	R1	15 LOUISIANA	0.000	0.000	0.000	2.080	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	5	S1	15 LOUISIANA	0.000	0.000	0.000	1.220	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	6	R2	15 LOUISIANA	0.000	0.000	0.000	1.220	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	7	R3	15 LOUISIANA	0.000	0.000	0.000	1.570	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	8	R4	15 LOUISIANA	0.000	0.000	0.000	0.960	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	9	R5	15 LOUISIANA	0.000	0.000	0.000	0.960	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	10	R6	15 LOUISIANA	0.000	0.000	0.000	0.720	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	11	R7	15 LOUISIANA	0.000	0.000	0.000	0.720	0.080	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	L1	0.020	0.000	1.000	0.060	0.000	0.000	0.000

```
COEFF-2          2   L2       0.020     0.000     1.000       0.060     0.000     0.000     0.000
COEFF-2          3   L3       0.020     0.000     1.000       0.060     0.000     0.000     0.000
COEFF-2          4   R1       0.020     0.000     1.000       0.070     0.000     0.000     0.000
COEFF-2          5   S1       0.020     0.000     1.000       0.070     0.000     0.000     0.000
COEFF-2          6   R2       0.020     0.000     1.000       0.070     0.000     0.000     0.000
COEFF-2          7   R3       0.020     0.000     1.000       0.070     0.000     0.000     0.000
COEFF-2          8   R4       0.020     0.000     1.000       0.070     0.000     0.000     0.000
COEFF-2          9   R5       0.020     0.000     1.000       0.070     0.000     0.000     0.000
COEFF-2         10   R6       0.020     0.000     1.000       0.070     0.000     0.000     0.000
COEFF-2         11   R7       0.020     0.000     1.000       0.070     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   L1     3266.00     68.20      0.00      0.00      0.00      0.00
NONPOINT         2   L2     5640.00    141.00      0.00      0.00      0.00      0.00
NONPOINT         3   L3     4230.00    159.80      0.00      0.00      0.00      0.00
```

```
NONPOINT          4   R1        3.20      0.32      0.00      0.00      0.00      0.00
NONPOINT          5   S1        3.20      0.32      0.00      0.00      0.00      0.00
NONPOINT          6   R2        1.28      0.32      0.00      0.00      0.00      0.00
NONPOINT          7   R3        1.28      0.32      0.00      0.00      0.00      0.00
NONPOINT          8   R4       32.00      1.28      0.00      0.00      0.00      0.00
NONPOINT          9   R5       64.00      1.92      0.00      0.00      0.00      0.00
NONPOINT         10   R6      141.00      3.97      0.00      0.00      0.00      0.00
NONPOINT         11   R7      250.00      6.08      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

HDWTR-1           1     Iatt Creek @ 101302-    0   0.01900    0.671   27.90     0.00     0.000     0.000   0.00
HDWTR-1          72     Sugarhouse Bayou        0   0.00300    0.106   27.90     0.00     0.000     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     Iatt Creek @ 101302-       5.28      8.56      1.23      0.19      0.05      5.00
HDWTR-2          72     Sugarhouse Bayou           5.26      0.40      0.44      0.08      0.03      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          89      71      38.00  Sugarhouse Bayou
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

WSTLD-1        9      51.68  NPS Dartigo Creek    0.00300   0.10593    0.068   27.90     0.00     0.000     0.000
WSTLD-1       13      49.92  NPS Black Creek      0.00300   0.10593    0.068   27.90     0.00     0.000     0.000
WSTLD-1       72       1.70  Colfax STP           0.01640   0.57910    0.374   27.90     0.00     0.000     0.000
```

WSTLD-1	183	28.60	NPS Gray Creek	0.00300	0.10593	0.068	27.90	0.00	0.000	0.000
WSTLD-1	267	20.20	NPS Bayou Marteau	0.00300	0.10593	0.068	27.90	0.00	0.000	0.000
WSTLD-1	359	11.00	NPS Hudson Creek	0.00300	0.10593	0.068	27.90	0.00	0.000	0.000
WSTLD-1	458	1.10	Tioga Manor Nursing	0.00090	0.03178	0.021	27.90	0.00	0.000	0.000
WSTLD-1	458	1.10	Bellsouth Tioga Main	0.00000	0.00007	0.000	27.90	0.00	0.000	0.000

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
WSTLD-2	9	NPS Dartigo Creek	6.88	0.94	0.00	0.24	0.05	0.00	0.10	0.00
WSTLD-2	13	NPS Black Creek	6.88	0.94	0.00	0.24	0.05	0.00	0.10	0.00
WSTLD-2	72	Colfax STP	5.00	23.00	0.00	3.30	1.70	0.00	0.30	0.00
WSTLD-2	183	NPS Gray Creek	6.94	1.28	0.00	0.19	0.13	0.00	0.00	0.00
WSTLD-2	267	NPS Bayou Marteau	6.94	1.28	0.00	0.19	0.13	0.00	0.00	0.00
WSTLD-2	359	NPS Hudson Creek	6.94	1.28	0.00	0.19	0.13	0.00	0.00	0.00
WSTLD-2	458	Tioga Manor Nursing	5.00	69.00	0.00	5.00	10.00	0.00	0.30	0.00
WSTLD-2	458	Bellsouth Tioga Main	5.00	104.00	0.00	5.00	10.00	0.00	0.30	0.00

ENDATA25

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

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

ENDATA26

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

CARD TYPE	CONSTITUENT	CONCENTRATION

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 = 1

```
NUMBER OF REACHES IN PLOT 1 =  10
PLOT RCH  1  2  3  4  6  7  8  9 10 11
ENDATA30

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


OVERLAY 1 rigolett.ovl                    :Iatt Lake & Bayou Rigolette
ENDATA31



     .....NO ERRORS DETECTED IN INPUT DATA
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN  31 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11


STREAM SUMMARY                                          LA-QUAL calibration for Lake Iatt and Bayou Rigolette
Iatt Creek @ 101302-                                    Summer Projection

 TRAVEL TIME       =       20487.11 DAYS

 MAXIMUM EFFLUENT  =          59.49 PERCENT

 FLOW              =   0.01900 TO    0.05430   m³/s
 DISPERSION        =   0.0000  TO    0.0000    m²/s
 VELOCITY          =   0.00001 TO    0.01779   m/s
 DEPTH             =   0.24    TO    2.00      m
 WIDTH             =  10.80    TO  ******      m

 BOD DECAY         =    0.10   TO    0.18      per day
 NH3 DECAY         =    0.07   TO    0.11      per day
 SOD               =    1.15   TO    2.71      g/m²/d
 NH3 SOURCE        =    0.00   TO    0.00      g/m²/d
 REAERATION        =    0.38   TO    4.23      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       =   24.20   TO   27.40      deg C
 DISSOLVED OXYGEN  =    5.03   TO    6.34      mg/L


STREAM SUMMARY                                          LA-QUAL calibration for Lake Iatt and Bayou Rigolette
Sugarhouse Bayou                                        Summer Projection

 TRAVEL TIME       =           5.26 DAYS
```

MAXIMUM EFFLUENT	=	84.54 PERCENT			
FLOW	=	0.01940	TO	0.01940	m^3/s
DISPERSION	=	0.0000	TO	0.0000	m^2/s
VELOCITY	=	0.00374	TO	0.00374	m/s
DEPTH	=	0.24	TO	0.24	m
WIDTH	=	21.59	TO	21.59	m
BOD DECAY	=	0.10	TO	0.10	per day
NH3 DECAY	=	0.09	TO	0.09	per day
SOD	=	1.59	TO	1.59	$g/m^2/d$
NH3 SOURCE	=	0.00	TO	0.00	$g/m^2/d$
REAERATION	=	3.24	TO	3.24	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	=	24.20	TO	24.20	deg C
DISSOLVED OXYGEN	=	5.32	TO	5.80	mg/L

LA-QUAL calibration for Lake Iatt and Bayou Rigolette
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	0.022	10.0	14.2	0.0	2.1	0.3	0.1	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	0.032	16.4	39.5	0.0	5.3	3.3	0.5	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	-0.054	-25.8	-22.9	0.0	-2.9	-0.7	-391.6	0.0	0.0	0.0
DISPERSION THRU LOWER BNDRY		0.0	0.0	0.0	0.0	0.0	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	13632.0	0.0	383.5					0.0
NATURAL REAERATION		56025.3								
DAM REAERATION		0.0								
BACKGROUND SOD		-40738.4								
BOD#1 DECAY		-13663.8	-13663.8							
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			-388.1	388.1				
ORG-N SETTLING					0.0	0.0				
NH3 DECAY		-1694.0				-391.2	391.2			
BACKGROUND NH3 SOURCE						0.0				
OTHER DENITRIFICATION							0.0			
PHOSPHORUS SOURCE								0.0		
ALGAE PHOTOSYNTHESIS		0.0				0.0	0.0	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	0.054	56051.8	13685.6	0.0	391.0	391.7	391.8	0.0	0.0	0.0
TOTAL OUTPUTS	-0.054	-56122.0	-13686.7	0.0	-391.0	-391.9	-391.6	0.0	0.0	0.0
NET CONVERGENCE ERROR	0.000	-70.2	-1.1	0.0	0.0	-0.2	0.2	0.0	0.0	0.0

.....EXECUTION COMPLETED

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

Input file is D:\laqual\Iatt Lake winter proj3.txt
Output produced at 13:27 on 03/12/2008

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

CARD TYPE       CONTROL TITLES

TITLE01         LA-QUAL Winter Projection for Lake Iatt and Bayou Rigolette
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   NO   SALI
MODOPT03   NO   CONS
MODOPT04   NO   CONS
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
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	L1	Lake Iatt	55.20	TO	50.80	0.4400	4.40	10	1	10
REACH ID	2	L2	Lake Iatt	50.80	TO	46.40	0.4400	4.40	10	11	20
REACH ID	3	L3	Lake Iatt	46.40	TO	42.10	0.4300	4.30	10	21	30
REACH ID	4	R1	Rigolette Bayou	42.10	TO	38.00	0.1000	4.10	41	31	71
REACH ID	5	S1	Sugarhouse Bayou	1.70	TO	0.00	0.1000	1.70	17	72	88
REACH ID	6	R2	Rigolette Bayou	38.00	TO	30.70	0.1000	7.30	73	89	161
REACH ID	7	R3	Rigolette Bayou	30.70	TO	25.60	0.1000	5.10	51	162	212
REACH ID	8	R4	Rigolette Bayou	25.60	TO	18.40	0.1000	7.20	72	213	284
REACH ID	9	R5	Rigolette Bayou	18.40	TO	7.90	0.1000	10.50	105	285	389
REACH ID	10	R6	Rigolette Bayou	7.90	TO	3.70	0.1000	4.20	42	390	431
REACH ID	11	R7	Rigolette Bayou	3.70	TO	0.00	0.1000	3.70	37	432	468

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	L1	0.000	0.000	1483.000	0.000	0.000	1.000	0.00000	0.000
HYDR-1	2	L2	0.000	0.000	2360.000	0.000	0.000	1.500	0.00000	0.000
HYDR-1	3	L3	0.000	0.000	2257.000	0.000	0.000	2.000	0.00000	0.000
HYDR-1	4	R1	0.000	0.000	16.000	0.000	0.000	0.240	0.00000	0.000
HYDR-1	5	S1	0.000	0.000	21.590	0.000	0.000	0.240	0.00000	0.000
HYDR-1	6	R2	0.000	0.000	29.400	0.000	0.000	0.240	0.00000	0.000
HYDR-1	7	R3	0.000	0.000	11.100	0.000	0.000	0.240	0.00000	0.000
HYDR-1	8	R4	0.000	0.000	23.200	0.000	0.000	0.580	0.00000	0.000
HYDR-1	9	R5	0.000	0.000	10.800	0.000	0.000	0.940	0.00000	0.000

```
HYDR-1      10   R6      0.000      0.000      47.700      0.000      0.000      1.280     0.00000   0.000
HYDR-1      11   R7      0.000      0.000      97.500      0.000      0.000      1.280     0.00000   0.000
ENDATA09

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

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

ENDATA10

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

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

INITIAL          1   L1       24.20      0.00      1.82      0.18      0.00      0.00      0.00      0.00
INITIAL          2   L2       24.20      0.00      1.82      0.18      0.00      0.00      0.00      0.00
INITIAL          3   L3       24.20      0.00      1.82      0.18      0.00      0.00      0.00      0.00
INITIAL          4   R1       24.20      0.00      5.47      0.19      0.00      0.00      0.00      0.00
INITIAL          5   S1       24.20      0.00      5.47      0.19      0.00      0.00      0.00      0.00
INITIAL          6   R2       24.20      0.00      5.47      0.19      0.00      0.00      0.00      0.00
INITIAL          7   R3       24.20      0.00      5.47      0.19      0.00      0.00      0.00      0.00
INITIAL          8   R4       25.30      0.00      5.01      0.17      0.00      0.00      0.00      0.00
INITIAL          9   R5       26.70      0.00      4.40      0.14      0.00      0.00      0.00      0.00
INITIAL         10   R6       27.40      0.00      4.10      0.12      0.00      0.00      0.00      0.00
INITIAL         11   R7       27.40      0.00      4.10      0.12      0.00      0.00      0.00      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   L1  20 K2=a/D           0.700     0.000     0.000    1.500    0.150    0.000    0.000    0.000    0.000     0.000    0.000    0.000
COEFF-1    2   L2  20 K2=a/D           0.700     0.000     0.000    1.080    0.150    0.000    0.000    0.000    0.000     0.000    0.000    0.000
COEFF-1    3   L3  20 K2=a/D           0.700     0.000     0.000    0.920    0.150    0.000    0.000    0.000    0.000     0.000    0.000    0.000
COEFF-1    4   R1  15 LOUISIANA        0.000     0.000     0.000    2.470    0.080    0.000    0.000    0.000    0.000     0.000    0.000    0.000
COEFF-1    5   S1  15 LOUISIANA        0.000     0.000     0.000    1.440    0.080    0.000    0.000    0.000    0.000     0.000    0.000    0.000
COEFF-1    6   R2  15 LOUISIANA        0.000     0.000     0.000    1.440    0.080    0.000    0.000    0.000    0.000     0.000    0.000    0.000
COEFF-1    7   R3  15 LOUISIANA        0.000     0.000     0.000    1.860    0.080    0.000    0.000    0.000    0.000     0.000    0.000    0.000
COEFF-1    8   R4  15 LOUISIANA        0.000     0.000     0.000    1.140    0.080    0.000    0.000    0.000    0.000     0.000    0.000    0.000
COEFF-1    9   R5  15 LOUISIANA        0.000     0.000     0.000    1.140    0.080    0.000    0.000    0.000    0.000     0.000    0.000    0.000
COEFF-1   10   R6  15 LOUISIANA        0.000     0.000     0.000    0.850    0.080    0.000    0.000    0.000    0.000     0.000    0.000    0.000
COEFF-1   11   R7  15 LOUISIANA        0.000     0.000     0.000    0.850    0.080    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   L1       0.020     0.000     1.000       0.060     0.000     0.000     0.000
COEFF-2          2   L2       0.020     0.000     1.000       0.060     0.000     0.000     0.000
COEFF-2          3   L3       0.020     0.000     1.000       0.060     0.000     0.000     0.000
COEFF-2          4   R1       0.020     0.000     1.000       0.070     0.000     0.000     0.000
COEFF-2          5   S1       0.020     0.000     1.000       0.070     0.000     0.000     0.000
COEFF-2          6   R2       0.020     0.000     1.000       0.070     0.000     0.000     0.000
COEFF-2          7   R3       0.020     0.000     1.000       0.070     0.000     0.000     0.000
COEFF-2          8   R4       0.020     0.000     1.000       0.070     0.000     0.000     0.000
COEFF-2          9   R5       0.020     0.000     1.000       0.070     0.000     0.000     0.000
COEFF-2         10   R6       0.020     0.000     1.000       0.070     0.000     0.000     0.000
COEFF-2         11   R7       0.020     0.000     1.000       0.070     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   L1     3267.00     68.20      0.00      0.00      0.00      0.00
NONPOINT          2   L2     5640.00    141.00      0.00      0.00      0.00      0.00
NONPOINT          3   L3     4230.00    160.00      0.00      0.00      0.00      0.00
NONPOINT          4   R1        3.80      0.38      0.00      0.00      0.00      0.00
NONPOINT          5   S1        3.80      0.38      0.00      0.00      0.00      0.00
NONPOINT          6   R2        1.52      0.38      0.00      0.00      0.00      0.00
NONPOINT          7   R3        1.52      0.38      0.00      0.00      0.00      0.00
NONPOINT          8   R4       38.00      1.52      0.00      0.00      0.00      0.00
NONPOINT          9   R5       76.00      2.28      0.00      0.00      0.00      0.00
NONPOINT         10   R6      167.00      4.71      0.00      0.00      0.00      0.00
NONPOINT         11   R7      296.00      7.22      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

HDWTR-1           1     Iatt Creek @ 101302-    0   0.03300    1.165   19.90     0.00     0.000     0.000   0.00
HDWTR-1          72     Sugarhouse Bayou        0   0.03000    1.059   19.90     0.00     0.000     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     Iatt Creek @ 101302-       7.48     10.39      1.69      0.09      0.05     45.00
HDWTR-2          72     Sugarhouse Bayou           3.69      0.76      0.84      0.14      0.02      5.00
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          89      71      38.00  Sugarhouse Bayou
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		
WSTLD-1	9	51.68	NPS Dartigo Creek	0.03000	1.05932	0.685	19.90	0.00	0.000	0.000
WSTLD-1	13	49.92	NPS Black Creek	0.03000	1.05932	0.685	19.90	0.00	0.000	0.000
WSTLD-1	72	1.70	Colfax STP	0.01640	0.57910	0.374	19.90	0.00	0.000	0.000
WSTLD-1	183	28.60	NPS Gray Creek	0.03000	1.05932	0.685	19.90	0.00	0.000	0.000
WSTLD-1	267	20.20	NPS Bayou Marteau	0.03000	1.05932	0.685	19.90	0.00	0.000	0.000
WSTLD-1	359	11.00	NPS Hudson Creek	0.03000	1.05932	0.685	19.90	0.00	0.000	0.000
WSTLD-1	458	1.10	Tioga Manor Nursing	0.00090	0.03178	0.021	19.90	0.00	0.000	0.000
WSTLD-1	458	1.10	Bellsouth Tioga Main	0.00000	0.00007	0.000	19.90	0.00	0.000	0.000

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
WSTLD-2	9	NPS Dartigo Creek	8.76	0.94	0.00	0.24	0.05	0.00	0.10	0.00
WSTLD-2	13	NPS Black Creek	8.76	0.94	0.00	0.24	0.05	0.00	0.10	0.00
WSTLD-2	72	Colfax STP	5.00	34.50	0.00	3.30	1.70	0.00	0.30	0.00
WSTLD-2	183	NPS Gray Creek	8.09	1.52	0.00	0.23	0.15	0.00	0.00	0.00
WSTLD-2	267	NPS Bayou Marteau	8.09	1.52	0.00	0.23	0.15	0.00	0.00	0.00
WSTLD-2	359	NPS Hudson Creek	8.09	1.52	0.00	0.23	0.15	0.00	0.00	0.00
WSTLD-2	458	Tioga Manor Nursing	5.00	104.00	0.00	5.00	10.00	0.00	0.30	0.00
WSTLD-2	458	Bellsouth Tioga Main	5.00	104.00	0.00	5.00	10.00	0.00	0.30	0.00

ENDATA25

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

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

ENDATA26

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

CARD TYPE	CONSTITUENT	CONCENTRATION

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 =  1
NUMBER OF REACHES IN PLOT 1 =  10
PLOT RCH  1  2  3  4  6  7  8  9 10 11
ENDATA30

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


OVERLAY 1 IATTLAKE.ovl                    :Iatt Lake & Rigolette
ENDATA31



     .....NO ERRORS DETECTED IN INPUT DATA
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN  31 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11


STREAM SUMMARY                                          LA-QUAL Winter Projection for Lake Iatt and Bayou Rigolette
Iatt Creek @ 101302-                                    Winter Projection

 TRAVEL TIME       =        6665.13 DAYS

 MAXIMUM EFFLUENT  =          72.64 PERCENT

 FLOW              =   0.03300 TO    0.23030   m³/s
 DISPERSION        =   0.0000  TO    0.0000    m²/s
 VELOCITY          =   0.00002 TO    0.06359   m/s
 DEPTH             =   0.24    TO    2.00      m
 WIDTH             =  10.80    TO  ******      m

 BOD DECAY         =    0.10   TO    0.18      per day
 NH3 DECAY         =    0.07   TO    0.11      per day
 SOD               =    1.20   TO    3.22      g/m²/d
 NH3 SOURCE        =    0.00   TO    0.00      g/m²/d
 REAERATION        =    0.38   TO    7.25      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       =   24.20   TO   27.40      deg C
 DISSOLVED OXYGEN  =    5.04   TO    6.90      mg/L
```

STREAM SUMMARY
Sugarhouse Bayou

LA-QUAL Winter Projection for Lake Iatt and Bayou Rigolette
Winter Projection

TRAVEL TIME	=	2.20	DAYS		
MAXIMUM EFFLUENT	=	35.34	PERCENT		
FLOW	=	0.04640	TO	0.04640	m^3/s
DISPERSION	=	0.0000	TO	0.0000	m^2/s
VELOCITY	=	0.00895	TO	0.00895	m/s
DEPTH	=	0.24	TO	0.24	m
WIDTH	=	21.59	TO	21.59	m
BOD DECAY	=	0.10	TO	0.10	per day
NH3 DECAY	=	0.08	TO	0.09	per day
SOD	=	1.88	TO	1.88	$g/m^2/d$
NH3 SOURCE	=	0.00	TO	0.00	$g/m^2/d$
REAERATION	=	3.58	TO	3.58	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	=	24.20	TO	24.20	deg C
DISSOLVED OXYGEN	=	4.67	TO	5.82	mg/L

LA-QUAL Winter Projection for Lake Iatt and Bayou Rigolette
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	0.063	30.9	31.6	0.0	7.0	0.6	0.2	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	0.167	115.8	73.7	0.0	8.1	4.6	1.0	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	-0.230	-100.5	-116.7	0.0	-13.6	-3.3	-391.0	0.0	0.0	0.0
DISPERSION THRU LOWER BNDRY		0.0	0.0	0.0	0.0	0.0	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	13724.6	0.0	386.5					0.0
NATURAL REAERATION		56344.5								
DAM REAERATION		0.0								
BACKGROUND SOD		-41058.0								
BOD#1 DECAY		-13714.3	-13714.3							
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			-387.9	387.9				
ORG-N SETTLING					0.0	0.0				
NH3 DECAY		-1688.7				-390.0	390.0			
BACKGROUND NH3 SOURCE						0.0				
OTHER DENITRIFICATION							0.0			
PHOSPHORUS SOURCE								0.0		
ALGAE PHOTOSYNTHESIS		0.0				0.0	0.0	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	0.230	56491.2	13829.9	0.0	401.5	393.2	391.2	0.0	0.0	0.0
TOTAL OUTPUTS	-0.230	-56561.6	-13831.1	0.0	-401.5	-393.3	-391.0	0.0	0.0	0.0
NET CONVERGENCE ERROR	0.000	-70.4	-1.2	0.0	0.0	-0.2	0.2	0.0	0.0	0.0

```
.....EXECUTION COMPLETED
```

APPENDIX O

Input and Output for TMDL Calculation Program

Iatt Lake Summer TMDL Input

101302	Subsegment number for this TMDL
"Iatt Lake"	Subsegment name (max 50 chars)
"iattsum.out"	Name of LA-QUAL output file
3	Total number of reaches in the model
101302	Subsegment that reach 1 is in
101302	Subsegment that reach 2 is in
101302	Subsegment that reach 3 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: 101302 Iatt Lake
FTN ASSOCIATES, LTD.
Program:Pr20m6f

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

INFO FOR LA-QUAL OUTPUT FILE:
File name:iattsum.out
Date/Time:Output produced at 13:45 on 09/28/2007
LA-QUAL Version 8.11

LIST OF ALL REACHES IN LA-QUAL OUTPUT FILE:
Reach 1 (Elements 1 - 10) is in subsegment 101302 Lake Iatt
Reach 2 (Elements 11 - 20) is in subsegment 101302 Lake Iatt
Reach 3 (Elements 21 - 30) is in subsegment 101302 Lake Iatt

==========

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	0.01900	8.56	1.23	0.19	0.05	Iatt Creek @ 101302-
9	0.00300	0.94	0.24	0.05	0.10	NPS Dartigo Creek
13	0.00300	0.94	0.24	0.05	0.10	NPS Black Creek

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	14.05	2.02	0.31	0.08
9	0.24	0.06	0.01	0.03

	13	0.24	0.06	0.01	0.03
Subsegment totals:		0.48	2.14	0.33	0.14

==========

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	3267.00	68.20
2	5640.00	141.00
3	4230.00	160.00
Subsegment totals	13137.00	369.20

==========

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	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	2	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	3	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	4	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	5	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	6	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00

1	7	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	8	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	9	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	10	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
2	11	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	12	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	13	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	14	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	15	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	16	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	17	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	18	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	19	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	20	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
3	21	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	22	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	23	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	24	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	25	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	26	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	27	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	28	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	29	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	30	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
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				Subsegment totals:			39011.71	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.

==========

SUMMARY OF NONPOINT SOURCE OXYGEN DEMAND FOR THIS SUBSEGMENT:

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

	SOD (kg/day)	CBODu (kg/day)	Nitrogen loads (kg/day of N): Organic (kg/day)	Ammonia (kg/day)	NO2+NO3 N (kg/day)
NPS inflows	N/A	0.48	2.14	0.33	0.14
Mass LOads (data type 19)	N/A	13137.00	369.20	N/A	N/A
SOD and Benthic	39011.71	N/A	N/A	0.00	N/A

Calculated loads of oxygen demand:

	SOD (kg/day)	CBODu (kg/day)	Oygen demand loads: Organic (kg/day)	Ammonia (kg/day)	Total Oxygen demand (kg/day)
NPS inflows	N/A	0.48	9.27	1.43	11.18
Mass LOads (data type 19)	N/A	13137.00	1598.64	N/A	14735.64
SOD and Benthic	39011.71	N/A	N/A	0.00	39011.71
Total for all NPS loads	39011.71	13137.48	1607.90	1.43	53758.53
NPS future growth (10.0%)	3901.17	1313.75	160.79	0.14	5375.85
NPS margin of safety (10.0%)	3901.17	1313.75	160.79	0.14	5375.85
NPS load allocation (80.0%)	31209.37	10509.98	1286.32	1.15	43006.83

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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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NUTRIENT TMDL CALCULATIONS:

Assumptions: Naturally occurring ratio of total N to total P = 1.00000

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	371.34	0.33	0.14	371.81	371.81
NPS margin of safety (10.0%)	37.13	0.03	0.01	37.18	37.18
NPS Future Growth (10.0%)	37.13	0.03	0.01	37.18	37.18
NPS load allocation (80.0%)	297.07	0.30	0.13	334.63	334.63

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	0.00	0.00	0.00
MOS for all point Sources (10.0%)	0.00	0.00	0.00	0.00	0.00
FG for all point Sources (10.0%)	0.00	0.00	0.00	0.00	0.00
WLA for minor point sources (80.0%)	0.00	0.00	0.00	0.00	0.00

```
101301                  Subsegment number for this TMDL
"Bayou Rigolette"             Subsegment name (max 50 chars)
"rig_sum3.out"           Name of LA-QUAL output file
8                       Total number of reaches in the model
101301                  Subsegment that reach 1 is in
101301                  Subsegment that reach 2 is in
101301                  Subsegment that reach 3 is in
101301                  Subsegment that reach 4 is in
101301                  Subsegment that reach 5 is in
101301                  Subsegment that reach 6 is in
101301                  Subsegment that reach 7 is in
101301                  Subsegment that reach 8 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
2                       Number of minor point sources
                    MINOR POINT SOURCE DISCHARGE #1:
"LAG560232"                NPDES permit number (9 chars)
"001"                      Outfall number (3 chars)
0.0290                     Flow (MGD)
"Aurora Park Subdivision" Comment for flow (max 40 chars)
20                         CBOD5 or BOD5 permit limit
0                          COD permit limit
10                         Ammonia N permit limit
""                         Comment for conc. limits (max 40 chars)
                        MINOR POINT SOURCE DISCHARGE #2:
"LAG530785"                NPDES permit number (9 chars)
"001"                      Outfall number (3 chars)
0.00002                    Flow (MGD)
"Hyams Trailer Park"       Comment for flow (max 40 chars)
45                          CBOD5 or BOD5 permit limit
0                         COD permit limit
10                         Ammonia N permit limit
""                   Comment for conc. limits (max 40 chars)
No                      Nutrient TMDL needed?
1.0                     Natural ratio of total N to total P
```

TMDL CALCULATIONS FOR SUBSEGMENT: 101301 Bayou Rigolette
FTN ASSOCIATES, LTD.
Program:Pr20m6f

INFO FOR INPUT FILE WITH USER SPECIFIED DATA AND OPTIONS:
File name:tmdlrigs3.inp

INFO FOR LA-QUAL OUTPUT FILE:
File name:rig_sum3.out
Date/Time:Output produced at 16:11 on 02/27/2008
LA-QUAL Version 8.11

LIST OF ALL REACHES IN LA-QUAL OUTPUT FILE:
Reach 1 (Elements 1 - 41) is in subsegment 101301 Rigolette Bayou
Reach 2 (Elements 42 - 58) is in subsegment 101301 Sugarhouse Bayo
Reach 3 (Elements 59 - 131) is in subsegment 101301 Rigolette Bayou
Reach 4 (Elements 132 - 182) is in subsegment 101301 Rigolette Bayou
Reach 5 (Elements 183 - 254) is in subsegment 101301 Rigolette Bayou
Reach 6 (Elements 255 - 359) is in subsegment 101301 Rigolette Bayou
Reach 7 (Elements 360 - 401) is in subsegment 101301 Rigolette Bayou
Reach 8 (Elements 402 - 438) is in subsegment 101301 Rigolette 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	0.02500	1.20	0.38	0.11	171.65	Iatt Lake Dam
42	0.00300	0.64	0.71	0.12	0.03	Sugarhouse Bayou
153	0.00300	1.28	0.19	0.13	0.00	NPS Gray Creek
237	0.00300	1.28	0.19	0.13	0.00	NPS Bayou Marteau
329	0.00300	1.28	0.19	0.13	0.00	NPS Hudson Creek

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	2.59	0.82	0.24	370.76

42	0.17	0.18	0.03	0.01
153	0.33	0.05	0.03	0.00
237	0.33	0.05	0.03	0.00
329	0.33	0.05	0.03	0.00
Subsegment totals:	1.38	1.15	0.36	-NaN

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	3.20	0.32
2	3.20	0.32
3	1.28	0.32
4	1.28	0.32
5	32.00	1.28
6	64.00	1.92
7	141.00	3.97
8	250.00	6.08
Subsegment totals	495.96	14.53

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	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	2	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	3	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	4	24.20	1600.0	2.710	0.00	2.710	4.34	0.00

1	5	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	6	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	7	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	8	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	9	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	10	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	11	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	12	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	13	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	14	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	15	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	16	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	17	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	18	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	19	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	20	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	21	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	22	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	23	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	24	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	25	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	26	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	27	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	28	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	29	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	30	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	31	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	32	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	33	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	34	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	35	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	36	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	37	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	38	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	39	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	40	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
1	41	24.20	1600.0	2.710	0.00	2.710	4.34	0.00
2	42	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	43	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	44	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	45	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	46	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	47	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	48	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	49	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	50	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	51	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	52	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	53	24.20	2159.0	2.710	0.00	1.590	3.43	0.00

2	54	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	55	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	56	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	57	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
2	58	24.20	2159.0	2.710	0.00	1.590	3.43	0.00
3	59	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	60	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	61	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	62	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	63	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	64	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	65	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	66	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	67	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	68	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	69	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	70	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	71	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	72	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	73	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	74	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	75	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	76	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	77	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	78	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	79	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	80	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	81	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	82	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	83	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	84	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	85	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	86	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	87	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	88	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	89	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	90	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	91	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	92	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	93	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	94	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	95	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	96	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	97	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	98	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	99	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	100	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	101	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	102	24.20	2940.0	2.710	0.00	1.590	4.67	0.00

3	103	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	104	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	105	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	106	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	107	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	108	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	109	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	110	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	111	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	112	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	113	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	114	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	115	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	116	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	117	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	118	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	119	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	120	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	121	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	122	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	123	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	124	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	125	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	126	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	127	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	128	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	129	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	130	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
3	131	24.20	2940.0	2.710	0.00	1.590	4.67	0.00
4	132	24.20	1110.0	2.710	0.00	2.050	2.28	0.00
4	133	24.20	1110.0	2.710	0.00	2.050	2.28	0.00
4	134	24.20	1110.0	2.710	0.00	2.050	2.28	0.00
4	135	24.20	1110.0	2.710	0.00	2.060	2.29	0.00
4	136	24.20	1110.0	2.710	0.00	2.060	2.29	0.00
4	137	24.20	1110.0	2.710	0.00	2.060	2.29	0.00
4	138	24.20	1110.0	2.710	0.00	2.060	2.29	0.00
4	139	24.20	1110.0	2.710	0.00	2.070	2.30	0.00
4	140	24.20	1110.0	2.710	0.00	2.070	2.30	0.00
4	141	24.20	1110.0	2.710	0.00	2.070	2.30	0.00
4	142	24.20	1110.0	2.710	0.00	2.080	2.31	0.00
4	143	24.20	1110.0	2.710	0.00	2.080	2.31	0.00
4	144	24.20	1110.0	2.710	0.00	2.080	2.31	0.00
4	145	24.20	1110.0	2.710	0.00	2.080	2.31	0.00
4	146	24.20	1110.0	2.710	0.00	2.090	2.32	0.00
4	147	24.20	1110.0	2.710	0.00	2.090	2.32	0.00
4	148	24.20	1110.0	2.710	0.00	2.090	2.32	0.00
4	149	24.20	1110.0	2.710	0.00	2.100	2.33	0.00
4	150	24.20	1110.0	2.710	0.00	2.100	2.33	0.00
4	151	24.20	1110.0	2.710	0.00	2.100	2.33	0.00

4	152	24.20	1110.0	2.710	0.00	2.100	2.33	0.00
4	153	24.20	1110.0	2.710	0.00	2.110	2.34	0.00
4	154	24.20	1110.0	2.710	0.00	2.110	2.34	0.00
4	155	24.20	1110.0	2.710	0.00	2.110	2.34	0.00
4	156	24.20	1110.0	2.710	0.00	2.120	2.35	0.00
4	157	24.20	1110.0	2.710	0.00	2.120	2.35	0.00
4	158	24.20	1110.0	2.710	0.00	2.120	2.35	0.00
4	159	24.20	1110.0	2.710	0.00	2.120	2.35	0.00
4	160	24.20	1110.0	2.710	0.00	2.130	2.36	0.00
4	161	24.20	1110.0	2.710	0.00	2.130	2.36	0.00
4	162	24.20	1110.0	2.710	0.00	2.130	2.36	0.00
4	163	24.20	1110.0	2.710	0.00	2.140	2.38	0.00
4	164	24.20	1110.0	2.710	0.00	2.140	2.38	0.00
4	165	24.20	1110.0	2.710	0.00	2.140	2.38	0.00
4	166	24.20	1110.0	2.710	0.00	2.140	2.38	0.00
4	167	24.20	1110.0	2.710	0.00	2.150	2.39	0.00
4	168	24.20	1110.0	2.710	0.00	2.150	2.39	0.00
4	169	24.20	1110.0	2.710	0.00	2.150	2.39	0.00
4	170	24.20	1110.0	2.710	0.00	2.160	2.40	0.00
4	171	24.20	1110.0	2.710	0.00	2.160	2.40	0.00
4	172	24.20	1110.0	2.710	0.00	2.160	2.40	0.00
4	173	24.20	1110.0	2.710	0.00	2.170	2.41	0.00
4	174	24.20	1110.0	2.710	0.00	2.170	2.41	0.00
4	175	24.20	1110.0	2.710	0.00	2.170	2.41	0.00
4	176	24.20	1110.0	2.710	0.00	2.170	2.41	0.00
4	177	24.20	1110.0	2.710	0.00	2.180	2.42	0.00
4	178	24.20	1110.0	2.710	0.00	2.180	2.42	0.00
4	179	24.20	1110.0	2.710	0.00	2.180	2.42	0.00
4	180	24.20	1110.0	2.710	0.00	2.190	2.43	0.00
4	181	24.20	1110.0	2.710	0.00	2.190	2.43	0.00
4	182	24.20	1110.0	2.710	0.00	2.190	2.43	0.00
5	183	25.30	2320.0	2.710	0.00	1.340	3.11	0.00
5	184	25.30	2320.0	2.710	0.00	1.340	3.11	0.00
5	185	25.30	2320.0	2.710	0.00	1.350	3.13	0.00
5	186	25.30	2320.0	2.710	0.00	1.350	3.13	0.00
5	187	25.30	2320.0	2.710	0.00	1.350	3.13	0.00
5	188	25.30	2320.0	2.710	0.00	1.350	3.13	0.00
5	189	25.30	2320.0	2.710	0.00	1.350	3.13	0.00
5	190	25.30	2320.0	2.710	0.00	1.350	3.13	0.00
5	191	25.30	2320.0	2.710	0.00	1.360	3.16	0.00
5	192	25.30	2320.0	2.710	0.00	1.360	3.16	0.00
5	193	25.30	2320.0	2.710	0.00	1.360	3.16	0.00
5	194	25.30	2320.0	2.710	0.00	1.360	3.16	0.00
5	195	25.30	2320.0	2.710	0.00	1.360	3.16	0.00
5	196	25.30	2320.0	2.710	0.00	1.360	3.16	0.00
5	197	25.30	2320.0	2.710	0.00	1.370	3.18	0.00
5	198	25.30	2320.0	2.710	0.00	1.370	3.18	0.00
5	199	25.30	2320.0	2.710	0.00	1.370	3.18	0.00
5	200	25.30	2320.0	2.710	0.00	1.370	3.18	0.00

5	201	25.30	2320.0	2.710	0.00	1.370	3.18	0.00
5	202	25.30	2320.0	2.710	0.00	1.370	3.18	0.00
5	203	25.30	2320.0	2.710	0.00	1.380	3.20	0.00
5	204	25.30	2320.0	2.710	0.00	1.380	3.20	0.00
5	205	25.30	2320.0	2.710	0.00	1.380	3.20	0.00
5	206	25.30	2320.0	2.710	0.00	1.380	3.20	0.00
5	207	25.30	2320.0	2.710	0.00	1.380	3.20	0.00
5	208	25.30	2320.0	2.710	0.00	1.380	3.20	0.00
5	209	25.30	2320.0	2.710	0.00	1.390	3.22	0.00
5	210	25.30	2320.0	2.710	0.00	1.390	3.22	0.00
5	211	25.30	2320.0	2.710	0.00	1.390	3.22	0.00
5	212	25.30	2320.0	2.710	0.00	1.390	3.22	0.00
5	213	25.30	2320.0	2.710	0.00	1.390	3.22	0.00
5	214	25.30	2320.0	2.710	0.00	1.390	3.22	0.00
5	215	25.30	2320.0	2.710	0.00	1.400	3.25	0.00
5	216	25.30	2320.0	2.710	0.00	1.400	3.25	0.00
5	217	25.30	2320.0	2.710	0.00	1.400	3.25	0.00
5	218	25.30	2320.0	2.710	0.00	1.400	3.25	0.00
5	219	25.30	2320.0	2.710	0.00	1.400	3.25	0.00
5	220	25.30	2320.0	2.710	0.00	1.400	3.25	0.00
5	221	25.30	2320.0	2.710	0.00	1.410	3.27	0.00
5	222	25.30	2320.0	2.710	0.00	1.410	3.27	0.00
5	223	25.30	2320.0	2.710	0.00	1.410	3.27	0.00
5	224	25.30	2320.0	2.710	0.00	1.410	3.27	0.00
5	225	25.30	2320.0	2.710	0.00	1.410	3.27	0.00
5	226	25.30	2320.0	2.710	0.00	1.410	3.27	0.00
5	227	25.30	2320.0	2.710	0.00	1.420	3.29	0.00
5	228	25.30	2320.0	2.710	0.00	1.420	3.29	0.00
5	229	25.30	2320.0	2.710	0.00	1.420	3.29	0.00
5	230	25.30	2320.0	2.710	0.00	1.420	3.29	0.00
5	231	25.30	2320.0	2.710	0.00	1.420	3.29	0.00
5	232	25.30	2320.0	2.710	0.00	1.420	3.29	0.00
5	233	25.30	2320.0	2.710	0.00	1.430	3.32	0.00
5	234	25.30	2320.0	2.710	0.00	1.430	3.32	0.00
5	235	25.30	2320.0	2.710	0.00	1.430	3.32	0.00
5	236	25.30	2320.0	2.710	0.00	1.430	3.32	0.00
5	237	25.30	2320.0	2.710	0.00	1.430	3.32	0.00
5	238	25.30	2320.0	2.710	0.00	1.440	3.34	0.00
5	239	25.30	2320.0	2.710	0.00	1.440	3.34	0.00
5	240	25.30	2320.0	2.710	0.00	1.440	3.34	0.00
5	241	25.30	2320.0	2.710	0.00	1.440	3.34	0.00
5	242	25.30	2320.0	2.710	0.00	1.440	3.34	0.00
5	243	25.30	2320.0	2.710	0.00	1.440	3.34	0.00
5	244	25.30	2320.0	2.710	0.00	1.450	3.36	0.00
5	245	25.30	2320.0	2.710	0.00	1.450	3.36	0.00
5	246	25.30	2320.0	2.710	0.00	1.450	3.36	0.00
5	247	25.30	2320.0	2.710	0.00	1.450	3.36	0.00
5	248	25.30	2320.0	2.710	0.00	1.450	3.36	0.00
5	249	25.30	2320.0	2.710	0.00	1.450	3.36	0.00

5	250	25.30	2320.0	2.710	0.00	1.460	3.39	0.00
5	251	25.30	2320.0	2.710	0.00	1.460	3.39	0.00
5	252	25.30	2320.0	2.710	0.00	1.460	3.39	0.00
5	253	25.30	2320.0	2.710	0.00	1.460	3.39	0.00
5	254	25.30	2320.0	2.710	0.00	1.460	3.39	0.00
6	255	26.70	1080.0	2.710	0.00	1.460	1.58	0.00
6	256	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	257	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	258	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	259	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	260	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	261	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	262	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	263	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	264	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	265	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	266	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	267	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	268	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	269	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	270	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	271	26.70	1080.0	2.710	0.00	1.470	1.59	0.00
6	272	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	273	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	274	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	275	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	276	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	277	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	278	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	279	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	280	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	281	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	282	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	283	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	284	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	285	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	286	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	287	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	288	26.70	1080.0	2.710	0.00	1.480	1.60	0.00
6	289	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	290	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	291	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	292	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	293	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	294	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	295	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	296	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	297	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	298	26.70	1080.0	2.710	0.00	1.490	1.61	0.00

6	299	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	300	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	301	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	302	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	303	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	304	26.70	1080.0	2.710	0.00	1.490	1.61	0.00
6	305	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	306	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	307	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	308	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	309	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	310	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	311	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	312	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	313	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	314	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	315	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	316	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	317	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	318	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	319	26.70	1080.0	2.710	0.00	1.500	1.62	0.00
6	320	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	321	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	322	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	323	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	324	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	325	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	326	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	327	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	328	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	329	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	330	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	331	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	332	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	333	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	334	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	335	26.70	1080.0	2.710	0.00	1.510	1.63	0.00
6	336	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	337	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	338	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	339	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	340	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	341	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	342	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	343	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	344	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	345	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	346	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	347	26.70	1080.0	2.710	0.00	1.520	1.64	0.00

6	348	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	349	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	350	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	351	26.70	1080.0	2.710	0.00	1.520	1.64	0.00
6	352	26.70	1080.0	2.710	0.00	1.530	1.65	0.00
6	353	26.70	1080.0	2.710	0.00	1.530	1.65	0.00
6	354	26.70	1080.0	2.710	0.00	1.530	1.65	0.00
6	355	26.70	1080.0	2.710	0.00	1.530	1.65	0.00
6	356	26.70	1080.0	2.710	0.00	1.530	1.65	0.00
6	357	26.70	1080.0	2.710	0.00	1.530	1.65	0.00
6	358	26.70	1080.0	2.710	0.00	1.530	1.65	0.00
6	359	26.70	1080.0	2.710	0.00	1.530	1.65	0.00
7	360	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	361	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	362	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	363	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	364	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	365	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	366	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	367	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	368	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	369	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	370	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	371	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	372	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	373	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	374	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	375	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	376	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	377	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	378	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	379	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	380	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	381	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	382	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	383	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	384	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	385	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	386	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	387	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	388	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	389	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	390	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	391	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	392	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	393	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	394	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	395	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	396	27.40	4770.0	2.710	0.00	1.150	5.49	0.00

7	397	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	398	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	399	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	400	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
7	401	27.40	4770.0	2.710	0.00	1.150	5.49	0.00
8	402	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	403	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	404	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	405	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	406	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	407	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	408	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	409	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	410	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	411	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	412	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	413	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	414	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	415	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	416	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	417	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	418	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	419	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	420	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	421	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	422	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	423	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	424	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	425	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	426	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	427	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	428	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	429	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	430	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	431	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	432	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	433	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	434	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	435	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	436	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	437	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
8	438	27.40	9750.0	2.710	0.00	1.150	11.21	0.00
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				Subsegment totals:			1746.57	0.00

CALCULATIONS FOR LOADS FROM POINT SOURCE DISCHARGES EXPLICITLY MODELED:

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:

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 discharge
42	0.01640	23.000	3.300	1.700	0.300	Colfax STP
428	0.00090	69.000	5.000	10.000	0.300	Tioga Manor Nursin
428	0.00000	104.000	5.000	10.000	0.300	Bellsouth Tioga Ma

Calculated values:

Element number	CBODu load (kg/day)	Organic N load (kg/day)	Ammonia N load (kg/day)	NO2+NO3 N load (kg/day)
42	32.59	4.68	2.41	0.43
428	5.37	0.39	0.78	0.02
428	0.00	0.00	0.00	0.00
Subsegment total	37.96	5.06	3.19	-NaN

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CALCULATIONS FOR LOADS FROM POINT SOURCE DISCHARGES NOT EXPLICITLY MODELED:

Equations used: Flow rate from TMDL calcs = Permit flow rate * 1.250 (to incorporate MOS and FG)
(Load, kg/day) = (Flow rate, MGD) * (Conc., mg/L) * 3.785 L/gal * 1.0E6 gal/MG * 1.0E-6 kg/mg

Assumptions: Ratio of CBODu to CBOD5 for point source dissharges = 2.3 (guidance from LTP).
For permits with BOD or ammonia limits, NO2+NO3 = 10 mg/L (drinking water criteria).
For permits with COD limits, assume that CBODu is about the same magnitude as COD and that discharges of nitrogen (organic, ammonia, and NO2+NO3) are negligible.

NPDES permit number	Outfall number	Permit flow rate (MGD)	Factor to incorporate MOS and FG into flow	Flow rate for TMDL calcs (MGD	Comments

LAG560232	001	0.029	1.250	0.036	Aurora Park Subdivision
LAG530785	001	0.000	1.250	0.000	Hyams Trailer Park

User specified permit limits:

NPDES permit number	Outfall number	CBOD5 (mg/L)	COD (mg/L)	Ammonia (mg/L)	Comments
LAG560232	001	20.0	0.0	10.0	
LAG530785	001	45.0	0.0	10.0	

Values for TMDL calculations:

NPDES permit number	Outfall number	CBODu (mg/L)	Organic N (mg/L)	Ammonia N (mg/L)	NO2+NO3 N (mg/L)	Comments
LAG560232	001	46.00	20.00	10.00	0.00	
LAG530785	001	103.50	20.00	10.00	0.00	

Calculated loads:

NPDES permit number	Outfall number	CBODu (kg/day)	Organic N (kg/day)	AmmoniaN (kg.day)	NO2+NO3 N (kg.day)	Comments
LAG560232	001	6.31	2.74	1.37	0.00	
LAG530785	001	0.01	0.00	0.00	0.00	
Subsegment total		6.32	2.75	1.37	0.00	

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	1.38	1.15	0.36	-NaN
Mass LOads (data type 19)	N/A	495.96	14.53	N/A	N/A
SOD and Benthic	1746.57	N/A	N/A	0.00	N/A

Calculated loads of oxygen demand:

	SOD (kg/day)	CBODu (kg/day)	Oygen demand loads: Organic (kg/day)	Oygen demand loads: Ammonia (kg/day)	Total Oxygen demand (kg/day)
NPS inflows	N/A	1.38	4.98	1.56	7.92
Mass LOads (data type 19)	N/A	495.96	62.91	N/A	558.87
SOD and Benthic	1746.57	N/A	N/A	0.00	1746.57
Total for all NPS loads	1746.57	497.34	67.89	1.56	2313.36
NPS future growth (10.0%)	174.66	49.73	6.79	0.16	231.34
NPS margin of safety (10.0%)	174.66	49.73	6.79	0.16	231.34
NPS load allocation (80.0%)	1397.25	397.88	54.31	1.24	1850.68

SUMMARY OF POINT 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% * point source load
Future Growth = 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

Values from calculations above

	CBODu (kg/day)	Nitrogen loads (kg/day of N): Organic N (kg/day)	Nitrogen loads (kg/day of N): Ammonia N (kg/day)	Nitrogen loads (kg/day of N): NO3+NO2 (kg/day)
Modeled load for: Colfax STP	32.59	4.68	2.41	0.43
Modeled load for: Tioga Manor Nursin	5.37	0.39	0.78	0.02
Modeled load for: Bellsouth Tioga Ma	0.00	0.00	0.00	0.00
Calculated load for minor point source	6.32	2.75	1.37	0.00

Calculated loads of oxygen demand

		CBODu (kg/day)	Oygen demand loads: Organic N (kg/day)	Ammonia N (kg/day)	Total Oxygen demand (kg/day)
Modeled load for: Colfax STP		32.59	20.25	10.43	63.27
Modeled load for: Tioga Manor Nursin		5.37	1.68	3.37	10.42
Modeled load for: Bellsouth Tioga Ma		0.00	0.00	0.00	0.00
Calculated load for minor point source		6.32	11.89	5.95	24.16
Total for all point source loads		44.28	33.82	19.74	97.84
MOS for all point Sources	(10.0%)	4.43	3.38	1.97	9.78
FG for all point Sources	(10.0%)	4.43	3.38	1.97	9.78
WLA for: Colfax STP	(80.0%)	26.07	16.20	8.34	50.61
WLA for: Tioga Manor Nursin	(80.0%)	4.29	1.35	2.69	8.33
WLA for: Bellsouth Tioga Ma	(80.0%)	0.00	0.00	0.00	0.00
WLA for minor point sources	(80.0%)	5.06	9.51	4.76	19.33

Iatt Lake Winter Input

101302	Subsegment number for this TMDL
"Iatt Lake"	Subsegment name (max 50 chars)
"iattwin.out"	Name of LA-QUAL output file
3	Total number of reaches in the model
101302	Subsegment that reach 1 is in
101302	Subsegment that reach 2 is in
101302	Subsegment that reach 3 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: 101302 Iatt Lake
FTN ASSOCIATES, LTD.
Program:Pr20m6f

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

INFO FOR LA-QUAL OUTPUT FILE:
File name:iattwin.out
Date/Time:Output produced at 14:31 on 09/28/2007
LA-QUAL Version 8.11

LIST OF ALL REACHES IN LA-QUAL OUTPUT FILE:
Reach 1 (Elements 1 - 10) is in subsegment 101302 Lake Iatt
Reach 2 (Elements 11 - 20) is in subsegment 101302 Lake Iatt
Reach 3 (Elements 21 - 30) is in subsegment 101302 Lake Iatt

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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	0.03300	10.39	1.69	0.09	0.05	Iatt Creek @ 101302-
9	0.03000	0.94	0.24	0.05	0.10	NPS Dartigo Creek
13	0.03000	0.94	0.24	0.05	0.10	NPS Black Creek

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	29.62	4.82	0.26	0.14
9	2.44	0.62	0.13	0.26

13	2.44	0.62	0.13	0.26
Subsegment totals:	4.93	6.06	0.52	0.66

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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	3267.00	68.20
2	5640.00	141.00
3	4230.00	160.00
Subsegment totals	13137.00	369.20

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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	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	2	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	3	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	4	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	5	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	6	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00

1	7	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	8	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	9	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
1	10	24.20	652520.0	1.950	0.00	1.950	1272.41	0.00
2	11	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	12	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	13	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	14	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	15	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	16	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	17	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	18	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	19	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
2	20	24.20	1038400.0	1.950	0.00	1.410	1464.14	0.00
3	21	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	22	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	23	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	24	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	25	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	26	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	27	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	28	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	29	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
3	30	24.20	970510.0	1.950	0.00	1.200	1164.61	0.00
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				Subsegment totals:			39011.71	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	4.93	6.06	0.52	0.66
Mass LOads (data type 19)	N/A	13137.00	369.20	N/A	N/A
SOD and Benthic	39011.71	N/A	N/A	0.00	N/A

Calculated loads of oxygen demand:

			Oygen demand loads:		Total Oxygen demand
	SOD (kg/day)	CBODu (kg/day)	Organic (kg/day)	Ammonia (kg/day)	(kg/day)
NPS inflows	N/A	4.93	26.24	2.25	33.42
Mass LOads (data type 19)	N/A	13137.00	1598.64	N/A	14735.64
SOD and Benthic	39011.71	N/A	N/A	0.00	39011.71
Total for all NPS loads	39011.71	13141.93	1624.88	2.25	53780.77
NPS future growth (10.0%)	3901.17	1314.19	162.49	0.23	5378.08
NPS margin of safety (10.0%)	3901.17	1314.19	162.49	0.23	5378.08
NPS load allocation (80.0%)	31209.37	10513.55	1299.90	1.79	43024.61

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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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NUTRIENT TMDL CALCULATIONS:

Assumptions: Naturally occurring ratio of total N to total P = 1.00000

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	375.26	0.52	0.66	376.44	376.44
NPS margin of safety (10.0%)	37.53	0.05	0.07	37.64	37.64
NPS Future Growth (10.0%)	37.53	0.05	0.07	37.64	37.64
NPS load allocation (80.0%)	300.21	0.47	0.59	338.80	338.80

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	0.00	0.00	0.00
MOS for all point Sources (10.0%)	0.00	0.00	0.00	0.00	0.00
FG for all point Sources (10.0%)	0.00	0.00	0.00	0.00	0.00
WLA for minor point sources (80.0%)	0.00	0.00	0.00	0.00	0.00

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101301                  Subsegment number for this TMDL
"Bayou Rigolette"             Subsegment name (max 50 chars)
"rig_win3.out"           Name of LA-QUAL output file
8                       Total number of reaches in the model
101301                  Subsegment that reach 1 is in
101301                  Subsegment that reach 2 is in
101301                  Subsegment that reach 3 is in
101301                  Subsegment that reach 4 is in
101301                  Subsegment that reach 5 is in
101301                  Subsegment that reach 6 is in
101301                  Subsegment that reach 7 is in
101301                  Subsegment that reach 8 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
2                       Number of minor point sources
                    MINOR POINT SOURCE DISCHARGE #1:
"LAG560232"                NPDES permit number (9 chars)
"001"                      Outfall number (3 chars)
0.0290                     Flow (MGD)
"Aurora Park Subdivision" Comment for flow (max 40 chars)
20                         CBOD5 or BOD5 permit limit
0                          COD permit limit
10                         Ammonia N permit limit
""                         Comment for conc. limits (max 40 chars)
                        MINOR POINT SOURCE DISCHARGE #2:
"LAG530785"                NPDES permit number (9 chars)
"001"                      Outfall number (3 chars)
0.00002                    Flow (MGD)
"Hyams Trailer Park"       Comment for flow (max 40 chars)
45                          CBOD5 or BOD5 permit limit
0                        COD permit limit
10                         Ammonia N permit limit
""                   Comment for conc. limits (max 40 chars)
No                      Nutrient TMDL needed?
1.0                     Natural ratio of total N to total P
```

TMDL CALCULATIONS FOR SUBSEGMENT: 101301 Bayou Rigolette
FTN ASSOCIATES, LTD.
Program:Pr20m6f

INFO FOR INPUT FILE WITH USER SPECIFIED DATA AND OPTIONS:
File name:tmdlrgw3.inp

INFO FOR LA-QUAL OUTPUT FILE:
File name:rig_win3.out
Date/Time:Output produced at 09:07 on 02/28/2008
LA-QUAL Version 8.11

LIST OF ALL REACHES IN LA-QUAL OUTPUT FILE:
Reach 1 (Elements 1 - 41) is in subsegment 101301 Rigolette Bayou
Reach 2 (Elements 42 - 58) is in subsegment 101301 Sugarhouse Bayo
Reach 3 (Elements 59 - 131) is in subsegment 101301 Rigolette Bayou
Reach 4 (Elements 132 - 182) is in subsegment 101301 Rigolette Bayou
Reach 5 (Elements 183 - 254) is in subsegment 101301 Rigolette Bayou
Reach 6 (Elements 255 - 359) is in subsegment 101301 Rigolette Bayou
Reach 7 (Elements 360 - 401) is in subsegment 101301 Rigolette Bayou
Reach 8 (Elements 402 - 438) is in subsegment 101301 Rigolette 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	0.09300	1.20	0.38	0.11	46.30	Iatt Lake Dam
42	0.03000	0.76	0.84	0.14	0.02	Sugarhouse Bayou
153	0.03000	1.52	0.23	0.15	0.00	NPS Gray Creek
237	0.03000	1.52	0.23	0.15	0.00	NPS Bayou Marteau
329	0.03000	1.52	0.23	0.15	0.00	NPS Hudson Creek

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	9.64	3.05	0.88	372.03
42	1.97	2.18	0.36	0.05

153	3.94	0.60	0.39	0.00
237	3.94	0.60	0.39	0.00
329	3.94	0.60	0.39	0.00
Subsegment totals:	12.51	7.03	2.41	-NaN

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	3.80	0.38
2	3.80	0.38
3	1.52	0.38
4	1.52	0.38
5	38.00	1.52
6	76.00	2.28
7	167.00	4.71
8	296.00	7.22
Subsegment totals	587.64	17.25

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	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	2	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	3	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	4	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	5	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	6	24.20	1600.0	3.220	0.00	3.220	5.15	0.00

1	7	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	8	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	9	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	10	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	11	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	12	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	13	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	14	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	15	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	16	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	17	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	18	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	19	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	20	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	21	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	22	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	23	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	24	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	25	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	26	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	27	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	28	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	29	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	30	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	31	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	32	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	33	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	34	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	35	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	36	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	37	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	38	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	39	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	40	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
1	41	24.20	1600.0	3.220	0.00	3.220	5.15	0.00
2	42	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	43	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	44	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	45	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	46	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	47	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	48	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	49	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	50	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	51	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	52	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	53	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	54	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	55	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	56	24.20	2159.0	3.220	0.00	1.880	4.06	0.00

2	57	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
2	58	24.20	2159.0	3.220	0.00	1.880	4.06	0.00
3	59	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	60	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	61	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	62	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	63	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	64	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	65	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	66	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	67	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	68	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	69	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	70	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	71	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	72	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	73	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	74	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	75	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	76	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	77	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	78	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	79	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	80	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	81	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	82	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	83	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	84	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	85	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	86	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	87	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	88	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	89	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	90	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	91	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	92	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	93	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	94	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	95	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	96	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	97	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	98	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	99	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	100	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	101	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	102	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	103	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	104	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	105	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	106	24.20	2940.0	3.220	0.00	1.880	5.53	0.00

3	107	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	108	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	109	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	110	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	111	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	112	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	113	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	114	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	115	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	116	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	117	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	118	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	119	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	120	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	121	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	122	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	123	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	124	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	125	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	126	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	127	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	128	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	129	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	130	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
3	131	24.20	2940.0	3.220	0.00	1.880	5.53	0.00
4	132	24.20	1110.0	3.220	0.00	2.430	2.70	0.00
4	133	24.20	1110.0	3.220	0.00	2.430	2.70	0.00
4	134	24.20	1110.0	3.220	0.00	2.430	2.70	0.00
4	135	24.20	1110.0	3.220	0.00	2.440	2.71	0.00
4	136	24.20	1110.0	3.220	0.00	2.440	2.71	0.00
4	137	24.20	1110.0	3.220	0.00	2.440	2.71	0.00
4	138	24.20	1110.0	3.220	0.00	2.450	2.72	0.00
4	139	24.20	1110.0	3.220	0.00	2.450	2.72	0.00
4	140	24.20	1110.0	3.220	0.00	2.450	2.72	0.00
4	141	24.20	1110.0	3.220	0.00	2.460	2.73	0.00
4	142	24.20	1110.0	3.220	0.00	2.460	2.73	0.00
4	143	24.20	1110.0	3.220	0.00	2.460	2.73	0.00
4	144	24.20	1110.0	3.220	0.00	2.470	2.74	0.00
4	145	24.20	1110.0	3.220	0.00	2.470	2.74	0.00
4	146	24.20	1110.0	3.220	0.00	2.470	2.74	0.00
4	147	24.20	1110.0	3.220	0.00	2.480	2.75	0.00
4	148	24.20	1110.0	3.220	0.00	2.480	2.75	0.00
4	149	24.20	1110.0	3.220	0.00	2.480	2.75	0.00
4	150	24.20	1110.0	3.220	0.00	2.490	2.76	0.00
4	151	24.20	1110.0	3.220	0.00	2.490	2.76	0.00
4	152	24.20	1110.0	3.220	0.00	2.490	2.76	0.00
4	153	24.20	1110.0	3.220	0.00	2.500	2.78	0.00
4	154	24.20	1110.0	3.220	0.00	2.500	2.78	0.00
4	155	24.20	1110.0	3.220	0.00	2.500	2.78	0.00
4	156	24.20	1110.0	3.220	0.00	2.510	2.79	0.00

4	157	24.20	1110.0	3.220	0.00	2.510	2.79	0.00
4	158	24.20	1110.0	3.220	0.00	2.510	2.79	0.00
4	159	24.20	1110.0	3.220	0.00	2.520	2.80	0.00
4	160	24.20	1110.0	3.220	0.00	2.520	2.80	0.00
4	161	24.20	1110.0	3.220	0.00	2.520	2.80	0.00
4	162	24.20	1110.0	3.220	0.00	2.530	2.81	0.00
4	163	24.20	1110.0	3.220	0.00	2.530	2.81	0.00
4	164	24.20	1110.0	3.220	0.00	2.530	2.81	0.00
4	165	24.20	1110.0	3.220	0.00	2.540	2.82	0.00
4	166	24.20	1110.0	3.220	0.00	2.540	2.82	0.00
4	167	24.20	1110.0	3.220	0.00	2.540	2.82	0.00
4	168	24.20	1110.0	3.220	0.00	2.550	2.83	0.00
4	169	24.20	1110.0	3.220	0.00	2.550	2.83	0.00
4	170	24.20	1110.0	3.220	0.00	2.550	2.83	0.00
4	171	24.20	1110.0	3.220	0.00	2.560	2.84	0.00
4	172	24.20	1110.0	3.220	0.00	2.560	2.84	0.00
4	173	24.20	1110.0	3.220	0.00	2.570	2.85	0.00
4	174	24.20	1110.0	3.220	0.00	2.570	2.85	0.00
4	175	24.20	1110.0	3.220	0.00	2.570	2.85	0.00
4	176	24.20	1110.0	3.220	0.00	2.580	2.86	0.00
4	177	24.20	1110.0	3.220	0.00	2.580	2.86	0.00
4	178	24.20	1110.0	3.220	0.00	2.580	2.86	0.00
4	179	24.20	1110.0	3.220	0.00	2.590	2.87	0.00
4	180	24.20	1110.0	3.220	0.00	2.590	2.87	0.00
4	181	24.20	1110.0	3.220	0.00	2.590	2.87	0.00
4	182	24.20	1110.0	3.220	0.00	2.600	2.89	0.00
5	183	25.30	2320.0	3.220	0.00	1.590	3.69	0.00
5	184	25.30	2320.0	3.220	0.00	1.600	3.71	0.00
5	185	25.30	2320.0	3.220	0.00	1.600	3.71	0.00
5	186	25.30	2320.0	3.220	0.00	1.600	3.71	0.00
5	187	25.30	2320.0	3.220	0.00	1.600	3.71	0.00
5	188	25.30	2320.0	3.220	0.00	1.600	3.71	0.00
5	189	25.30	2320.0	3.220	0.00	1.610	3.74	0.00
5	190	25.30	2320.0	3.220	0.00	1.610	3.74	0.00
5	191	25.30	2320.0	3.220	0.00	1.610	3.74	0.00
5	192	25.30	2320.0	3.220	0.00	1.610	3.74	0.00
5	193	25.30	2320.0	3.220	0.00	1.610	3.74	0.00
5	194	25.30	2320.0	3.220	0.00	1.620	3.76	0.00
5	195	25.30	2320.0	3.220	0.00	1.620	3.76	0.00
5	196	25.30	2320.0	3.220	0.00	1.620	3.76	0.00
5	197	25.30	2320.0	3.220	0.00	1.620	3.76	0.00
5	198	25.30	2320.0	3.220	0.00	1.620	3.76	0.00
5	199	25.30	2320.0	3.220	0.00	1.630	3.78	0.00
5	200	25.30	2320.0	3.220	0.00	1.630	3.78	0.00
5	201	25.30	2320.0	3.220	0.00	1.630	3.78	0.00
5	202	25.30	2320.0	3.220	0.00	1.630	3.78	0.00
5	203	25.30	2320.0	3.220	0.00	1.630	3.78	0.00
5	204	25.30	2320.0	3.220	0.00	1.640	3.80	0.00
5	205	25.30	2320.0	3.220	0.00	1.640	3.80	0.00
5	206	25.30	2320.0	3.220	0.00	1.640	3.80	0.00

5	207	25.30	2320.0	3.220	0.00	1.640	3.80	0.00
5	208	25.30	2320.0	3.220	0.00	1.640	3.80	0.00
5	209	25.30	2320.0	3.220	0.00	1.650	3.83	0.00
5	210	25.30	2320.0	3.220	0.00	1.650	3.83	0.00
5	211	25.30	2320.0	3.220	0.00	1.650	3.83	0.00
5	212	25.30	2320.0	3.220	0.00	1.650	3.83	0.00
5	213	25.30	2320.0	3.220	0.00	1.650	3.83	0.00
5	214	25.30	2320.0	3.220	0.00	1.660	3.85	0.00
5	215	25.30	2320.0	3.220	0.00	1.660	3.85	0.00
5	216	25.30	2320.0	3.220	0.00	1.660	3.85	0.00
5	217	25.30	2320.0	3.220	0.00	1.660	3.85	0.00
5	218	25.30	2320.0	3.220	0.00	1.660	3.85	0.00
5	219	25.30	2320.0	3.220	0.00	1.670	3.87	0.00
5	220	25.30	2320.0	3.220	0.00	1.670	3.87	0.00
5	221	25.30	2320.0	3.220	0.00	1.670	3.87	0.00
5	222	25.30	2320.0	3.220	0.00	1.670	3.87	0.00
5	223	25.30	2320.0	3.220	0.00	1.670	3.87	0.00
5	224	25.30	2320.0	3.220	0.00	1.680	3.90	0.00
5	225	25.30	2320.0	3.220	0.00	1.680	3.90	0.00
5	226	25.30	2320.0	3.220	0.00	1.680	3.90	0.00
5	227	25.30	2320.0	3.220	0.00	1.680	3.90	0.00
5	228	25.30	2320.0	3.220	0.00	1.680	3.90	0.00
5	229	25.30	2320.0	3.220	0.00	1.690	3.92	0.00
5	230	25.30	2320.0	3.220	0.00	1.690	3.92	0.00
5	231	25.30	2320.0	3.220	0.00	1.690	3.92	0.00
5	232	25.30	2320.0	3.220	0.00	1.690	3.92	0.00
5	233	25.30	2320.0	3.220	0.00	1.690	3.92	0.00
5	234	25.30	2320.0	3.220	0.00	1.700	3.94	0.00
5	235	25.30	2320.0	3.220	0.00	1.700	3.94	0.00
5	236	25.30	2320.0	3.220	0.00	1.700	3.94	0.00
5	237	25.30	2320.0	3.220	0.00	1.700	3.94	0.00
5	238	25.30	2320.0	3.220	0.00	1.700	3.94	0.00
5	239	25.30	2320.0	3.220	0.00	1.710	3.97	0.00
5	240	25.30	2320.0	3.220	0.00	1.710	3.97	0.00
5	241	25.30	2320.0	3.220	0.00	1.710	3.97	0.00
5	242	25.30	2320.0	3.220	0.00	1.710	3.97	0.00
5	243	25.30	2320.0	3.220	0.00	1.720	3.99	0.00
5	244	25.30	2320.0	3.220	0.00	1.720	3.99	0.00
5	245	25.30	2320.0	3.220	0.00	1.720	3.99	0.00
5	246	25.30	2320.0	3.220	0.00	1.720	3.99	0.00
5	247	25.30	2320.0	3.220	0.00	1.720	3.99	0.00
5	248	25.30	2320.0	3.220	0.00	1.730	4.01	0.00
5	249	25.30	2320.0	3.220	0.00	1.730	4.01	0.00
5	250	25.30	2320.0	3.220	0.00	1.730	4.01	0.00
5	251	25.30	2320.0	3.220	0.00	1.730	4.01	0.00
5	252	25.30	2320.0	3.220	0.00	1.730	4.01	0.00
5	253	25.30	2320.0	3.220	0.00	1.740	4.04	0.00
5	254	25.30	2320.0	3.220	0.00	1.740	4.04	0.00
6	255	26.70	1080.0	3.220	0.00	1.740	1.88	0.00
6	256	26.70	1080.0	3.220	0.00	1.740	1.88	0.00

6	257	26.70	1080.0	3.220	0.00	1.740	1.88	0.00
6	258	26.70	1080.0	3.220	0.00	1.740	1.88	0.00
6	259	26.70	1080.0	3.220	0.00	1.740	1.88	0.00
6	260	26.70	1080.0	3.220	0.00	1.740	1.88	0.00
6	261	26.70	1080.0	3.220	0.00	1.740	1.88	0.00
6	262	26.70	1080.0	3.220	0.00	1.740	1.88	0.00
6	263	26.70	1080.0	3.220	0.00	1.740	1.88	0.00
6	264	26.70	1080.0	3.220	0.00	1.750	1.89	0.00
6	265	26.70	1080.0	3.220	0.00	1.750	1.89	0.00
6	266	26.70	1080.0	3.220	0.00	1.750	1.89	0.00
6	267	26.70	1080.0	3.220	0.00	1.750	1.89	0.00
6	268	26.70	1080.0	3.220	0.00	1.750	1.89	0.00
6	269	26.70	1080.0	3.220	0.00	1.750	1.89	0.00
6	270	26.70	1080.0	3.220	0.00	1.750	1.89	0.00
6	271	26.70	1080.0	3.220	0.00	1.750	1.89	0.00
6	272	26.70	1080.0	3.220	0.00	1.750	1.89	0.00
6	273	26.70	1080.0	3.220	0.00	1.750	1.89	0.00
6	274	26.70	1080.0	3.220	0.00	1.750	1.89	0.00
6	275	26.70	1080.0	3.220	0.00	1.750	1.89	0.00
6	276	26.70	1080.0	3.220	0.00	1.750	1.89	0.00
6	277	26.70	1080.0	3.220	0.00	1.760	1.90	0.00
6	278	26.70	1080.0	3.220	0.00	1.760	1.90	0.00
6	279	26.70	1080.0	3.220	0.00	1.760	1.90	0.00
6	280	26.70	1080.0	3.220	0.00	1.760	1.90	0.00
6	281	26.70	1080.0	3.220	0.00	1.760	1.90	0.00
6	282	26.70	1080.0	3.220	0.00	1.760	1.90	0.00
6	283	26.70	1080.0	3.220	0.00	1.760	1.90	0.00
6	284	26.70	1080.0	3.220	0.00	1.760	1.90	0.00
6	285	26.70	1080.0	3.220	0.00	1.760	1.90	0.00
6	286	26.70	1080.0	3.220	0.00	1.760	1.90	0.00
6	287	26.70	1080.0	3.220	0.00	1.760	1.90	0.00
6	288	26.70	1080.0	3.220	0.00	1.760	1.90	0.00
6	289	26.70	1080.0	3.220	0.00	1.760	1.90	0.00
6	290	26.70	1080.0	3.220	0.00	1.760	1.90	0.00
6	291	26.70	1080.0	3.220	0.00	1.770	1.91	0.00
6	292	26.70	1080.0	3.220	0.00	1.770	1.91	0.00
6	293	26.70	1080.0	3.220	0.00	1.770	1.91	0.00
6	294	26.70	1080.0	3.220	0.00	1.770	1.91	0.00
6	295	26.70	1080.0	3.220	0.00	1.770	1.91	0.00
6	296	26.70	1080.0	3.220	0.00	1.770	1.91	0.00
6	297	26.70	1080.0	3.220	0.00	1.770	1.91	0.00
6	298	26.70	1080.0	3.220	0.00	1.770	1.91	0.00
6	299	26.70	1080.0	3.220	0.00	1.770	1.91	0.00
6	300	26.70	1080.0	3.220	0.00	1.770	1.91	0.00
6	301	26.70	1080.0	3.220	0.00	1.770	1.91	0.00
6	302	26.70	1080.0	3.220	0.00	1.770	1.91	0.00
6	303	26.70	1080.0	3.220	0.00	1.770	1.91	0.00
6	304	26.70	1080.0	3.220	0.00	1.780	1.92	0.00
6	305	26.70	1080.0	3.220	0.00	1.780	1.92	0.00
6	306	26.70	1080.0	3.220	0.00	1.780	1.92	0.00

6	307	26.70	1080.0	3.220	0.00	1.780	1.92	0.00
6	308	26.70	1080.0	3.220	0.00	1.780	1.92	0.00
6	309	26.70	1080.0	3.220	0.00	1.780	1.92	0.00
6	310	26.70	1080.0	3.220	0.00	1.780	1.92	0.00
6	311	26.70	1080.0	3.220	0.00	1.780	1.92	0.00
6	312	26.70	1080.0	3.220	0.00	1.780	1.92	0.00
6	313	26.70	1080.0	3.220	0.00	1.780	1.92	0.00
6	314	26.70	1080.0	3.220	0.00	1.780	1.92	0.00
6	315	26.70	1080.0	3.220	0.00	1.780	1.92	0.00
6	316	26.70	1080.0	3.220	0.00	1.780	1.92	0.00
6	317	26.70	1080.0	3.220	0.00	1.780	1.92	0.00
6	318	26.70	1080.0	3.220	0.00	1.790	1.93	0.00
6	319	26.70	1080.0	3.220	0.00	1.790	1.93	0.00
6	320	26.70	1080.0	3.220	0.00	1.790	1.93	0.00
6	321	26.70	1080.0	3.220	0.00	1.790	1.93	0.00
6	322	26.70	1080.0	3.220	0.00	1.790	1.93	0.00
6	323	26.70	1080.0	3.220	0.00	1.790	1.93	0.00
6	324	26.70	1080.0	3.220	0.00	1.790	1.93	0.00
6	325	26.70	1080.0	3.220	0.00	1.790	1.93	0.00
6	326	26.70	1080.0	3.220	0.00	1.790	1.93	0.00
6	327	26.70	1080.0	3.220	0.00	1.790	1.93	0.00
6	328	26.70	1080.0	3.220	0.00	1.790	1.93	0.00
6	329	26.70	1080.0	3.220	0.00	1.790	1.93	0.00
6	330	26.70	1080.0	3.220	0.00	1.790	1.93	0.00
6	331	26.70	1080.0	3.220	0.00	1.800	1.94	0.00
6	332	26.70	1080.0	3.220	0.00	1.800	1.94	0.00
6	333	26.70	1080.0	3.220	0.00	1.800	1.94	0.00
6	334	26.70	1080.0	3.220	0.00	1.800	1.94	0.00
6	335	26.70	1080.0	3.220	0.00	1.800	1.94	0.00
6	336	26.70	1080.0	3.220	0.00	1.800	1.94	0.00
6	337	26.70	1080.0	3.220	0.00	1.800	1.94	0.00
6	338	26.70	1080.0	3.220	0.00	1.800	1.94	0.00
6	339	26.70	1080.0	3.220	0.00	1.800	1.94	0.00
6	340	26.70	1080.0	3.220	0.00	1.800	1.94	0.00
6	341	26.70	1080.0	3.220	0.00	1.800	1.94	0.00
6	342	26.70	1080.0	3.220	0.00	1.800	1.94	0.00
6	343	26.70	1080.0	3.220	0.00	1.800	1.94	0.00
6	344	26.70	1080.0	3.220	0.00	1.810	1.95	0.00
6	345	26.70	1080.0	3.220	0.00	1.810	1.95	0.00
6	346	26.70	1080.0	3.220	0.00	1.810	1.95	0.00
6	347	26.70	1080.0	3.220	0.00	1.810	1.95	0.00
6	348	26.70	1080.0	3.220	0.00	1.810	1.95	0.00
6	349	26.70	1080.0	3.220	0.00	1.810	1.95	0.00
6	350	26.70	1080.0	3.220	0.00	1.810	1.95	0.00
6	351	26.70	1080.0	3.220	0.00	1.810	1.95	0.00
6	352	26.70	1080.0	3.220	0.00	1.810	1.95	0.00
6	353	26.70	1080.0	3.220	0.00	1.810	1.95	0.00
6	354	26.70	1080.0	3.220	0.00	1.810	1.95	0.00
6	355	26.70	1080.0	3.220	0.00	1.810	1.95	0.00
6	356	26.70	1080.0	3.220	0.00	1.810	1.95	0.00

6	357	26.70	1080.0	3.220	0.00	1.820	1.97	0.00
6	358	26.70	1080.0	3.220	0.00	1.820	1.97	0.00
6	359	26.70	1080.0	3.220	0.00	1.820	1.97	0.00
7	360	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	361	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	362	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	363	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	364	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	365	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	366	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	367	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	368	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	369	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	370	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	371	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	372	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	373	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	374	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	375	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	376	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	377	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	378	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	379	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	380	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	381	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	382	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	383	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	384	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	385	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	386	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	387	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	388	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	389	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	390	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	391	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	392	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	393	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	394	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	395	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	396	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	397	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	398	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	399	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	400	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
7	401	27.40	4770.0	3.220	0.00	1.350	6.44	0.00
8	402	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	403	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	404	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	405	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	406	27.40	9750.0	3.220	0.00	1.350	13.16	0.00

8	407	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	408	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	409	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	410	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	411	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	412	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	413	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	414	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	415	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	416	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	417	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	418	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	419	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	420	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	421	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	422	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	423	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	424	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	425	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	426	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	427	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	428	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	429	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	430	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	431	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	432	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	433	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	434	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	435	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	436	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	437	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
8	438	27.40	9750.0	3.220	0.00	1.350	13.16	0.00
							---	---
				Subsegment totals:			2063.09	0.00

CALCULATIONS FOR LOADS FROM POINT SOURCE DISCHARGES EXPLICITLY MODELED:

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:

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 discharge
42	0.01640	34.500	3.300	1.700	0.300	Colfax STP
428	0.00090	104.000	5.000	10.000	0.300	Tioga Manor Nursin

428	0.00000	104.000	5.000	10.000	0.300	Bellsouth Tioga Ma

Calculated values:

Element number	CBODu load (kg/day)	Organic N load (kg/day)	Ammonia N load (kg/day)	NO2+NO3 N load (kg/day)
42	48.89	4.68	2.41	0.43
428	8.09	0.39	0.78	0.02
428	0.00	0.00	0.00	0.00
Subsegment total	56.97	5.06	3.19	-NaN

CALCULATIONS FOR LOADS FROM POINT SOURCE DISCHARGES NOT EXPLICITLY MODELED:

Equations used: Flow rate from TMDL calcs = Permit flow rate * 1.250 (to incorporate MOS and FG)
(Load, kg/day) = (Flow rate, MGD) * (Conc., mg/L) * 3.785 L/gal * 1.0E6 gal/MG * 1.0E-6 kg/mg

Assumptions: Ratio of CBODu to CBOD5 for point source dissharges = 2.3 (guidance from LTP).
For permits with BOD or ammonia limits, NO2+NO3 = 10 mg/L (drinking water criteria).
For permits with COD limits, assume that CBODu is about the same magnitude as COD and
that discharges of nitrogen (organic, ammonia, and NO2+NO3) are negligible.

NPDES permit number	Outfall number	Permit flow rate (MGD)	Factor to incorporate MOS and FG into flow	Flow rate for TMDL calcs (MGD	Comments
LAG560232	001	0.029	1.250	0.036	Aurora Park Subdivision
LAG530785	001	0.000	1.250	0.000	Hyams Trailer Park

NPDES permit number	Outfall number	User specified permit limits: CBOD5 (mg/L)	COD (mg/L)	Ammonia (mg/L)	Comments
LAG560232	001	20.0	0.0	10.0	
LAG530785	001	45.0	0.0	10.0	

Values for TMDL calculations:

NPDES permit number	Outfall number	CBODu (mg/L)	Organic N (mg/L)	Ammonia N (mg/L)	NO2+NO3 N (mg/L)	Comments
LAG560232	001	46.00	20.00	10.00	0.00	
LAG530785	001	103.50	20.00	10.00	0.00	

Calculated loads:

NPDES permit number	Outfall number	CBODu (kg/day)	Organic N (kg/day)	AmmoniaN (kg.day)	NO2+NO3 N (kg.day)	Comments
LAG560232	001	6.31	2.74	1.37	0.00	
LAG530785	001	0.01	0.00	0.00	0.00	
Subsegment total		6.32	2.75	1.37	0.00	

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

	SOD (kg/day)	CBODu (kg/day)	Nitrogen loads (kg/day of N): Organic (kg/day)	Ammonia (kg/day)	NO2+NO3 N (kg/day)
NPS inflows	N/A	12.51	7.03	2.41	-NaN
Mass LOads (data type 19)	N/A	587.64	17.25	N/A	N/A
SOD and Benthic	2063.09	N/A	N/A	0.00	N/A

Calculated loads of oxygen demand:

	SOD (kg/day)	CBODu (kg/day)	Oygen demand loads: Organic (kg/day)	Ammonia (kg/day)	Total Oxygen demand (kg/day)

NPS inflows	N/A	12.51	30.44	10.44	53.38
Mass LOads (data type 19)	N/A	587.64	74.69	N/A	662.33
SOD and Benthic	2063.09	N/A	N/A	0.00	2063.09
Total for all NPS loads	2063.09	600.15	105.13	10.44	2778.80
NPS future growth (10.0%)	206.31	60.01	10.51	1.04	277.88
NPS margin of safety (10.0%)	206.31	60.01	10.51	1.04	277.88
NPS load allocation (80.0%)	1650.47	480.13	84.11	8.36	2223.04

SUMMARY OF POINT 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% * point source load
Future Growth = 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

Values from calculations above

		Nitrogen loads (kg/day of N):		
	CBODu (kg/day)	Organic N (kg/day)	Ammonia N (kg/day)	NO3+NO2 (kg/day)
Modeled load for: Colfax STP	48.89	4.68	2.41	0.43
Modeled load for: Tioga Manor Nursin	8.09	0.39	0.78	0.02
Modeled load for: Bellsouth Tioga Ma	0.00	0.00	0.00	0.00
Calculated load for minor point source	6.32	2.75	1.37	0.00

Calculated loads of oxygen demand

		Oygen demand loads:		Total Oxygen demand
	CBODu (kg/day)	Organic N (kg/day)	Ammonia N (kg/day)	(kg/day)
Modeled load for: Colfax STP	48.89	20.25	10.43	79.56
Modeled load for: Tioga Manor Nursin	8.09	1.68	3.37	13.14
Modeled load for: Bellsouth Tioga Ma	0.00	0.00	0.00	0.00
Calculated load for minor point source	6.32	11.89	5.95	24.16
Total for all point source loads	63.29	33.82	19.74	116.86
MOS for all point Sources (10.0%)	6.33	3.38	1.97	11.69
FG for all point Sources (10.0%)	6.33	3.38	1.97	11.69

WLA for: Colfax STP	(80.0%)	39.11	16.20	8.34	63.65
WLA for: Tioga Manor Nursin	(80.0%)	6.47	1.35	2.69	10.51
WLA for: Bellsouth Tioga Ma	(80.0%)	0.00	0.00	0.00	0.00
WLA for minor point sources	(80.0%)	5.06	9.51	4.76	19.33

APPENDIX P

Source Code for TMDL Calculation Program

```
        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, elem, cir
      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)
       INTEGER 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)
       INTEGER 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)
       INTEGER 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)
C              read(stream_ID(109:111),)elem_begin(num)
C              read(stream_ID(116:118),)elem_end(num)
              read(stream_ID(109:111),'(I3)') elem_begin(num)
              read(stream_ID(116:118),'(I3)') 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,f10.1,3x,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 Q

Ammonia Toxicity Calculations

AMMONIA TOXICITY CALCULATIONS FOR BAYOU RIGOLETTE AND IATT LAKE (SUBSEGMENTS 101301 AND 101302)

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°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 stations 1220 (Bayou Rigolette northwest of Pineville, LA) and 1221 (Iatt Lake southwest of Fairfield, LA):

ummer (May-Oct)			Winter (Nov-Apr)	
Date		pH (su)	Date	pH (su)
05/20/02	6.5	6.5	01/28/02	7.1
06/17/02	6.55	6.55	01/28/02	7.1
07/22/02	6.8	6.8	02/25/02	6.1
07/22/02	6.8	6.8	03/25/02	6.2
08/19/02	6.8	6.8	04/15/02	5.8
09/23/02	7.8	7.8	04/15/02	5.8
10/21/02	6.8	6.8	11/19/02	6.8
05/08/06	6.1	6.1	12/16/02	7.2
06/12/06	6.61	6.61	12/12/05	6.11
07/10/06	6.43	6.43	01/10/06	7.35
07/24/06	6.31	6.31	01/25/06	7.43
10/16/06	7.15	7.15	02/13/06	7.42
10/30/06	6.32	6.32	03/13/06	7.12
08/20/02	7.18	7.18	04/03/06	6.89
06/18/02	7.13	7.13	11/18/02	6.5
10/22/02	7.69	7.69	12/17/02	5.8
10/22/02	7.69	7.69	02/18/02	6.8
09/24/02	7.4	7.4	03/26/02	6.8
05/21/02	7.24	7.24	01/22/02	8.23
07/22/02	6.95	6.95	01/22/02	8.23
Average =		6.91	Average =	6.84

	Summer					Winter			
Model Element	Seasonal average pH	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	6.91	30.8	2.13	0.17	No	24.2	3.34	0.20	No
2	6.91	30.8	2.13	0.15	No	24.2	3.34	0.16	No
3	6.91	30.8	2.13	0.14	No	24.2	3.34	0.15	No
4	6.91	30.8	2.13	0.14	No	24.2	3.34	0.14	No
5	6.91	30.8	2.13	0.14	No	24.2	3.34	0.14	No
6	6.91	30.8	2.13	0.14	No	24.2	3.34	0.14	No
7	6.91	30.8	2.13	0.14	No	24.2	3.34	0.14	No
8	6.91	30.8	2.13	0.14	No	24.2	3.34	0.14	No
9	6.91	30.8	2.13	0.14	No	24.2	3.34	0.13	No
10	6.91	30.8	2.13	0.14	No	24.2	3.34	0.14	No
11	6.91	30.8	2.13	0.12	No	24.2	3.34	0.12	No
12	6.91	30.8	2.13	0.12	No	24.2	3.34	0.12	No
13	6.91	30.8	2.13	0.12	No	24.2	3.34	0.12	No
14	6.91	30.8	2.13	0.12	No	24.2	3.34	0.12	No
15	6.91	30.8	2.13	0.12	No	24.2	3.34	0.12	No
16	6.91	30.8	2.13	0.12	No	24.2	3.34	0.12	No
17	6.91	30.8	2.13	0.12	No	24.2	3.34	0.12	No
18	6.91	30.8	2.13	0.12	No	24.2	3.34	0.12	No
19	6.91	30.8	2.13	0.12	No	24.2	3.34	0.12	No
20	6.91	30.8	2.13	0.12	No	24.2	3.34	0.12	No
21	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
22	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No

Model Element	Summer					Winter			
	Seasonal average pH	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 ?
23	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
24	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
25	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
26	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
27	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
28	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
29	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
30	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
31	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
32	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
33	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
34	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
35	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
36	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
37	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
38	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
39	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
40	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
41	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
42	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
43	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
44	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
45	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
46	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
47	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
48	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
49	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
50	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
51	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
52	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
53	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
54	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
55	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
56	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
57	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
58	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
59	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
60	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
61	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
62	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
63	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
64	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
65	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
66	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
67	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
68	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
69	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
70	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
71	6.91	30.8	2.13	0.11	No	24.2	3.34	0.11	No
72	6.91	30.8	2.13	1.44	No	24.2	3.34	0.69	No
73	6.91	30.8	2.13	1.42	No	24.2	3.34	0.69	No
74	6.91	30.8	2.13	1.40	No	24.2	3.34	0.68	No
75	6.91	30.8	2.13	1.38	No	24.2	3.34	0.68	No
76	6.91	30.8	2.13	1.36	No	24.2	3.34	0.68	No
77	6.91	30.8	2.13	1.35	No	24.2	3.34	0.67	No
78	6.91	30.8	2.13	1.33	No	24.2	3.34	0.67	No
79	6.91	30.8	2.13	1.31	No	24.2	3.34	0.67	No
80	6.91	30.8	2.13	1.30	No	24.2	3.34	0.67	No
81	6.91	30.8	2.13	1.28	No	24.2	3.34	0.66	No
82	6.91	30.8	2.13	1.27	No	24.2	3.34	0.66	No
83	6.91	30.8	2.13	1.25	No	24.2	3.34	0.66	No
84	6.91	30.8	2.13	1.24	No	24.2	3.34	0.66	No
85	6.91	30.8	2.13	1.22	No	24.2	3.34	0.65	No

Model Element	Summer					Winter			
	Seasonal average pH	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 ?
86	6.91	30.8	2.13	1.21	No	24.2	3.34	0.65	No
87	6.91	30.8	2.13	1.19	No	24.2	3.34	0.65	No
88	6.91	30.8	2.13	1.18	No	24.2	3.34	0.65	No
89	6.91	30.8	2.13	0.57	No	24.2	3.34	0.29	No
90	6.91	30.8	2.13	0.57	No	24.2	3.34	0.29	No
91	6.91	30.8	2.13	0.57	No	24.2	3.34	0.28	No
92	6.91	30.8	2.13	0.56	No	24.2	3.34	0.28	No
93	6.91	30.8	2.13	0.56	No	24.2	3.34	0.28	No
94	6.91	30.8	2.13	0.56	No	24.2	3.34	0.28	No
95	6.91	30.8	2.13	0.55	No	24.2	3.34	0.28	No
96	6.91	30.8	2.13	0.55	No	24.2	3.34	0.28	No
97	6.91	30.8	2.13	0.55	No	24.2	3.34	0.28	No
98	6.91	30.8	2.13	0.54	No	24.2	3.34	0.28	No
99	6.91	30.8	2.13	0.54	No	24.2	3.34	0.28	No
100	6.91	30.8	2.13	0.54	No	24.2	3.34	0.28	No
101	6.91	30.8	2.13	0.53	No	24.2	3.34	0.28	No
102	6.91	30.8	2.13	0.53	No	24.2	3.34	0.28	No
103	6.91	30.8	2.13	0.53	No	24.2	3.34	0.28	No
104	6.91	30.8	2.13	0.52	No	24.2	3.34	0.28	No
105	6.91	30.8	2.13	0.52	No	24.2	3.34	0.28	No
106	6.91	30.8	2.13	0.52	No	24.2	3.34	0.28	No
107	6.91	30.8	2.13	0.52	No	24.2	3.34	0.28	No
108	6.91	30.8	2.13	0.51	No	24.2	3.34	0.28	No
109	6.91	30.8	2.13	0.51	No	24.2	3.34	0.28	No
110	6.91	30.8	2.13	0.51	No	24.2	3.34	0.28	No
111	6.91	30.8	2.13	0.50	No	24.2	3.34	0.28	No
112	6.91	30.8	2.13	0.50	No	24.2	3.34	0.28	No
113	6.91	30.8	2.13	0.50	No	24.2	3.34	0.28	No
114	6.91	30.8	2.13	0.50	No	24.2	3.34	0.28	No
115	6.91	30.8	2.13	0.49	No	24.2	3.34	0.28	No
116	6.91	30.8	2.13	0.49	No	24.2	3.34	0.27	No
117	6.91	30.8	2.13	0.49	No	24.2	3.34	0.27	No
118	6.91	30.8	2.13	0.49	No	24.2	3.34	0.27	No
119	6.91	30.8	2.13	0.48	No	24.2	3.34	0.27	No
120	6.91	30.8	2.13	0.48	No	24.2	3.34	0.27	No
121	6.91	30.8	2.13	0.48	No	24.2	3.34	0.27	No
122	6.91	30.8	2.13	0.48	No	24.2	3.34	0.27	No
123	6.91	30.8	2.13	0.47	No	24.2	3.34	0.27	No
124	6.91	30.8	2.13	0.47	No	24.2	3.34	0.27	No
125	6.91	30.8	2.13	0.47	No	24.2	3.34	0.27	No
126	6.91	30.8	2.13	0.47	No	24.2	3.34	0.27	No
127	6.91	30.8	2.13	0.46	No	24.2	3.34	0.27	No
128	6.91	30.8	2.13	0.46	No	24.2	3.34	0.27	No
129	6.91	30.8	2.13	0.46	No	24.2	3.34	0.27	No
130	6.91	30.8	2.13	0.46	No	24.2	3.34	0.27	No
131	6.91	30.8	2.13	0.45	No	24.2	3.34	0.27	No
132	6.91	30.8	2.13	0.45	No	24.2	3.34	0.27	No
133	6.91	30.8	2.13	0.45	No	24.2	3.34	0.27	No
134	6.91	30.8	2.13	0.45	No	24.2	3.34	0.27	No
135	6.91	30.8	2.13	0.44	No	24.2	3.34	0.27	No
136	6.91	30.8	2.13	0.44	No	24.2	3.34	0.27	No
137	6.91	30.8	2.13	0.44	No	24.2	3.34	0.27	No
138	6.91	30.8	2.13	0.44	No	24.2	3.34	0.27	No
139	6.91	30.8	2.13	0.44	No	24.2	3.34	0.27	No
140	6.91	30.8	2.13	0.43	No	24.2	3.34	0.27	No
141	6.91	30.8	2.13	0.43	No	24.2	3.34	0.27	No
142	6.91	30.8	2.13	0.43	No	24.2	3.34	0.27	No
143	6.91	30.8	2.13	0.43	No	24.2	3.34	0.26	No
144	6.91	30.8	2.13	0.42	No	24.2	3.34	0.26	No
145	6.91	30.8	2.13	0.42	No	24.2	3.34	0.26	No
146	6.91	30.8	2.13	0.42	No	24.2	3.34	0.26	No
147	6.91	30.8	2.13	0.42	No	24.2	3.34	0.26	No
148	6.91	30.8	2.13	0.42	No	24.2	3.34	0.26	No

Model Element	Summer					Winter			
	Seasonal average pH	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 ?
149	6.91	30.8	2.13	0.41	No	24.2	3.34	0.26	No
150	6.91	30.8	2.13	0.41	No	24.2	3.34	0.26	No
151	6.91	30.8	2.13	0.41	No	24.2	3.34	0.26	No
152	6.91	30.8	2.13	0.41	No	24.2	3.34	0.26	No
153	6.91	30.8	2.13	0.41	No	24.2	3.34	0.26	No
154	6.91	30.8	2.13	0.41	No	24.2	3.34	0.26	No
155	6.91	30.8	2.13	0.40	No	24.2	3.34	0.26	No
156	6.91	30.8	2.13	0.40	No	24.2	3.34	0.26	No
157	6.91	30.8	2.13	0.40	No	24.2	3.34	0.26	No
158	6.91	30.8	2.13	0.40	No	24.2	3.34	0.26	No
159	6.91	30.8	2.13	0.40	No	24.2	3.34	0.26	No
160	6.91	30.8	2.13	0.39	No	24.2	3.34	0.26	No
161	6.91	30.8	2.13	0.39	No	24.2	3.34	0.26	No
162	6.91	30.8	2.13	0.39	No	24.2	3.34	0.26	No
163	6.91	30.8	2.13	0.39	No	24.2	3.34	0.26	No
164	6.91	30.8	2.13	0.39	No	24.2	3.34	0.26	No
165	6.91	30.8	2.13	0.39	No	24.2	3.34	0.26	No
166	6.91	30.8	2.13	0.39	No	24.2	3.34	0.26	No
167	6.91	30.8	2.13	0.39	No	24.2	3.34	0.26	No
168	6.91	30.8	2.13	0.39	No	24.2	3.34	0.26	No
169	6.91	30.8	2.13	0.39	No	24.2	3.34	0.26	No
170	6.91	30.8	2.13	0.39	No	24.2	3.34	0.26	No
171	6.91	30.8	2.13	0.39	No	24.2	3.34	0.26	No
172	6.91	30.8	2.13	0.39	No	24.2	3.34	0.26	No
173	6.91	30.8	2.13	0.38	No	24.2	3.34	0.26	No
174	6.91	30.8	2.13	0.38	No	24.2	3.34	0.26	No
175	6.91	30.8	2.13	0.38	No	24.2	3.34	0.26	No
176	6.91	30.8	2.13	0.38	No	24.2	3.34	0.26	No
177	6.91	30.8	2.13	0.38	No	24.2	3.34	0.26	No
178	6.91	30.8	2.13	0.38	No	24.2	3.34	0.26	No
179	6.91	30.8	2.13	0.38	No	24.2	3.34	0.26	No
180	6.91	30.8	2.13	0.38	No	24.2	3.34	0.26	No
181	6.91	30.8	2.13	0.38	No	24.2	3.34	0.26	No
182	6.91	30.8	2.13	0.38	No	24.2	3.34	0.26	No
183	6.91	30.8	2.13	0.36	No	24.2	3.34	0.24	No
184	6.91	30.8	2.13	0.36	No	24.2	3.34	0.24	No
185	6.91	30.8	2.13	0.36	No	24.2	3.34	0.24	No
186	6.91	30.8	2.13	0.36	No	24.2	3.34	0.24	No
187	6.91	30.8	2.13	0.36	No	24.2	3.34	0.24	No
188	6.91	30.8	2.13	0.36	No	24.2	3.34	0.24	No
189	6.91	30.8	2.13	0.36	No	24.2	3.34	0.24	No
190	6.91	30.8	2.13	0.36	No	24.2	3.34	0.24	No
191	6.91	30.8	2.13	0.36	No	24.2	3.34	0.24	No
192	6.91	30.8	2.13	0.36	No	24.2	3.34	0.24	No
193	6.91	30.8	2.13	0.36	No	24.2	3.34	0.24	No
194	6.91	30.8	2.13	0.36	No	24.2	3.34	0.24	No
195	6.91	30.8	2.13	0.36	No	24.2	3.34	0.24	No
196	6.91	30.8	2.13	0.35	No	24.2	3.34	0.24	No
197	6.91	30.8	2.13	0.35	No	24.2	3.34	0.24	No
198	6.91	30.8	2.13	0.35	No	24.2	3.34	0.24	No
199	6.91	30.8	2.13	0.35	No	24.2	3.34	0.23	No
200	6.91	30.8	2.13	0.35	No	24.2	3.34	0.23	No
201	6.91	30.8	2.13	0.35	No	24.2	3.34	0.23	No
202	6.91	30.8	2.13	0.35	No	24.2	3.34	0.23	No
203	6.91	30.8	2.13	0.35	No	24.2	3.34	0.23	No
204	6.91	30.8	2.13	0.35	No	24.2	3.34	0.23	No
205	6.91	30.8	2.13	0.35	No	24.2	3.34	0.23	No
206	6.91	30.8	2.13	0.35	No	24.2	3.34	0.23	No
207	6.91	30.8	2.13	0.35	No	24.2	3.34	0.23	No
208	6.91	30.8	2.13	0.35	No	24.2	3.34	0.23	No
209	6.91	30.8	2.13	0.35	No	24.2	3.34	0.23	No
210	6.91	30.8	2.13	0.35	No	24.2	3.34	0.23	No
211	6.91	30.8	2.13	0.35	No	24.2	3.34	0.23	No

Model Element	Summer					Winter			
	Seasonal average pH	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 ?
212	6.91	30.8	2.13	0.35	No	24.2	3.34	0.23	No
213	6.91	30.8	2.13	0.34	No	24.2	3.34	0.23	No
214	6.91	30.8	2.13	0.34	No	24.2	3.34	0.23	No
215	6.91	30.8	2.13	0.34	No	24.2	3.34	0.23	No
216	6.91	30.8	2.13	0.34	No	24.2	3.34	0.23	No
217	6.91	30.8	2.13	0.33	No	24.2	3.34	0.23	No
218	6.91	30.8	2.13	0.33	No	24.2	3.34	0.23	No
219	6.91	30.8	2.13	0.33	No	24.2	3.34	0.23	No
220	6.91	30.8	2.13	0.32	No	24.2	3.34	0.23	No
221	6.91	30.8	2.13	0.32	No	24.2	3.34	0.23	No
222	6.91	30.8	2.13	0.32	No	24.2	3.34	0.23	No
223	6.91	30.8	2.13	0.32	No	24.2	3.34	0.23	No
224	6.91	30.8	2.13	0.32	No	24.2	3.34	0.23	No
225	6.91	30.8	2.13	0.31	No	24.2	3.34	0.23	No
226	6.91	30.8	2.13	0.31	No	24.2	3.34	0.22	No
227	6.91	30.8	2.13	0.31	No	24.2	3.34	0.22	No
228	6.91	30.8	2.13	0.31	No	24.2	3.34	0.22	No
229	6.91	30.8	2.13	0.30	No	24.2	3.34	0.22	No
230	6.91	30.8	2.13	0.30	No	24.2	3.34	0.22	No
231	6.91	30.8	2.13	0.30	No	24.2	3.34	0.22	No
232	6.91	30.8	2.13	0.30	No	24.2	3.34	0.22	No
233	6.91	30.8	2.13	0.30	No	24.2	3.34	0.22	No
234	6.91	30.8	2.13	0.29	No	24.2	3.34	0.22	No
235	6.91	30.8	2.13	0.29	No	24.2	3.34	0.22	No
236	6.91	30.8	2.13	0.29	No	24.2	3.34	0.22	No
237	6.91	30.8	2.13	0.29	No	24.2	3.34	0.22	No
238	6.91	30.8	2.13	0.29	No	24.2	3.34	0.22	No
239	6.91	30.8	2.13	0.28	No	24.2	3.34	0.22	No
240	6.91	30.8	2.13	0.28	No	24.2	3.34	0.22	No
241	6.91	30.8	2.13	0.28	No	24.2	3.34	0.22	No
242	6.91	30.8	2.13	0.28	No	24.2	3.34	0.22	No
243	6.91	30.8	2.13	0.28	No	24.2	3.34	0.22	No
244	6.91	30.8	2.13	0.28	No	24.2	3.34	0.22	No
245	6.91	30.8	2.13	0.27	No	24.2	3.34	0.21	No
246	6.91	30.8	2.13	0.27	No	24.2	3.34	0.21	No
247	6.91	30.8	2.13	0.27	No	24.2	3.34	0.21	No
248	6.91	30.8	2.13	0.27	No	24.2	3.34	0.21	No
249	6.91	30.8	2.13	0.27	No	24.2	3.34	0.21	No
250	6.91	30.8	2.13	0.27	No	24.2	3.34	0.21	No
251	6.91	30.8	2.13	0.26	No	24.2	3.34	0.21	No
252	6.91	30.8	2.13	0.26	No	24.2	3.34	0.21	No
253	6.91	30.8	2.13	0.26	No	24.2	3.34	0.21	No
254	6.91	30.8	2.13	0.26	No	24.2	3.34	0.21	No
255	6.91	30.8	2.13	0.26	No	24.2	3.34	0.21	No
256	6.91	30.8	2.13	0.26	No	24.2	3.34	0.21	No
257	6.91	30.8	2.13	0.26	No	24.2	3.34	0.21	No
258	6.91	30.8	2.13	0.25	No	24.2	3.34	0.21	No
259	6.91	30.8	2.13	0.25	No	24.2	3.34	0.21	No
260	6.91	30.8	2.13	0.25	No	24.2	3.34	0.21	No
261	6.91	30.8	2.13	0.25	No	24.2	3.34	0.21	No
262	6.91	30.8	2.13	0.25	No	24.2	3.34	0.21	No
263	6.91	30.8	2.13	0.25	No	24.2	3.34	0.21	No
264	6.91	30.8	2.13	0.25	No	24.2	3.34	0.21	No
265	6.91	30.8	2.13	0.25	No	24.2	3.34	0.21	No
266	6.91	30.8	2.13	0.24	No	24.2	3.34	0.20	No
267	6.91	30.8	2.13	0.24	No	24.2	3.34	0.20	No
268	6.91	30.8	2.13	0.24	No	24.2	3.34	0.20	No
269	6.91	30.8	2.13	0.23	No	24.2	3.34	0.20	No
270	6.91	30.8	2.13	0.23	No	24.2	3.34	0.19	No
271	6.91	30.8	2.13	0.23	No	24.2	3.34	0.19	No
272	6.91	30.8	2.13	0.23	No	24.2	3.34	0.19	No
273	6.91	30.8	2.13	0.23	No	24.2	3.34	0.19	No
274	6.91	30.8	2.13	0.23	No	24.2	3.34	0.19	No

Model Element	Summer					Winter			
	Seasonal average pH	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 ?
275	6.91	30.8	2.13	0.23	No	24.2	3.34	0.19	No
276	6.91	30.8	2.13	0.23	No	24.2	3.34	0.19	No
277	6.91	30.8	2.13	0.22	No	24.2	3.34	0.19	No
278	6.91	30.8	2.13	0.22	No	24.2	3.34	0.19	No
279	6.91	30.8	2.13	0.22	No	24.2	3.34	0.19	No
280	6.91	30.8	2.13	0.22	No	24.2	3.34	0.19	No
281	6.91	30.8	2.13	0.22	No	24.2	3.34	0.19	No
282	6.91	30.8	2.13	0.22	No	24.2	3.34	0.19	No
283	6.91	30.8	2.13	0.22	No	24.2	3.34	0.19	No
284	6.91	30.8	2.13	0.22	No	24.2	3.34	0.19	No
285	6.91	30.8	2.13	0.22	No	24.2	3.34	0.19	No
286	6.91	30.8	2.13	0.22	No	24.2	3.34	0.19	No
287	6.91	30.8	2.13	0.22	No	24.2	3.34	0.19	No
288	6.91	30.8	2.13	0.21	No	24.2	3.34	0.19	No
289	6.91	30.8	2.13	0.21	No	24.2	3.34	0.19	No
290	6.91	30.8	2.13	0.21	No	24.2	3.34	0.19	No
291	6.91	30.8	2.13	0.21	No	24.2	3.34	0.19	No
292	6.91	30.8	2.13	0.21	No	24.2	3.34	0.19	No
293	6.91	30.8	2.13	0.21	No	24.2	3.34	0.19	No
294	6.91	30.8	2.13	0.21	No	24.2	3.34	0.19	No
295	6.91	30.8	2.13	0.21	No	24.2	3.34	0.19	No
296	6.91	30.8	2.13	0.21	No	24.2	3.34	0.19	No
297	6.91	30.8	2.13	0.21	No	24.2	3.34	0.19	No
298	6.91	30.8	2.13	0.21	No	24.2	3.34	0.18	No
299	6.91	30.8	2.13	0.21	No	24.2	3.34	0.18	No
300	6.91	30.8	2.13	0.21	No	24.2	3.34	0.18	No
301	6.91	30.8	2.13	0.21	No	24.2	3.34	0.18	No
302	6.91	30.8	2.13	0.21	No	24.2	3.34	0.18	No
303	6.91	30.8	2.13	0.21	No	24.2	3.34	0.18	No
304	6.91	30.8	2.13	0.21	No	24.2	3.34	0.18	No
305	6.91	30.8	2.13	0.21	No	24.2	3.34	0.18	No
306	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
307	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
308	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
309	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
310	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
311	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
312	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
313	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
314	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
315	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
316	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
317	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
318	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
319	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
320	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
321	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
322	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
323	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
324	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
325	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
326	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
327	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
328	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
329	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
330	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
331	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
332	6.91	30.8	2.13	0.20	No	24.2	3.34	0.18	No
333	6.91	30.8	2.13	0.19	No	24.2	3.34	0.18	No
334	6.91	30.8	2.13	0.19	No	24.2	3.34	0.18	No
335	6.91	30.8	2.13	0.19	No	24.2	3.34	0.18	No
336	6.91	30.8	2.13	0.19	No	24.2	3.34	0.18	No
337	6.91	30.8	2.13	0.19	No	24.2	3.34	0.18	No

Model Element	Summer					Winter			
	Seasonal average pH	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 ?
338	6.91	30.8	2.13	0.19	No	24.2	3.34	0.18	No
339	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
340	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
341	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
342	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
343	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
344	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
345	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
346	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
347	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
348	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
349	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
350	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
351	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
352	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
353	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
354	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
355	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
356	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
357	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
358	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
359	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
360	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No
361	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
362	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
363	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
364	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
365	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
366	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
367	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
368	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
369	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
370	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
371	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
372	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
373	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
374	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
375	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
376	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
377	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
378	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
379	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
380	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
381	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
382	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
383	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
384	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
385	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
386	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
387	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
388	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
389	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
390	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
391	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
392	6.91	30.8	2.13	0.18	No	24.2	3.34	0.16	No
393	6.91	30.8	2.13	0.17	No	24.2	3.34	0.16	No
394	6.91	30.8	2.13	0.17	No	24.2	3.34	0.16	No
395	6.91	30.8	2.13	0.17	No	24.2	3.34	0.16	No
396	6.91	30.8	2.13	0.17	No	24.2	3.34	0.16	No
397	6.91	30.8	2.13	0.17	No	24.2	3.34	0.16	No
398	6.91	30.8	2.13	0.17	No	24.2	3.34	0.16	No
399	6.91	30.8	2.13	0.17	No	24.2	3.34	0.15	No
400	6.91	30.8	2.13	0.17	No	24.2	3.34	0.15	No

Model Element	Summer					Winter			
	Seasonal average pH	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 ?
401	6.91	30.8	2.13	0.17	No	24.2	3.34	0.15	No
402	6.91	30.8	2.13	0.17	No	24.2	3.34	0.15	No
403	6.91	30.8	2.13	0.17	No	24.2	3.34	0.15	No
404	6.91	30.8	2.13	0.17	No	24.2	3.34	0.15	No
405	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
406	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
407	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
408	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
409	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
410	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
411	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
412	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
413	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
414	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
415	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
416	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
417	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
418	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
419	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
420	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
421	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
422	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
423	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
424	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
425	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
426	6.91	30.8	2.13	0.15	No	24.2	3.34	0.15	No
427	6.91	30.8	2.13	0.15	No	24.2	3.34	0.15	No
428	6.91	30.8	2.13	0.15	No	24.2	3.34	0.15	No
429	6.91	30.8	2.13	0.15	No	24.2	3.34	0.15	No
430	6.91	30.8	2.13	0.15	No	24.2	3.34	0.15	No
431	6.91	30.8	2.13	0.15	No	24.2	3.34	0.15	No
432	6.91	30.8	2.13	0.15	No	24.2	3.34	0.15	No
433	6.91	30.8	2.13	0.15	No	24.2	3.34	0.15	No
434	6.91	30.8	2.13	0.15	No	24.2	3.34	0.15	No
435	6.91	30.8	2.13	0.15	No	24.2	3.34	0.15	No
436	6.91	30.8	2.13	0.15	No	24.2	3.34	0.15	No
437	6.91	30.8	2.13	0.15	No	24.2	3.34	0.15	No
438	6.91	30.8	2.13	0.15	No	24.2	3.34	0.15	No
439	6.91	30.8	2.13	0.14	No	24.2	3.34	0.15	No
440	6.91	30.8	2.13	0.14	No	24.2	3.34	0.15	No
441	6.91	30.8	2.13	0.14	No	24.2	3.34	0.15	No
442	6.91	30.8	2.13	0.14	No	24.2	3.34	0.15	No
443	6.91	30.8	2.13	0.14	No	24.2	3.34	0.15	No
444	6.91	30.8	2.13	0.37	No	24.2	3.34	0.15	No
445	6.91	30.8	2.13	0.33	No	24.2	3.34	0.15	No
446	6.91	30.8	2.13	0.29	No	24.2	3.34	0.15	No
447	6.91	30.8	2.13	0.26	No	24.2	3.34	0.15	No
448	6.91	30.8	2.13	0.24	No	24.2	3.34	0.15	No
449	6.91	30.8	2.13	0.22	No	24.2	3.34	0.15	No
450	6.91	30.8	2.13	0.20	No	24.2	3.34	0.15	No
451	6.91	30.8	2.13	0.19	No	24.2	3.34	0.15	No
452	6.91	30.8	2.13	0.18	No	24.2	3.34	0.15	No
453	6.91	30.8	2.13	0.17	No	24.2	3.34	0.15	No
454	6.91	30.8	2.13	0.17	No	24.2	3.34	0.15	No
455	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
456	6.91	30.8	2.13	0.16	No	24.2	3.34	0.15	No
457	6.91	30.8	2.13	0.15	No	24.2	3.34	0.15	No
458	6.91	30.8	2.13	0.28	No	24.2	3.34	0.18	No
459	6.91	30.8	2.13	0.25	No	24.2	3.34	0.18	No
460	6.91	30.8	2.13	0.23	No	24.2	3.34	0.18	No
461	6.91	30.8	2.13	0.21	No	24.2	3.34	0.18	No
462	6.91	30.8	2.13	0.20	No	24.2	3.34	0.17	No
463	6.91	30.8	2.13	0.19	No	24.2	3.34	0.17	No

Model Element	Summer					Winter			
	Seasonal average pH	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 ?
464	6.91	30.8	2.13	0.18	No	24.2	3.34	0.17	No
465	6.91	30.8	2.13	0.17	No	24.2	3.34	0.17	No
466	6.91	30.8	2.13	0.16	No	24.2	3.34	0.17	No
467	6.91	30.8	2.13	0.16	No	24.2	3.34	0.17	No
468	6.91	30.8	2.13	0.15	No	24.2	3.34	0.17	No

Number of elements with toxicity = 0 Number of elements with toxicity = 0

FILE: R:\PROJECTS\2110-616\TECH\LA-QUAL\IATT LAKE AND BAYOU RIGOLETTE\NH3_TOXICITY-REV.XLS