FINAL

BIG CREEK WATERSHED TMDL
FOR BIOCHEMICAL OXYGEN-DEMANDING SUBSTANCES

SUBSEGMENTS 101506

SURVEYED JUNE 5 – 8, 2006

TMDL REPORT

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EXECUTIVE SUMMARY

This report presents the results of a watershed based, calibrated modeling analysis of Big Creek. The modeling was conducted to establish a TMDL for biochemical oxygen-demanding pollutants for the Big Creek watershed. The model extends from just west of Highway 115 to just below Camel's Slough. Big Creek includes Cainey Bayou as a tributary. Big Creek is in the Red River Basin and this study includes Water Quality Subsegment 101506. The area along Big Creek is sparsely populated with camps along the northern bank and land use is primarily wetlands.

There are seven permitted dischargers located within this subsegment. A discharger listing with an inventory is located in Table 2. These dischargers are too far away from the main stem to have any significant impact. In these situations, limits for these facilities are generally set by state policy. These dischargers are accounted for as nonpoint loading through the process of calibration. Therefore, the limits for these facilities will remain the same and will continue to be permitted using state policy.

Input data for the calibration model was developed from data collected during the June 2006 intensive survey; data collected by LDEQ monitoring stations in the watershed; USGS drainage area and low flow publications; and data garnered from several previous LDEQ studies on nonpoint source loadings. The nonpoint source loads included nonpoint loading not associated with flow. A satisfactory calibration was achieved for the main stem. For the projection models, data was taken from ambient temperature records. The Louisiana Total Maximum Daily Load Technical Procedures, Revision 9, have been followed in this study.

The various spreadsheets that were used in conjunction with the modeling program may be found in the appendices. Projections were adjusted to meet the dissolved oxygen criteria by reducing total nonpoint source loads.

Modeling was limited to low flow scenarios for both the calibration and the projections since the constituent of concern was dissolved oxygen and the available data was limited to low flow conditions. The model used was LAQUAL, a modified version of QUAL-TX, which has been adapted to address specific needs of Louisiana waters.

Big Creek, Subsegment 101506, was on the 2004 303(d) list. Subsegment 101506 is found to be "not supporting" its designated use of Fish and Wildlife Propagation. Subsegment 101506 is found to be "supporting" its designated uses of Primary and Secondary Recreation. Big Creek was subsequently scheduled for TMDL development with other listed waters in the Red River Basin. The suspected causes of impairment are low dissolved oxygen. The suspected sources are unknown.

This TMDL establishes load limitations for oxygen-demanding substances and goals for reduction of those pollutants. LDEQ's position, as supported by the declaratory ruling issued by Secretary Givens in response to the lawsuit regarding water quality criteria for nutrients (Sierra Club v. Givens, 710 So.2d 249 (La. App. 1st Cir. 1997), writ denied, 705 So.2d 1106 (La. 1998), is that when oxygen-demanding substances are controlled and limited in order to ensure that the dissolved oxygen criterion is supported, nutrients are also controlled and limited. The implementation of this TMDL through wastewater discharge permits and implementation of best management practices to control and reduce

runoff of soil and oxygen-demanding pollutants from nonpoint sources in the watershed will also control and reduce the nutrient loading from those sources.

A calibrated water quality model for the watershed was developed and projections were modeled to quantify the non-point source load reductions which would be necessary in order for Big Creek, subsegment 101506 to comply with its established water quality standards and criteria. This report presents the results of that analysis.

The results of the projection modeling for subsegment 101506 show that the water quality standard of 5.0 mg/l for dissolved oxygen can be maintained during the summer critical season with an 80% reduction in nonpoint loading. The minimum DO is 5.19 mg/l. The reference stream used to establish background conditions was Kisatchie Bayou.

Table 1. Total Maximum Daily Load (Sum of UCBOD[1], UNBOD, and SOD)

ALLOCATION	**SUMMER**		**WINTER**	
	% Reduction Required	**(MAR-NOV) (lbs/day)**	**% Reduction Required**	**(DEC-FEB) (lbs/day)**
Point Source WLA****		0		0
Point Source MOS****		0		0
Natural Nonpoint Loads	80	3,072	80	2,935
Manmade Nonpoint Source LA	80	3,042	80	2,875
Manmade Nonpoint Source Reserve MOS(20%)	80	761	80	719
TMDL		6,875		6,529

***Note1:** UCBOD as stated in this allocation is Ultimate CBOD.
UCBOD to $CBOD_5$ ratio = 2.3 for all treatment levels
Permit allocations are generally based on $CBOD_5$***

****Note 2:** The Point Source wasteload allocation and margin of safety in the above table applies only to the modeled portion of Big Creek and is not applicable to the rest of subsegment 101506. Proposed dischargers to the modeled portion of Big Creek may request a reevaluation of the TMDL to allow for their discharge. All other point sources in subsegment 101506 will be allowed to discharge on the basis of State Policy Limits. The residual point source impact of these small to remote sources to the modeled portion of Big Creek is already included in the man-made non-point source load allocation and the man-made non-point source MOS.****

The results of the projection modeling for subsegment 101506 show that the water quality standard of 5.0 mg/l for dissolved oxygen can be maintained during the winter critical season with the same 80% reduction of nonpoint loading. The minimum DO is 6.45 mg/l in subsegment 101506. The TMDL is presented in Table 1. A summary of the point sources is presented in Table 2.

The high reduction in the total nonpoint loading, indicates that the current criterion for subsegment 101506 is inappropriate. A reassessment of the dissolved oxygen criteria for this subsegment is recommended.

LDEQ will work with other agencies such as local Soil Conservation Districts to implement agricultural best management practices in the watershed through the 319 programs. LDEQ will also continue to monitor the waters to determine whether standards are being attained.

In accordance with Section 106 of the Federal Clean Water Act and under the authority of the Louisiana Environmental Quality Act, the LDEQ has established a comprehensive program for monitoring the quality of the state's surface waters. The LDEQ Surveillance Section collects surface water samples at various locations, utilizing appropriate sampling methods and procedures for ensuring the quality of the data collected. The objectives of the surface water monitoring program are to determine the quality of the state's surface waters, to develop a long-term data base for water quality trend analysis, and to monitor the effectiveness of pollution controls. The data obtained through the surface water monitoring program is used to develop the state's biennial 305(b) report (*Water Quality Inventory*) and the 303 (d) list of impaired waters. This information is also utilized in establishing priorities for the LDEQ nonpoint source program.

The LDEQ is continuing to implement a watershed approach to the surface water quality monitoring. In 2004 a four year sampling cycle replaced the previous five year cycle. Approximately one quarter of the states watersheds will be sampled in each year so that all of the states watersheds will be sampled within the four year cycle. This will allow the LDEQ to determine whether there has been any improvement in water quality following implementation of the TMDLs. As the monitoring results are evaluated at the end of each year, waterbodies may be
added to or removed from the 303(d) list.

Table 2. 101506 Discharger Inventory

							MONTHLY AVERAGE CONCENTRATION LIMITS		MONTHLY AVERAGE MASS LIMITS		
FACILITY	FILE No.	NPDES	OUTFALL DESCRIP-TION	FACILITY TYPE	RECEIVING WATER	EXPECTED FLOW GPD	BOD5/ CBOD5, mg/L	NH_3-N, mg/L	BOD, lbs./day	NH_3-N, lbs./day	MODELING COMMENTS
Texas Gas Trans. Corp Pineville Compressor Station	3120	LA0070041	Package Sewage Treatment Plant	Compressor Station	Unnamed Ditch, thence into Horsepen Creek, thence into Big Creek	1,000	30	15	0.025	0.125	Not Modeled - Too far from mainstem
Harmony Hills Subdivision	42992	LAG560122	Sewage Treatment Plant	Subdivision	Unnamed Ditch, thence into Dyson Creek, thence into Big Creek, thence into Saline Lake	40,000	20	10	6.678	3.339	Not Modeled - Too far from mainstem
Cedar Crest Subdivision	94619	LAG541134	3 Cell Oxidation Pond	Subdivision	Dyson Creek, thence into Big Creek	22,000	30	15	5.509	2.755	Not Modeled - Too far from mainstem
Country Living RV Campground	42967	LAG530448	Septic tank, thence to a 1000 GPD mechanical plant thence to discharge pipe	RV Campground	Overland flow to a highway ditch thence to Dyson Creek, thence to Big Creek	1,875	30	15	0.047	0.235	Not Modeled - Too far from mainstem
Belgards Steves Lake Marina	87343	LAG531124	1500 GPD Mechanical Treatment Plant	Marina	Stevenson Lake	2,550	30	15	0.639	0.319	Not Modeled - Too far from mainstem
Cenla Mobile Home Park	84018	LAG540977	Oxidation Pond for Mobile Home Park	Mobile Home Park	Dyson Creek thence into Big Creek	19,500	30	15	4.883	2.441	Not Modeled - Too far from mainstem
Deville Car Wash	86012	LAG750332	Car Wash Wastewater	Car Wash	Local Drainage, thence into Island Bayou	Report	30	15			Not Modeled - Too far from mainstem

TABLE OF CONTENTS

EXECUTIVE SUMMARY ii
LIST OF TABLES viii
LIST OF FIGURES viii
Introduction 1
2. Study Area Description 1
2.1 General Information 1
2.2 Water Quality Standards 2
2.3 Wastewater Discharges 5
2.4 Water Quality Conditions/Assessment 5
2.5 Prior Studies 5
3. Documentation Calibration Model 5
3.1 Program Description 5
3.2 Input Data Documentation 9
3.2.1 Model Schematics and Maps 10
3.2.2 Model Options, Data Type 2 10
3.2.3 Temperature Correction of Kinetics, Data Type 4 10
3.2.4 Reach Identification Data, Data Type 8 10
3.2.5 Advective Hydraulic Coefficients, Data Type 9 11
3.2.6 Dispersive Hydraulic Coefficients, Data Type 10 11
3.2.7 Initial Conditions, Data Type 11 12
3.2.8 Reaeration Rates, Data Type 12 13
3.2.9 Sediment Oxygen Demand, Data Type 12 13
3.2.10 Carbonaceous BOD Decay and Settling Rates, Data Type 12 13
3.2.11 Nitrogenous BOD Decay and Settling Rates, Data Type 15 14
3.2.12 Incremental Conditions, Data Types 16, 17, and 18 14
3.2.13 Nonpoint Sources, Data Type 19 14
3.2.14 Headwaters, Data Types 20, 21, and 22 14
3.2.15 Wasteloads, Data Types 23, 24, and 25 14
3.2.16 Boundary Conditions, Data Type 27 14
3.3 Model Discussion and Results 15
4. Water Quality Projections 15
4.1 Critical Conditions, Seasonality and Margin of Safety 15
4.2 Input Data Documentation 17
4.2.1 Model Options, Data Type 2 18
4.2.2 Temperature Correction of Kinetics, Data Type 4 18
4.2.3 Reach Identification Data, Data Type 8 18
4.2.4 Advective Hydraulic Coefficients, Data Type 9 18
4.2.5 Initial Conditions, Data Type 11 18
4.2.6 Reaeration Rates, Carbonaceous BOD Decay and Settling Rates, Nitrogenous BOD Decay and Settling Rates, Data Type 12 and 15 18
4.2.7 Incremental Conditions, Data Types 16, 17, and 18 18
4.2.8 Sediment Oxygen Demand, Nonpoint Sources, Headwaters, Wasteloads, Data Type 12, 19, 20, 21, 22, 24, 25, and 26 18
4.2.12 Boundary Conditions, Data Type 27 20
4.3 Model Discussion and Results 20
4.3.1 No-Load Projection 20

4.3.2 Summer Projection 21
4.3.3 Winter Projection 22
4.4 Calculated TMDL, WLAs and Las 23
4.4.1 Outline of TMDL Calculations 23
4.4.2 Big Creek Subsegment 101506 TMDL 24
5. Sensitivity Analysis 25
6. Conclusions 26
7. References 28
8. Appendices 28
Appendix A – Detailed TMDL Analysis 29
Appendix A1 – Summer TMDL Summary 30
Appendix A2 – Winter TMDL Summary 32
Appendix B – Calibration Model Input and Output Data Sets 34
Appendix B1 – Calibration Output Graphs and Input, Overlay, and Output Files 35
Appendix B2 – Calibration Justification 67
Appendix C - Calibration Model Development 76
Appendix C1 – Vector Diagram 77
Appendix C2 – Reach Setup 79
Appendix C3 – Calibration Loading 81
Appendix C4 – Critical Flow Calculations 83
Appendix D – Projection Model Input and Output Data Sets 85
Appendix D1 –Summer Output Graphs and Input, Overlay, and Output Files 86
Appendix D2 – Summer Justifications 107
Appendix D3 – Winter Output Graphs and Input, Overlay, and Output Files 116
Appendix D4 - Winter Justifications 137
Appendix D5 – Summer No Man-Made Loading Input, Overlay, and Output Files 146
Appendix D6 - Summer No-Man Made Load Justifications 167
Appendix E - Projection Model Development 175
Appendix E1 – Summer Loading 176
Appendix E2 – Winter Loading 178
Appendix E3 – Summer No Man-Made Loading 180
Appendix F – Survey Data Measurements and Analysis Results 182
Appendix F1 – Water Quality Data 183
Appendix F2 – Cross Sections and Discharge Measurements 195
Appendix F3 – Field Notes 202
Appendix F4 – Continuous Monitor 241
Appendix F5 – BOD Calculations 283
Appendix F6– Dispersion and Dye Data 291
Appendix G– Historical and Ambient Data 313
Appendix G1 – Ambient Data 314
Appendix G2 – Land Use Summary 316
Appendix G3 – 303(d) Report 318
Appendix H – Maps and Diagrams 320
Appendix H1- Overview map 321
Appendix H2 – Land Use Map 323
Appendix H3 – La Precipitation Map 325

Appendix I – Sensitivity Analysis 327
Appendix I1 – Sensitivity Output Graphs 328
Appendix I2 – Sensitivity Output Data Set 337

LIST OF TABLES

Table 1. Total Maximum Daily Load (Sum of UCBOD[1], UNBOD, and SOD) iii
Table 2. 101506 Discharger Inventory v
Table 3. Land Uses in Segment 101506 2
Table 4. Water Quality Numerical Criteria and Designated Uses 2
Table 5. Discharger Inventory for Big Creek Subsegment 101506 7
Table 6. Big Creek Range of DO Cycle 13
Table 7. Total Maximum Daily Load (Sum of UCBOD[1], UNBOD, and SOD) 25
Table 8. Summary of Calibration Model Sensitivity Analysis 26

LIST OF FIGURES

Figure 1. Model Layout 3
Figure 2. Map of Study Area 4
Figure 3. Subsegment 101506 Discharger Location 6
Figure 4. Dispersion Calibration 12
Figure 5. Calibration Model Dissolved Oxygen versus River Kilometer 16
Figure 6. No Load Scenario with 100% Removal of Man-Made NPS Loads 21
Figure 7. Summer Projection at 80% Removal of Man-Made NPS Loads 22
Figure 8. Winter Projection at 80% Removal of Man-Made NPS Loads 23

Introduction

Big Creek, subsegment 101506, of the Red River Basin is listed on the 2004 303(d) list. The subsegment is listed as not supporting Fish and Wildlife propagation. It is, however supporting its designated uses of Primary Contact Recreation and Secondary Contact Recreation. The suspected causes of impairment are low DO. The suspected sources are unknown. Because of the impairment, this subsegment requires the development of a total maximum daily load (TMDL) for oxygen demand substances. A calibrated water quality model for the Big Creek, subsegment 101506 watershed was developed and projections for current dissolved oxygen standards were run to quantify the wasteload required to meet established dissolved oxygen criteria. This report presents the model development and results.

2. Study Area Description

2.1 General Information

Red River Basin

"The Red River has its origin in eastern New Mexico and flows across portions of Texas, Oklahoma and Arkansas before entering northwestern Louisiana. The river flows south to Shreveport, where it turns southeast and flows for approximately 160 miles to its junction with the Atchafalaya River. From the Arkansas state line to Alexandria, the Red River is contained within high banks which range from 20 to 35 feet above low water level. Below Alexandria, the river flows through a flat alluvial plain which is subject to backwater flooding during periods of high water. The Sabine River Basin lies to the southwest of the Red River Basin, and the Ouachita River Basin lies to the east. The Calcasieu, Vermilion – Teche, and Atchafalaya River Basins lie south of the Red River Basin. The Red River drains approximately 7,760 squares miles within Louisiana." (LA DEQ, 1996)

The area along Big Creek is sparsely populated with camps along the northern bank and land use is primarily wetlands. This TMDL addresses Big Creek from just west of Highway 115 to the confluence of Saline Lake. There is an abundant supply of rooted macrophytes and floating macrphytes located all along the main stem. A detailed land cover map of Subsegment 101506 is also included in Appendix H2. Average annual precipitation in the segment, based on the nearest Louisiana Climatic Station, is 58 inches based on a 30-year period of record (LSU, 1999). There is a Louisiana average annual precipitation map located in Appendix H3.

Table 3. Land Uses in Segment 101506

Land Type	Acres 101506	Percent Land use 101506
Wetland Forest Deciduous	70,344.27	61.07
Agriculture/Cropland/Grassland	27,935.42	24.25
Water	7,838.96	6.81
Vegetated Urban	4,705.87	4.09
Fresh Marsh	2,068.94	1.80
Wetland S/S Deciduous	781.49	0.68
Upland Forest Mixed	596.02	0.52
Non-Vegetated Urban	408.32	0.35
Upland Barren	188.59	0.16
Upland S/S Mixed	167.24	0.15
Upland Forest Deciduous	112.09	0.10
Wetland Barren	33.36	0.03

2.2 Water Quality Standards

The Water Quality criteria and designated uses for Big Creek Watershed are shown in Table 4. As noted in the table, Big Creek, Subsegment 101506 has a year round dissolved oxygen standard of 5.0 mg/L.

Table 4. Water Quality Numerical Criteria and Designated Uses

Parameter	Value
Designated Uses	A B C
DO, mg/L	5.0
Cl, mg/L	45
SO_4, mg/L	10
pH	6.0 – 8.5
BAC	1*
Temperature, deg Celsius	32
TDS, mg/L	165

USES: A – primary contact recreation; B - secondary contact recreation; C – propagation of fish and wildlife; D – drinking water supply; E – oyster propagation; F – agriculture; G – outstanding natural resource water; L – limited aquatic life and wildlife use.

*Note 1 – 200 colonies/100mL maximum log mean and no more than 25% of samples exceeding 400 colonies/100mL for the period May through October; 1,000 colonies/100mL maximum log mean and no more than 25% of samples exceeding 2,000 colonies/100mL for the period November through April.

Figure 1. Model Layout

Big Creek Model Layout
Subsegment 101506

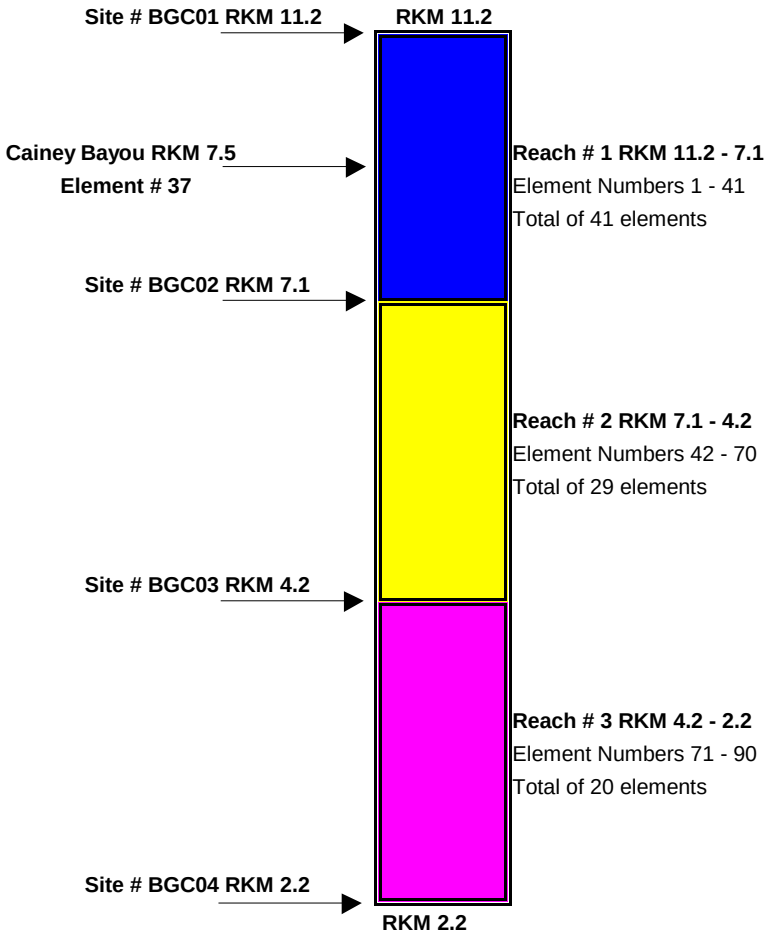
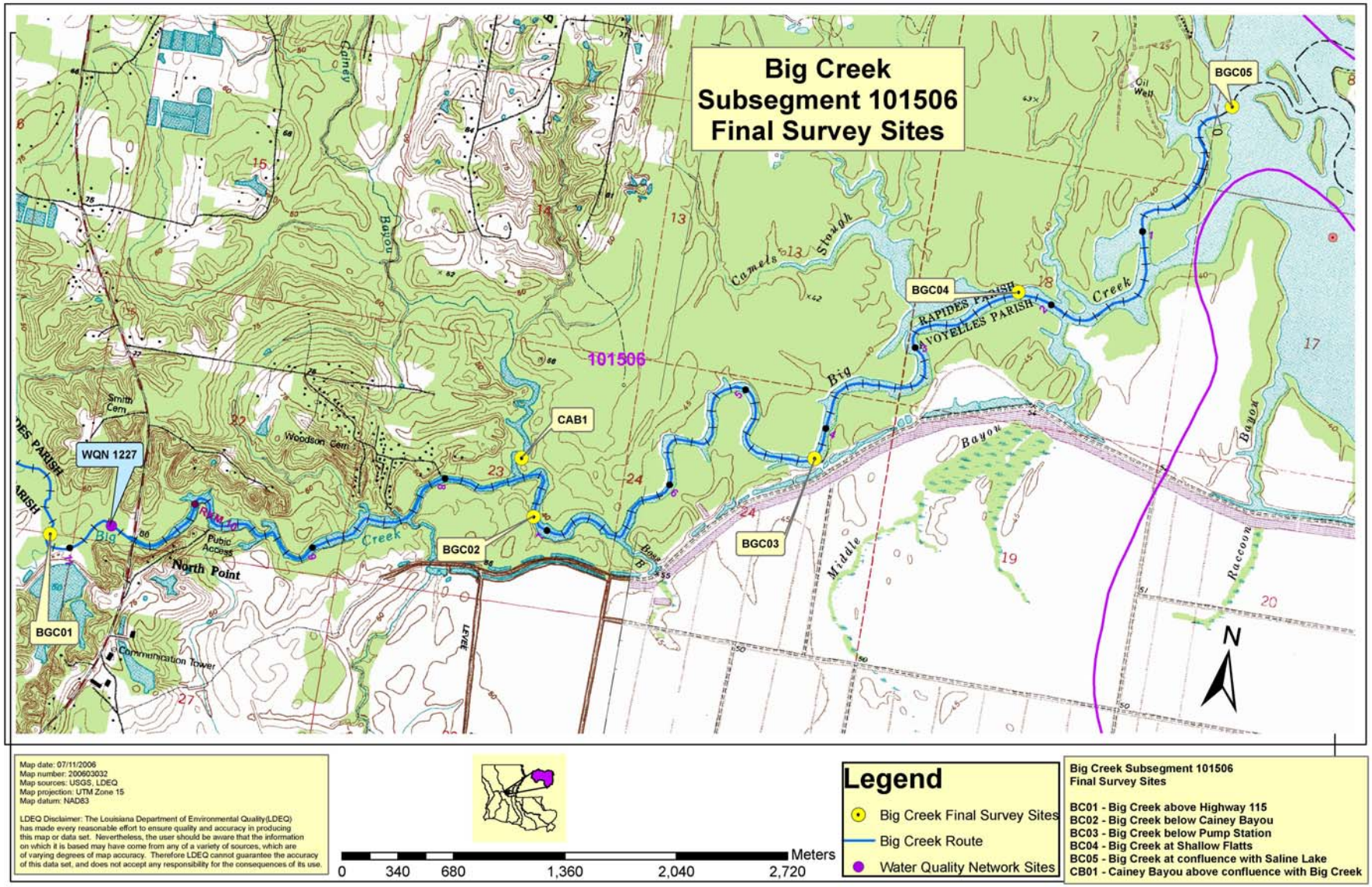


Figure 2. Map of Study Area



2.3 Wastewater Discharges

There are seven permitted dischargers located within this subsegment. A discharger listing with an inventory is located in Table 5. These dischargers are too far away from the main stem to have any significant impact. Figure 3 is a map of the subsegment detailing the locations of the dischargers along with the location of Big Creek. In these situations, limits for these facilities are generally set by state policy. These dischargers are accounted for as nonpoint loading through the process of calibration. Therefore, the limits for these facilities will remain the same and will continue to be permitted using state policy.

2.4 Water Quality Conditions/Assessment

Big Creek, subsegment 101506, of the Red River Basin is listed on the 2004 303(d) list. This subsegment is listed as not supporting Fish and Wildlife Propagation. This subsegment is supporting its designated uses of Primary and Secondary Contact Recreation. The suspected cause of impairment is low dissolved oxygen. The suspected sources are unknown. Because of the impairment, this subsegment requires the development of a total maximum daily load (TMDL) for oxygen demanding substances.

2.5 Prior Studies

LDEQ has one monthly water quality sampling station on Big Creek. LDEQ Water Quality Site 1227, Big Creek at North Point, LA has a period of record from January 2002 to December 2002 and April 2005 to September 2005. Data collected during the Eularian survey conducted in June 2006, included discharge data, cross-section data, field in-situ data, continuous monitor data, and lab water quality data. This data was used to establish the input for the model calibration and is presented in Appendix F.

3. Documentation Calibration Model

3.1 Program Description

"Simulation models are used extensively in water quality planning and pollution control. Models are applied to answer a variety of questions, support watershed planning and analysis and develop total maximum daily loads (TMDLs). . . . Receiving water models simulate the movement and transformation of pollutants through lakes, streams, rivers, estuaries, or near shore ocean areas. . . . Receiving water models are used to examine the interactions between loadings and response, evaluate loading capacities (LCs), and test various loading scenarios. . . . A fundamental concept for the analysis of receiving waterbody response to point and nonpoint source inputs is the principle of mass balance (or continuity). Receiving water models typically develop a mass balance for one or more constituents, taking into account three factors: transport through the system, reactions within the system, and inputs into the system." (EPA841-b-97-006, pp. 1-30)

Figure 3. Subsegment 101506 Discharger Location

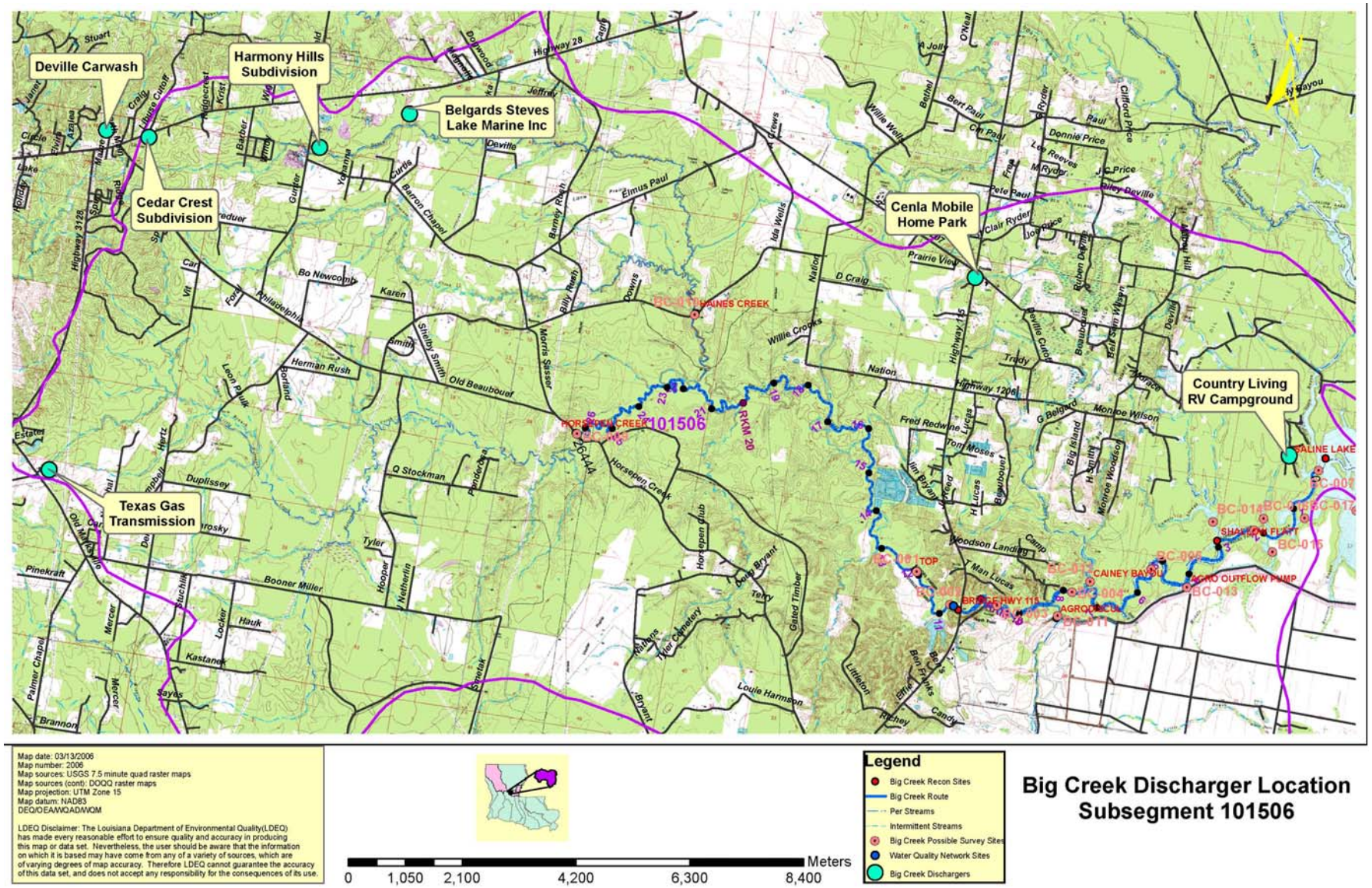


Table 5. Discharger Inventory for Big Creek Subsegment 101506

							MONTHLY AVERAGE CONCENTRATION LIMITS		MONTHLY AVERAGE MASS LIMITS		
FACILITY	FILE No.	NPDES	OUTFALL DESCRIP-TION	FACILITY TYPE	RECEIVING WATER	EXPECTED FLOW GPD	BOD5/ CBOD5, mg/L	NH_3-N, mg/L	BOD, lbs./day	NH_3-N, lbs./day	MODELING COMMENTS
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Deville Car Wash	86012	LAG750332	Car Wash Wastewater	Car Wash	Local Drainage, thence into Island Bayou	Report	30	15			Not Modeled - Too far from mainstem

The model used for this TMDL was LA-QUAL, a steady-state one-dimensional water quality model. LA-QUAL history dates back to the QUAL-I model developed by the Texas Water Development Board with Frank D. Masch & Associates in 1970 and 1971. William A. White wrote a original code.

In June, 1972, the United States Environmental Protection Agency awarded Water Resources Engineers, Inc. (now Camp Dresser & McKee) a contract to modify QUAL-I for application to the Chattahoochee-Flint River, the Upper Mississippi River, the Iowa-Cedar River, and the Santee River. The modified version of QUAL-I was known as QUAL-II.

Over the next three years, several versions of the model evolved in response to specific client needs. In March, 1976, the Southeast Michigan Council of Governments (SEMCOG) contracted with Water Resources Engineers, Inc. to make further modifications and to combine the best features of the existing versions of QUAL-II into a single model. That became known as the QUAL-II/ SEMCOG version.

Between 1978 and 1984, Bruce L. Wiland with the Texas Department of Water Resources modified QUAL-II for application to the Houston Ship Channel estuarine system. Numerous modifications were made to enable modeling this very large and complex system including the addition of tidal dispersion, lower boundary conditions, nitrification inhibition, sensitivity analysis capability, branching tributaries, and various input/output changes. This model became known as QUAL-TX and was subsequently applied to streams throughout the State of Texas.

In 1999, the Louisiana Department of Environmental Quality and Wiland Consulting, Inc. developed LA-QUAL based on QUAL-TX Version 3.4. The program was converted from a DOS-based program to a Windows-based program with a graphical interface and enhanced graphic output. Other program modifications specific to the needs of Louisiana and the Louisiana DEQ were also made. LA-QUAL is a user-oriented model and is intended to provide the basis for evaluating total maximum daily loads in the State of Louisiana.

The development of a TMDL for dissolved oxygen generally occurs in 3 stages. Stage 1 encompasses the data collection activities. These activities may include gathering such information as stream cross-sections, stream flow, stream water chemistry, stream temperature and dissolved oxygen and various locations on the stream, location of the stream centerline and the boundaries of the watershed which drains into the stream, and other physical and chemical factors which are associated with the stream. Additional data gathering activities include gathering all available information on each facility which discharges pollutants in to the stream, gathering all available stream water quality chemistry and flow data from other agencies and groups, gathering population statistics for the watershed to assist in developing projections of future loadings to the water body, land use and crop rotation data where available, and any other information which may have some bearing on the quality of the waters within the watershed. During Stage 1, any data available from reference or least impacted streams which can be used to gauge the relative health of the watershed is also collected.

Stage 2 involves organizing all of this data into one or more useable forms from which the input data required by the model can be obtained or derived. Water quality samples, field measurements, and

historical data must be analyzed and statistically evaluated in order to determine a set of conditions which have actually been measured in the watershed. The findings are then input to the model. Best professional judgment is used to determine initial estimates for parameters which were not or could not be measured in the field. These estimated variables are adjusted in sequential runs of the model until the model reproduces the field conditions which were measured. In other words, the model produces a value of dissolved oxygen, temperature, or other parameter which matches the measured value within an acceptable margin of error at the locations along the stream where the measurements were actually made. When this happens, the model is said to be calibrated to the actual stream conditions. At this point, the model should confirm that there is an impairment and give some indications of the causes of the impairment. If a second set of measurements is available for slightly different conditions, the calibrated model is run with these conditions to see of the calibration holds for both sets of data. When this happens, the model is said to be verified.

Stage 3 covers the projection modeling which results in the TMDL. The critical conditions of flow and temperature are determined for the waterbody and the maximum pollutant discharge conditions from the point sources are determined. These conditions are then substituted into the model along with any related condition changes which are required to perform worst case scenario predictions. At this point, the loadings from the point and nonpoint sources (increased by an acceptable margin of safety) are run at various levels and distributions until the model output shows that dissolved oxygen criteria are achieved. It is critical that a balanced distribution of the point and nonpoint source loads be made in order to predict any success in future achievement of water quality standards. At the end of Stage 3, a TMDL is produced which shows the point source permit limits and the amount of reduction in man-made nonpoint source pollution which must be achieved to attain water quality standards. The man-made portion of the NPS pollution is estimated from the difference between the calibration loads and the loads observed on reference or least impacted streams.

3.2 Input Data Documentation

Data collected during an intensive survey conducted from June 5 – 8, 2006, was used to establish the input for the model calibration. The data is presented in Appendix F. The flows in each reach and headwater were based on minimum immeasurable flow calculated from the appropriate cross sections.

Field and laboratory water quality data were entered in a spreadsheet for ease of analysis. Upon review of the measured CBOD daily values it became apparent that there were two distinct CBOD components, which had varying ultimate values as well as decay rates and lag times. The first component started its decay almost immediately while the second component had substantial lag times. The total CBOD curve presented in Appendix F5 is the sum of the two first order equations, which were derived using the Microsoft Excel Solver and were based on the measured daily CBOD values. These two CBOD components were modeled separately as CBOD1 and CBOD2 in the LAQUAL model. NBOD simulated organic nitrogen, ammonia nitrogen, and nitrate/nitrite nitrogen. The Louisiana BOD program was applied to the BOD data in a separate spreadsheet and values were computed for each sample taken of ultimate CBOD1, CBOD1 decay rate, CBOD1 lag time, ultimate CBOD2, CBOD2 decay rate, and CBOD2 lag time as well as the NBOD, NBOD decay rate, and NBOD lag time. The survey data was the primary source of the model input data for initial conditions, decay rates, mainstem water temperature, dissolved oxygen loading, headwater temperature, and DO data.

3.2.1 Model Schematics and Maps

A vector diagram of the modeled area is presented in Figure 1 and Appendix C1. The vector diagram shows the locations of survey stations, the reach/element design, and the location of the tributary included in the model. An ARCVIEW map of the stream and subsegment showing river kilometers, survey stations, subsegment boundary and other points of interest are also included in Figure 2 and Appendix H1.

3.2.2 Model Options, Data Type 2

Six constituents were modeled during the calibration process. These were dissolved oxygen, carbonaceous biochemical oxygen demand components 1 and 2, nitrogenous biochemical oxygen demand, chloride, and conductivity. The continuous monitors did show diurnal swings indicative of algal activity. The algae cycle was not modeled; however, the measured chlorophyll A values were included in the initial conditions. This allowed the model to simulate the oxygen production associated with algae without modeling the entire algal cycle. Additionally, a quantity of macrophytes were added to represent their observed presence in the stream.

3.2.3 Temperature Correction of Kinetics, Data Type 4

The temperature values computed are used to correct the rate coefficients in the source/sink terms for the other water quality variables. These coefficients are input at 20 °C and are then corrected to temperature using the following equation:

$$X_T = X_{20} * \text{Theta}^{(T-20)}$$

Where:

X_T = the value of the coefficient at the local temperature T in degrees Celsius
X_{20} = the value of the coefficient at the standard temperature at 20 degrees Celsius
Theta = an empirical constant for each reaction coefficient

In the absence of specified values for data type 4, the model uses default values. A complete listing of these values can be found in the LA-QUAL for Windows User's Manual (LDEQ, 2004). For this model all values used were LAQUAL default values.

3.2.4 Reach Identification Data, Data Type 8

A diagram of the modeled area is presented in Appendix C1. The vector diagram shows the reach/element design and the location of Cainey Bayou. The modeled area is characterized by 6 sample sites. The model starts at just west of Highway 115 and extends to just downstream of Camel's Slough. Beyond this point, the mainstem becomes too wide to determine a distinct channel. This calibrated model includes 3 reaches, 90 elements, one headwater, and one tributary. A digitized map of the stream showing river kilometers, and the June 2006 survey sampling sites are included in Figure 2 and Appendix H1.

3.2.5 Advective Hydraulic Coefficients, Data Type 9

The Leopold equations are used to scale the velocity (U), width (W), and depth (H) of a free flowing stream from a lower value of flow to a higher value or from a higher value of flow to a lower value. Note that the exponents add to one and the coefficients multiply to 1. This is known as the rule of ones. This method is not appropriate for streams which are not dependent entirely on flow such as waterbodies where flow approaches zero, but contain some depth.

$U = aQ^b$ $H = cQ^d$ $W = eQ^f$

$b + d + f = 1$ $(a)(c)(e) = 1$

The Leopold equations presume that the water surface width and average depth of a stream are zero at zero flow. Most Louisiana streams, such as Big Creek, retain a significant width and depth at zero flow. The equations have therefore been modified to allow for a zero flow width and depth. The rule of ones does not apply to the modified equations. The modified Leopold equations are:

$W = aQ^b + c$ $H = dQ^e + f$ $U = gQ^h$

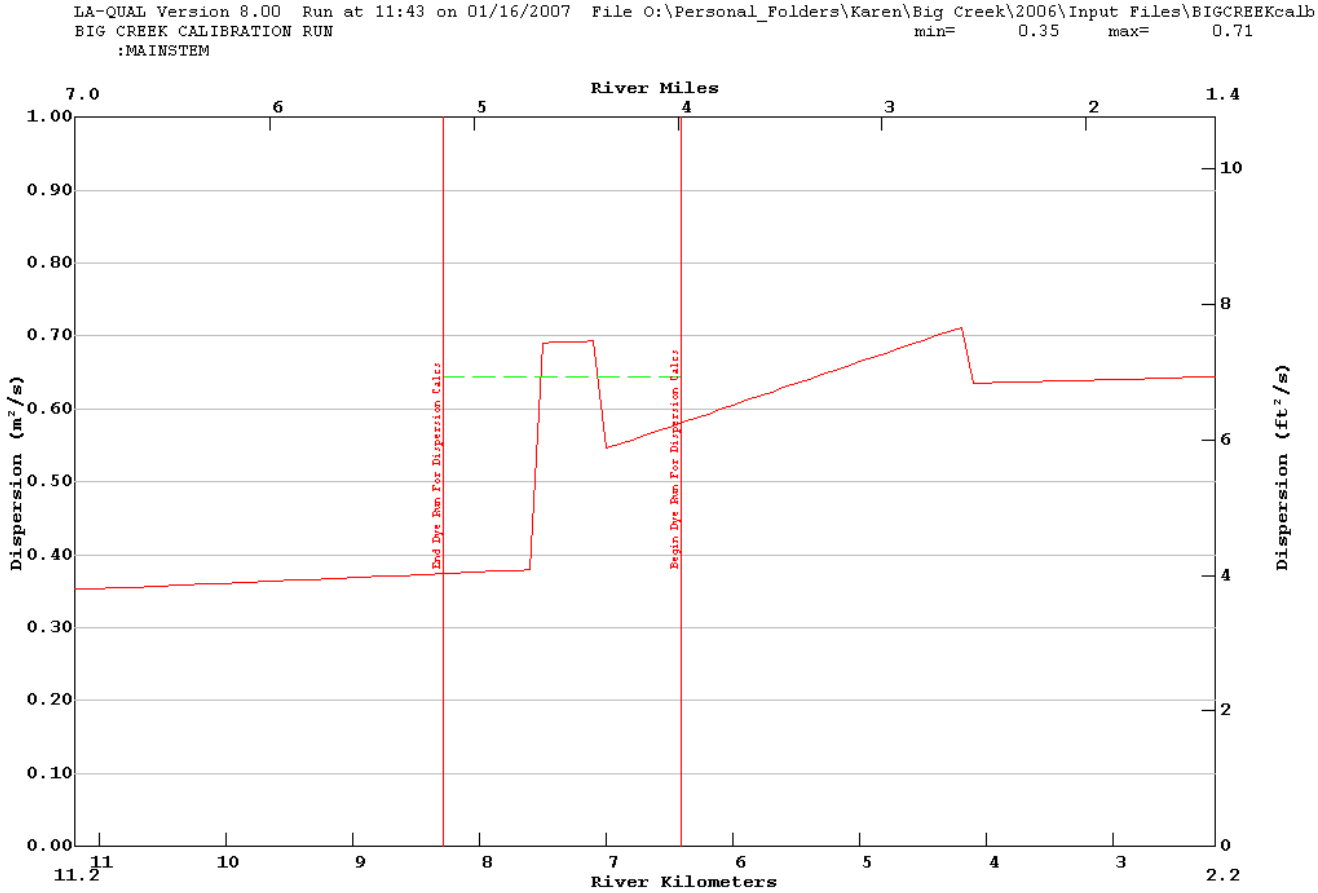
The width and depths were assumed to be independent of flow. Consequently, the modified Leopold coefficients and exponents were not calculated for this model.

3.2.6 Dispersive Hydraulic Coefficients, Data Type 10

The dispersion was estimated based on the dye study. The dye study was conducted using the moving site method. There were four dye runs conducted during this study. Based on the data retrieved the final dye run was determined to be most representative of the stream. This was because the final dye run had the longest run time. The longer time frame gave the dye a longer time to become more uniformly dispersed in the river. The Kd value was determined to be 0.644. All documentation can be found in Appendix F6.

To take into consideration all modes of transport, equation 3, ($D_L = aH^bQ^cV_M{}^d$) in Laqual was used. Using b=5/6, c=0, and d=1 will take into account all modes of transport in the manner of the Tracor and QUAL2E equations. The value for coefficient “a” was calibrated to within the boundaries of the final dye run by setting all other parameters to the previously mentioned values. All documentation can be found in Appendix F6.

Figure 4. Dispersion Calibration



3.2.7 Initial Conditions, Data Type 11

The initial conditions are used to reduce the number of iterations required by the model. The values required for this model were temperature and DO by reach. The input values came from the survey station(s) located closest to the reach.

When the continuous monitoring dissolved oxygen (DO) data for at least one diurnal cycle is available, it is standard practice to calibrate to the mean DO. In this case, a diurnal variation of greater than 2mg/L was encountered. The standard DEQ practice for this is as follows:

1. Calibrate without simulating algal production as follows:

Range of DO cycle	Calibrate
0 – 2 mg/l	Mean DO for one or more full cycles
2 – 9 mg/l	One mg/l over minimum DO
>9 mg/l	0.11*DO cycle over minimum DO

These practices were followed for this model. The DO cycle for each reach fell in the 2-9 mg/l range. The input data and sources are shown in Table 6 and Appendix B2.

Table 6. Big Creek Range of DO Cycle

Big Creek Continuous Monitoring Diurnal Range			
Site	DO, mg/l Minimum Values	DO mg/L Maximum Values	Diurnal Swing
BGC01	1.15	4.86	3.71
BGC02	3.72	8.70	4.98
BGC03	2.20	7.87	5.67
BGC04	1.71	6.72	5.01
BGC05	2.65	6.94	4.29

Chlorophyll a values were also used since the mild effects of algae on the dissolved oxygen concentrations were also simulated with this model. The initial conditions are only a starting point for the model, therefore, all values were set to the measured values. The input data and sources are shown in Appendix B2.

Additionally, field observations indicated the presence of floating and rooted macrophytes. Therefore, a quantity of macrophytes were added to the model for calibration.

3.2.8 Reaeration Rates, Data Type 12

The applicability of the various reaeration equations was examined. The Texas Equation was the most applicable to Big Creek. The input data and sources are shown in Appendix B2.

3.2.9 Sediment Oxygen Demand, Data Type 12

The SOD values were achieved through calibration. The SOD value for each reach is shown in Appendix B2. The values were considered to be reasonable for this type of stream. The conversion ratio of settled CBOD and settled NBOD to SOD was considered to be zero for all reaches.

3.2.10 Carbonaceous BOD Decay and Settling Rates, Data Type 12

The decay rates used were based on the bottle rates from the survey. Review of the measured CBOD daily values revealed two distinct CBOD components, which had varying decay rates and lag times. The first component started its decay almost immediately with decay rates ranging from 0.134 to 0.213 per day. The second component had substantial lag times and decay rates from 0.025 to 0.033 per day. The total CBOD curves presented in Appendix F5 are the sum of the two first order equations, which were derived using the Microsoft Excel Solver and were based on the measured daily CBOD values. These two components were modeled separately as CBOD1 and CBOD2 in the LAQUAL model. The decay and settling rates used for each reach are shown in Appendix F5.

3.2.11 Nitrogenous BOD Decay and Settling Rates, Data Type 15

These rates are labeled NBOD Decay and Settling in the model. The decay rates used were based on the bottle rates from the survey. NBOD decay rates were fairly consistent with main stem rates ranging from 0.071 to 0.220. The decay and settling rates used for each reach are shown in Appendix F5.

3.2.12 Incremental Conditions, Data Types 16, 17, and 18

The incremental conditions were used in the calibration to represent nonpoint source loads associated with flows. It was determined from an evaluation of the water chemistry that groundwater inflow could be assumed. The inflow was based upon minimal flow calculations. At each reach there is an assumption that some of the flow is immeasurable by the current instrumentation. The instrumentation cannot calculate velocities lower than 0.01 ft/sec. Therefore, a maximum immeasurable flow at each reach was computed to be the cross sectional area (ft^2) * 0.01(ft/sec). The data and sources are presented in Appendix F2.

3.2.13 Nonpoint Sources, Data Type 19

Nonpoint source loads which are not associated with a flow are input into this part of the model. These can be most easily understood as resuspended load from the bottom sediments and are modeled as SOD, CBOD1, CBOD2, and NBOD loads. These values are achieved through calibration.

3.2.14 Headwaters, Data Types 20, 21, and 22

There were no headwater flow measurements taken. Thus, the headwater flow was determined by calculating the maximum immeasurable flow at BGC01 from the measured cross section. This value was determined to be 0.1403 cms. The data and sources are presented in Appendix B2.

3.2.15 Wasteloads, Data Types 23, 24, and 25

A facility review was performed on the subsegment and seven permitted dischargers were found to be located in subsegment 101506. The seven dischargers are the Deville Carwash, Cedar Crest Subdivision, Harmony Hills Subdivision, Belgards Steves Lake Marina, Cenla Mobile Home Park, Country Living RV Campground, and Texas Gas Transmission. These dischargers are located too far away from the main stem to have a significant impact on Big Creek. In these situations, limits for these facilities are generally set by state policy. Due to the fact that these facilities have a minimal impact on the named 303(d) listed waterbody, Big Creek, they were not modeled and will remain at their current permit limits and will continue to be permitted by state policy.

3.2.16 Boundary Conditions, Data Type 27

The lower boundary conditions were assumed to be equivalent to the measurements taken at survey station BGC05.

3.3 Model Discussion and Results

The calibration model input and output is presented in Appendix B. The overlay plotting option was used to determine if calibration had been achieved. A plot of the dissolved oxygen concentration versus river kilometer is presented in Figure 3. The calibration points for temperature were calculated based on the average continuous monitor readings. The dissolved oxygen readings at all sites had a diurnal swing of larger than 2 and less than 9. Therefore, the calibration points for dissolved oxygen were based on the minimum DO + 1. Insitu DO readings are also plotted. The calibration points for CBOD1, CBOD2, and NBOD were the measured values from the water quality samples. The calibration points for conductivity were the insitu readings. The calibration points for the chlorides and chlorophyll A were the measured values from the water quality samples.

An adequate calibration was achieved for DO, UCBOD1, UCBOD2, NBOD, Chlorophyll a, chlorides, and conductivity on the main stem. The calibration model shows that during June 2006 survey period, the DO standard of 5 mg/l was not being met in subsegment 101506 in any of the modeled reaches. The calibration model minimum DO on the main stem was 2.15 mg/l.

4. Water Quality Projections

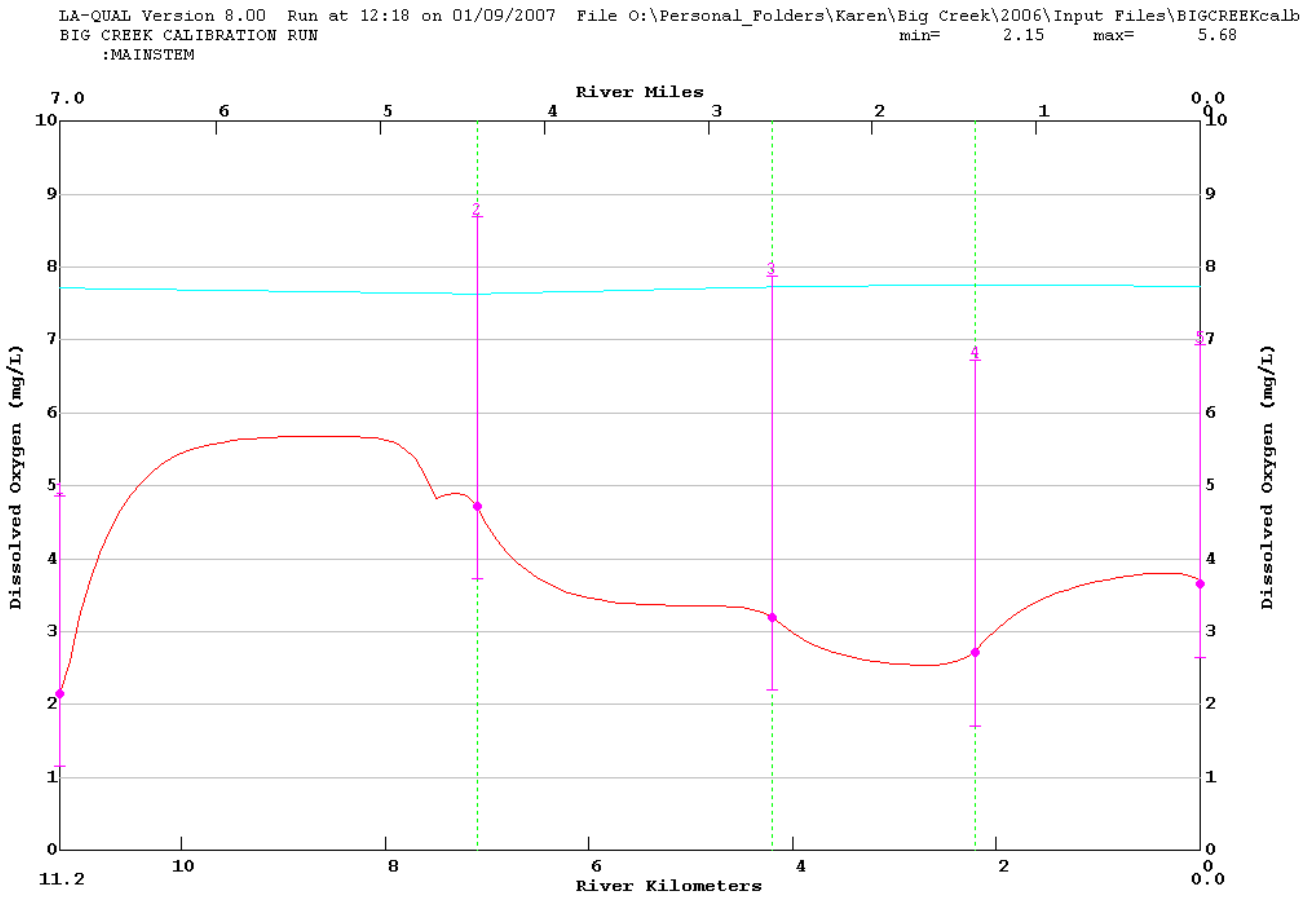
The traditional summer critical projection loading scenario was performed at the current annual DO standard. This scenario was based on reduced total nonpoint loads at summer season critical conditions (ie. 90th percentile seasonal temperatures and summer default flows) in accordance with the LTP. A winter projection was run based on the percent reduction of total nonpoint loads used for summer critical projections. Additionally, a summer no-load projection was performed to emulate background conditions.

4.1 Critical Conditions, Seasonality and Margin of Safety

The Clean Water Act requires the consideration of seasonal variation of conditions affecting the constituent of concern, and the inclusion of a margin of safety (MOS) in the development of a TMDL. For the Big Creek, subsegment 101506 TMDL, an analysis of LDEQ ambient data has been employed to determine critical seasonal conditions and an appropriate margin of safety.

Critical conditions for dissolved oxygen were determined for Big Creek using water quality data from water quality site number 1227 on the LDEQ Ambient Monitoring Network. The 90th percentile temperature for each season and the corresponding 90% of saturation DO was determined. Ambient temperature data, critical temperature and DO saturation determinations are shown in Appendix G1.

Figure 5. Calibration Model Dissolved Oxygen versus River Kilometer



- numbered points indicate survey stations
- vertical lines indicate beginning of reach
- the horizontal line indicates the DO Criterion
- upper plotted line indicates DO saturation
- lower plotted line indicates calibration model output

Graphical and regression analysis techniques have been used by LDEQ historically to evaluate the temperature and dissolved oxygen data from the Ambient Monitoring Network and run-off determinations from the Louisiana Office of Climatology water budget. Since nonpoint loading is conveyed by run-off, this was a reasonable correlation to use. Temperature is strongly inversely proportional to dissolved oxygen and moderately inversely proportional to run-off. Dissolved oxygen and run-off are also moderately directly proportional. The analysis concluded that the critical

conditions for stream dissolved oxygen concentrations were those of negligible nonpoint run-off and low stream flow combined with high stream temperature.

When the rainfall run-off (and non-point loading) and stream flow are high, turbulence is higher due to the higher flow and the temperature is lowered by the run-off. In addition, run-off coefficients are higher in cooler weather due to reduced evaporation and evapotranspiration, so that the high flow periods of the year tend to be the cooler periods. Reaeration rates and DO saturation are, of course, much higher when water temperatures are cooler, but BOD decay rates are much lower. For these reasons, periods of high loading are periods of higher reaeration and dissolved oxygen but not necessarily periods of high BOD decay.

This phenomenon is interpreted in TMDL modeling by assuming that nonpoint loading associated with flows into the stream are responsible for the benthic blanket which accumulates on the stream bottom and that the accumulated benthic blanket of the stream, expressed as SOD and/or resuspended BOD in the calibration model, has reached steady state or normal conditions over the long term and that short term additions to the blanket are off set by short term losses. This accumulated loading has its greatest impact on the stream during periods of higher temperature and lower flow. The manmade portion of the NPS loading is the difference between the calibration load and the reference stream load where the calibration load is higher. The only mechanism for changing this normal benthic blanket condition is to implement best management practices and reduce the amount of nonpoint source loading entering the stream and feeding the benthic blanket.

Critical season conditions were simulated in the Big Creek, subsegment 101506 dissolved oxygen TMDL projection modeling by using the flow guidelines from the LTP, and the 90th percentile temperature.

In reality, the highest temperatures occur in July-August, the lowest stream flows occur in October-November, and the maximum point source discharge occurs following a significant rainfall, i.e., high-flow conditions. The summer projection model is established as if all these conditions happened at the same time. The winter projection model accounts for the seasonal differences in flows and BMP efficiencies. Other conservative assumptions regarding rates and loadings are also made during the modeling process. In addition to the conservative measures, an explicit MOS of 20% was used for all loads to account for future growth, safety, model uncertainty and data inadequacies.

4.2 Input Data Documentation

The LTP states that the flow for summer conditions should be 0.1 cfs or the 7Q10, whichever is greater. A 7Q10 value cannot be determined for Big Creek. Therefore, the summer critical flow used was 0.1 cfs or 0.0028 cms. For winter conditions the LTP default of 1 cfs was used for flow.

Critical conditions include dissolved oxygen, temperature, and flow. Pollutant loading is adjusted in the projection models to meet the dissolved oxygen criteria.

The calibration values were retained for the remaining parameters and used as input values in the summer and winter projections. The model adjusts the input values for SOD, CBODU decay, and NBODU decay based upon the input temperature.

4.2.1 Model Options, Data Type 2

Four constituents were modeled during the projection process. These were dissolved oxygen, the two components of carbonaceous biochemical oxygen demand, and nitrogenous biochemical oxygen demand.

4.2.2 Temperature Correction of Kinetics, Data Type 4

The temperature correction factors specified in the LTP are entered in the model.

4.2.3 Reach Identification Data, Data Type 8

The reach-element design from the calibration was used in the projection modeling.

4.2.4 Advective Hydraulic Coefficients, Data Type 9

The hydraulic coefficients, exponents, and constants determined for the calibration were used in the projection model.

4.2.5 Initial Conditions, Data Type 11

The initial conditions were set to the 90th percentile critical season temperature in accordance with the LTP. The dissolved oxygen values for the initial conditions were set at the stream criteria.

4.2.6 Reaeration Rates, Carbonaceous BOD Decay and Settling Rates, Nitrogenous BOD Decay and Settling Rates, Data Type 12 and 15

The reaeration rate equations, CBOD1 and CBOD2 decay and settling rates, NBOD decay and settling rates, and the fractions converting settled CBOD and settled NBOD to SOD were not changed from the calibration.

4.2.7 Incremental Conditions, Data Types 16, 17, and 18

The incremental conditions were used in the calibration to represent nonpoint source loads associated with flows. Since incremental flow was determined to be groundwater inflow, the incremental flows were assumed to be present during projections and were included. The temperature was set to the 90th percentile temperature for WQN site 1227. The DO was set to 2.0 which is an acceptable value for groundwater inflow.

4.2.8 Sediment Oxygen Demand, Nonpoint Sources, Headwaters, Wasteloads, Data Type 12, 19, 20, 21, 22, 24, 25, and 26

The NPS values were calculated for each projection scenario using a load equivalent spreadsheet. An analysis was made of the calibration NPS and SOD loads in terms of total loading in units of gm-O_2/m^2/day. The same spreadsheet also calculated load reductions for the headwaters and wasteloads.

The values and sources of the input data and the load analyses are presented in Appendix D for each of the projection runs.

LDEQ has collected and measured the CBOD and NBOD oxygen demand loading components for a number of years. These loads have been found in all streams including the non-impacted reference streams. It is LDEQ's opinion that much of this loading is attributable to run-off loads which are flushed into the stream during run-off events, and subsequently settle to the bottom in our slow moving streams. These benthic loads decay and breakdown during the year, becoming easily resuspended into the water column during the low flow/high temperature season. This season has historically been identified as the critical dissolved oxygen season.

LDEQ simulates part of the non-point source oxygen demand loading as resuspended benthic load and SOD. The calibrated non-point loads, UCBOD, UNBOD and SOD, are summed to produce the total calibrated benthic load. The total calibrated benthic load is then reduced by the total background benthic load (determined from LDEQ's reference stream research) to determine the total manmade benthic loading. The manmade portion is then reduced incrementally on a percentage basis to determine the necessary percentage reduction of manmade loading required to meet the water body's dissolved oxygen criteria. These reductions are applied uniformly to all reaches sharing similar hydrology and land uses.

Following the same protocol as the point source discharges, the total reduced manmade benthic load is adjusted for the margin of safety by dividing the value by one minus the margin of safety. This adjusted load is added back to the total background benthic value to obtain the total projection model benthic load. This total projection benthic load is then broken out into its components of SOD, resuspended CBOD and resuspended NBOD by multiplying the total projection benthic load by the ratio of each calibrated component to the total calibrated benthic load.

LDEQ has found variations in the breakdown of the individual CBOD and NBOD components. While the total BOD is reliable, the carbonaceous and nitrogenous component allocation is subject to the type of test method. In the past, LDEQ used a method which suppressed the nitrogenous component to obtain the carbonaceous component value, which was then subtracted from the total measured BOD to determine the nitrogenous value. The suppressant in this method was only reliable for twenty days thus leading to the assumption that the majority of the carbonaceous loading was depleted within that period of time. The test results supported this assumption. Recently the suppressant started failing around day seven and the manufacturer of the suppressant will only guarantee it's potency for a five day period. LDEQ felt a five day test would not adequately depict the water quality of streams and began a search for a new test method. The research found a new proposed method for testing long term BODs in Standard Methods.

This proposed method is a sixty day test which measures the incremental total BOD of the sample while at the same time measuring the increase in nitrite/nitrate in the sample. This increase in nitrite/nitrate allows LDEQ to calculate the incremental nitrogenous portion by multiplying the increase by 4.57 to determine the NBOD daily readings. These NBOD daily readings are then subtracted from the daily reading for total BOD to determine the CBOD daily values. A curve fit algorithm is then applied to the daily component readings to obtain the estimated ultimate values of each component as well as the decay rate and lag times of the first order equations.

LDEQ implemented the new test method during the 2000 survey season. The results obtained using the new method showed that a portion of the CBOD first order equation does begin to level off prior to the twentieth day, however a secondary CBOD component begins to use dissolved oxygen sometime between day ten and day twenty-five. This secondary CBOD component was not being assessed as CBOD using the previous method but was being included in the NBOD load. Thus the CBOD and NBOD component loading used in the reference stream studies is not consistent with the results using the new proposed 60 day method and the individual values should not be used to determine background values for samples processed using the new test methods. However, the sum of CBOD and NBOD should be about the same for both new and old test methods. For this reason LDEQ decided to use the sum of reference stream benthic loads as background values. Again, background values can not be quantified for Big Creek.

The resuspended total nonpoint CBOD1, CBOD2, and NBOD loading was reduced by 80% for all reaches in the summer critical projection scenario to meet the summer water quality criterion for dissolved oxygen. Since LDEQ assumes these benthic loads are long-term loads brought to the stream by various sources throughout the year, the same percentage reductions were made in the winter projection model as were in the summer critical projection model. These reductions met the summer dissolved oxygen criteria and well surpassed requirements in the non-critical winter projection.

The reductions were determined using the calibrated values for nonpoint CBOD1, CBOD2, and NBOD. These values were summed by reach, as justified above and adjusted for the margin of safety. Each reach's total benthic nonpoint load was then reduced to meet the dissolved oxygen criteria in each reach. Using the ratios determined in calibration, this reduced total nonpoint load was then broken into its components of CBOD1, CBOD2, NBOD, and SOD. The percentage reduction within the mainstem was calculated based on the comparison of the reduced total nonpoint benthic load to the calibration total nonpoint benthic load. These calculations are shown in Appendix E. The value and sources of CBOD1, CBOD2, and NBOD for each projection run are presented in Appendix F5.

4.2.12 Boundary Conditions, Data Type 27

The lower boundary conditions were set at the 90th percentile critical season temperature, the dissolved oxygen criteria, and the measured stream UCBOD and UNBOD loads for all projections and scenarios.

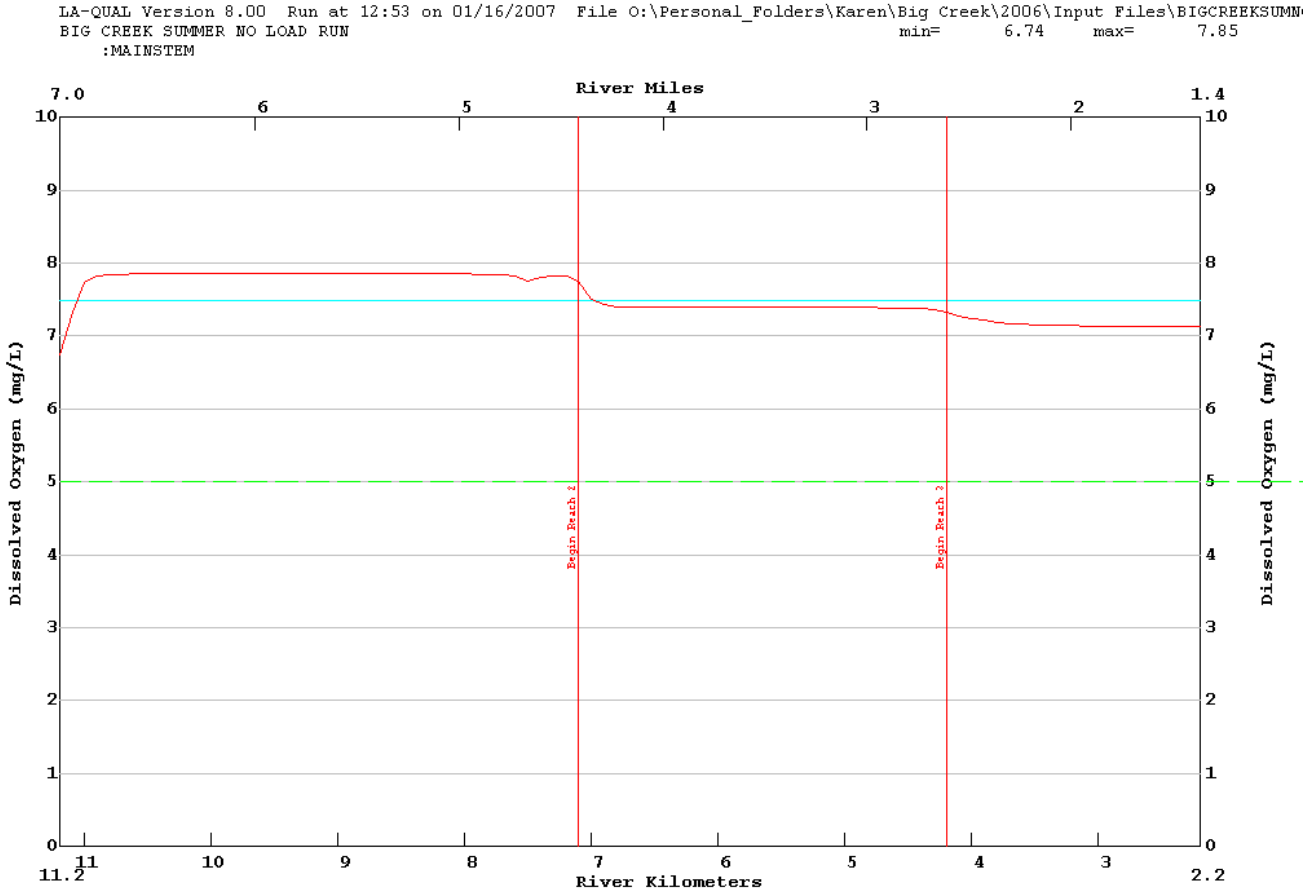
4.3 Model Discussion and Results

The projection model input and output data sets are presented in Appendix D.

4.3.1 No-Load Projection

Under this Scenario, the SOD, NPS, headwater and wasteload values were reduced to reference stream values except where the calibration value was less than the reference stream value. The reference stream used was Kisatchie Bayou. The No Load summer run revealed that 100% removal of man-made nonpoint sources would result in a minimum DO of 6.74 mg/l. A graph of the dissolved oxygen concentration versus river kilometer for the summer no-load projection is presented in Figure 4.

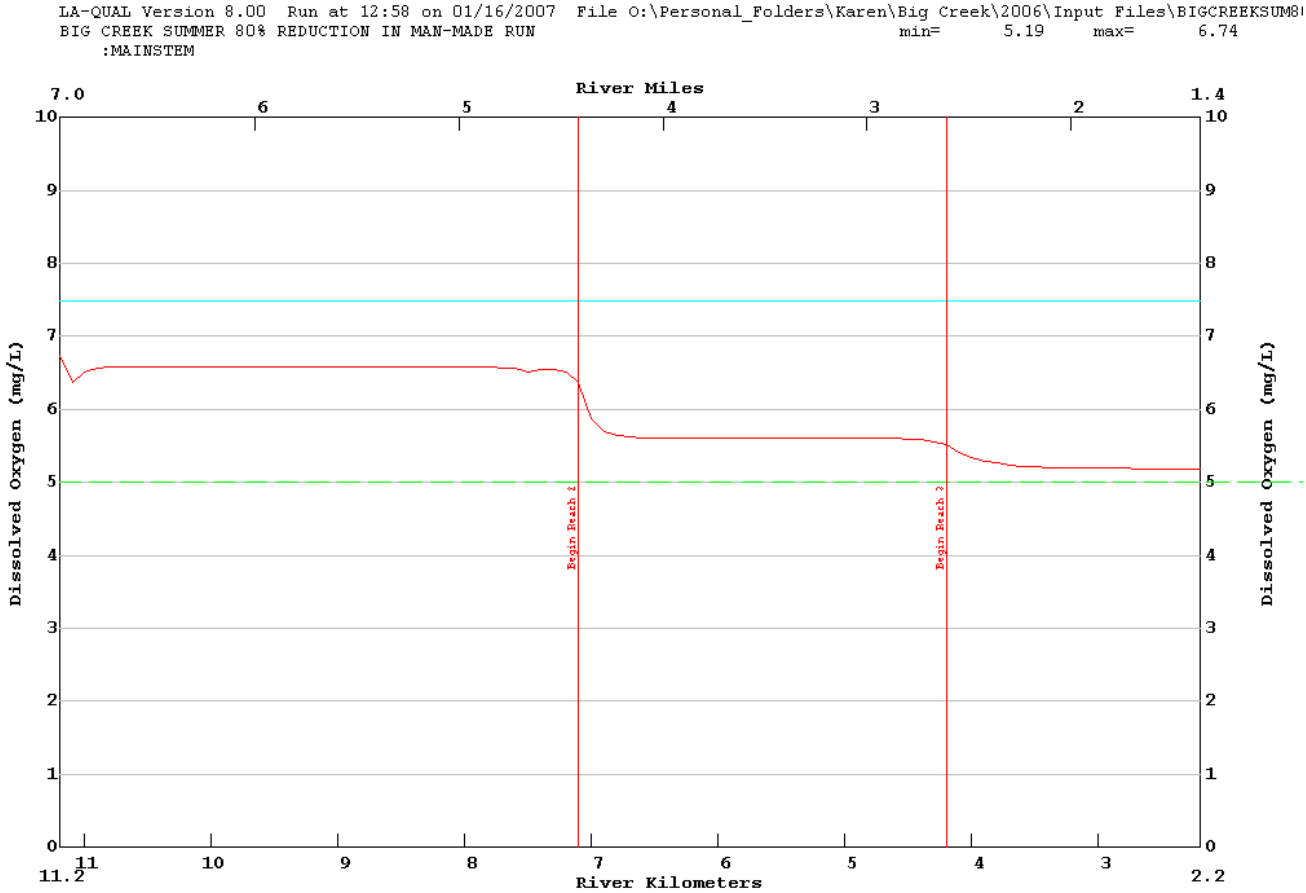
Figure 6. No Load Scenario with 100% Removal of Man-Made NPS Loads



4.3.2 Summer Projection

Summer critical season projections were run for the current standard of 5.0 mg/L May – November. In order to meet the standard, a 80% reduction of nonpoint source loads is necessary. With these percentage reductions in the benthic oxygen loads, Big Creek meets the dissolved oxygen criterion. The minimum DO on the main stem is 5.19 mg/L. A graph of the dissolved oxygen concentration versus river kilometer for the summer projection is presented in Figure 4.

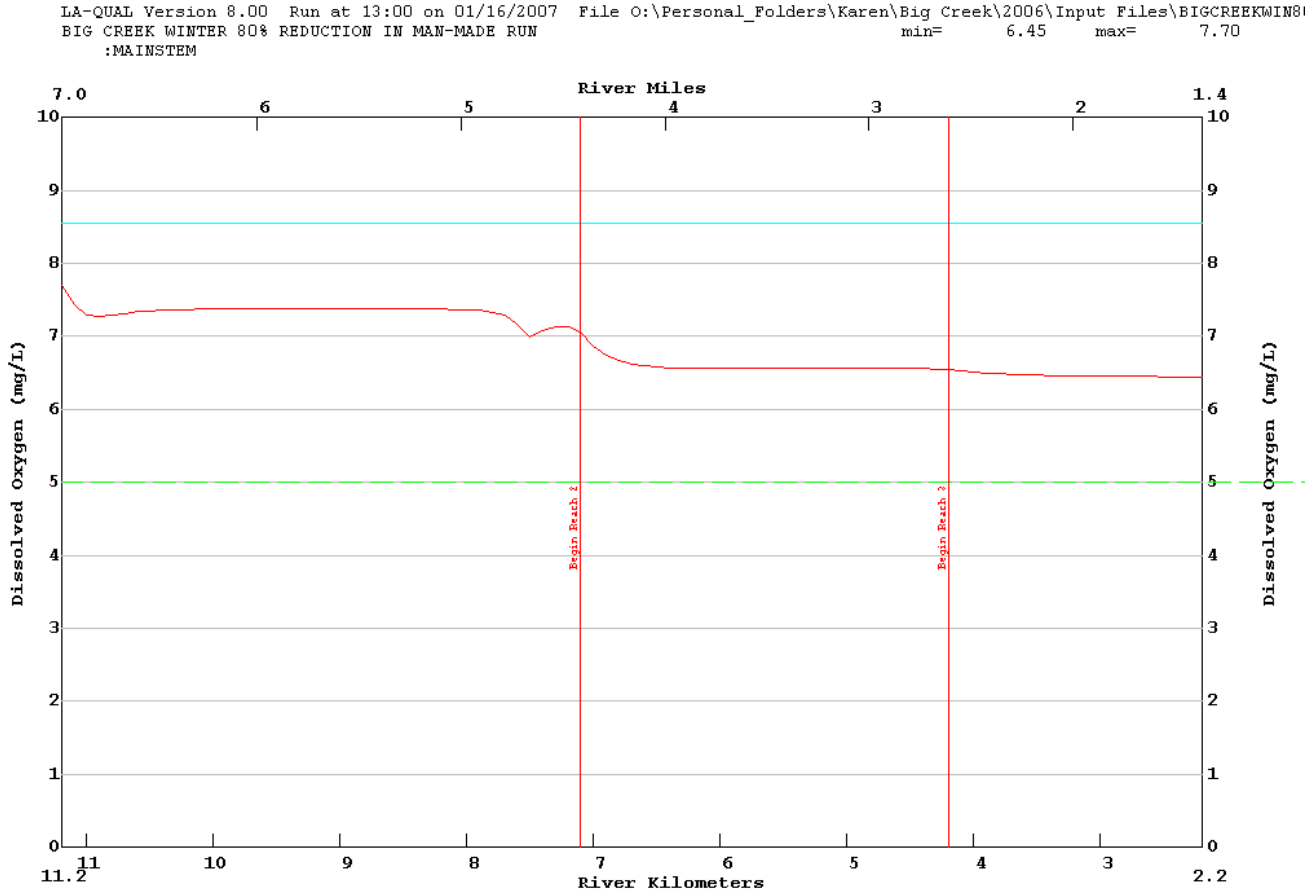
Figure 7. Summer Projection at 80% Removal of Man-Made NPS Loads



4.3.3 Winter Projection

The results of the model show that the water quality criterion for dissolved oxygen of Big Creek of 5.0 mg/l can be maintained during the winter critical season. The minimum dissolved oxygen is 6.45 mg/l. This is acceptable. To achieve the criterion, the model assumed a 80% reduction from nonpoint source loading. A graph of the dissolved oxygen concentration versus river kilometer for the winter projection is presented in Figure 5.

Figure 8. Winter Projection at 80% Removal of Man-Made NPS Loads



4.4 Calculated TMDL, WLAs and Las

4.4.1 Outline of TMDL Calculations

An outline of the TMDL calculations is provided to assist in understanding the calculations in the Appendices. Slight variances may occur based on individual cases.

4.4.1.1 The natural backgrounds benthic loading was estimated from reference stream resuspension (nonpoint CBOD and NBOD), and SOD load data.

4.4.1.2 The calibration man-made benthic loading was determined as follows:

- Calibration resuspension and SOD loads were summed for each reach as gm O_2/m^2-day to get the calibration benthic loading.

- The natural background benthic loading was subtracted from the calibration benthic loading to obtain the man-made calibration benthic loading.

4.4.1.3 Projection benthic loads are determined by trail and error during the modeling process using a uniform percent reduction for resuspension and SOD. Point sources are reduced as necessary to subsequently more stringent levels of treatment consistent with the size of the treatment facility as much as possible. Point source design flows are increased to obtain an explicit MOS of 20%. Headwater and tributary concentrations of CBOD, NBOD and DO range from reference stream levels to calibration levels based on the character of the headwater. Where headwaters and tributaries exhibit man-made pollutant loads in excess of reference stream values, the loadings are reduced by the same uniform percent reduction as the benthic loads.

- The projection benthic loading at 20 °C is calculated as the sum of the projection resuspension and SOD components expressed as gm O_2/m^2-day.

- The natural background benthic load is subtracted from the projection benthic load to obtain the man-made projection benthic load for each reach.

- The percent reduction of man-made loads for each reach is determined from the difference between the projected man-made non-point load and the man-made non-point load found during calibration.

- The projection loads are also computed in units of lb/d and kg/d for each kind.

4.4.1.4 The total stream loading capacity at critical water temperature is calculated as the sum of:

- Headwater and tributary CBOD and NBOD loading in lb/d and kg/d.

- The natural and man-made projection benthic loading for all reaches of the stream is converted to the loading at critical temperature and summed in lb/d and kg/d.

- Point source CBOD and NBOD loading in lb/d and kg/d.

- The margin of safety in lb/d and kg/d.

4.4.2 Big Creek Subsegment 101506 TMDL

The TMDL for the biochemical oxygen demanding constituents (CBOD1, CBOD2, NBOD, and SOD), have been calculated for the summer and winter critical seasons. The Summer TMDL for the Big Creek, Subsegment 101506 watershed was set equal to the total stream loading capacity. They are presented in Appendix A by reach. A summary of the loads is presented in Table 7.

Table 7. Total Maximum Daily Load (Sum of UCBOD[1], UNBOD, and SOD)

ALLOCATION	SUMMER		WINTER	
	% Reduction Required	(MAR-NOV) (lbs/day)	% Reduction Required	(DEC-FEB) (lbs/day)
Point Source WLA****		0		0
Point Source MOS****		0		0
Natural Nonpoint Loads	80	3,072	80	2,935
Manmade Nonpoint Source LA	80	3,042	80	2,875
Manmade Nonpoint Source Reserve MOS(20%)	80	761	80	719
TMDL		6,875		6,529

*****Note1:** UCBOD as stated in this allocation is Ultimate CBOD.
UCBOD to $CBOD_5$ ratio = 2.3 for all treatment levels
Permit allocations are generally based on $CBOD_5$***

****Note 2:** The Point Source wasteload allocation and margin of safety in the above table applies only to the modeled portion of Big Creek and is not applicable to the rest of subsegment 101506. Proposed dischargers to the modeled portion of Big Creek may request a reevaluation of the TMDL to allow for their discharge. All other point sources in subsegment 101506 will be allowed to discharge on the basis of State Policy Limits. The residual point source impact of these small to remote sources to the modeled portion of Big Creek is already included in the man-made non-point source load allocation and the man-made non-point source MOS.****

5. Sensitivity Analysis

All modeling studies necessarily involve uncertainty and some degree of approximation. It is therefore of value to consider the sensitivity of the model output to changes in model coefficients, and in the hypothesized relationships among the parameters of the model. The LAQUAL model allows multiple parameters to be varied with a single run. The model adjusts each parameter up or down by the percentage given in the input set. The rest of the parameters listed in the sensitivity section are held at their original projection value. Thus the sensitivity of each parameter is reviewed separately. A sensitivity analysis was performed on the calibration. The sensitivity of the model's minimum DO projections to these parameters is presented in Appendix I2. Parameters were varied by +/- 30%, except temperature, which was adjusted +/- 2 degrees Centigrade.

Values reported in Appendix I2 are percentage variation of minimum DO in the main stem Big Creek. As shown in Table 8, stream velocity, SOD, stream reaeration, and stream depth are the parameters to

which DO is most sensitive. The model is moderately sensitive to initial temperature, CBOD1 decay rate, and CBOD1 settling. The model is slightly sensitive to insensitive to the remaining parameters.

Table 8. Summary of Calibration Model Sensitivity Analysis

SENSITIVITY ANALYSIS SUMMARY

:MAINSTEM
BIG CREEK SUMMER SENSITIVITY RUN

Plot 1 Base Model Minimum DO = 5.19

Parameter	%Param Chg	Min D.O.	%D.O. Chg	%Param Chg	Min D.O.	%D.O. Chg
Stream Baseflow	30.	5.19	0.0	-30.	5.19	0.0
Initial Chorophyll a	30.	5.19	0.0	-30.	5.19	0.0
Stream Velocity	30.	4.66	-10.3	-30.	5.73	10.4
Initial Temperature	2.	4.86	-6.3	-2.	5.52	6.4
CBOD Aerobic Decay Rate	30.	5.02	-3.3	-30.	5.42	4.5
CBOD2 Aerobic Decay Rate	30.	5.15	-0.7	-30.	5.23	0.8
CBOD Settling Rate	30.	5.36	3.3	-30.	4.96	-4.4
CBOD2 Settling Rate	30.	5.19	0.0	-30.	5.19	0.0
NBOD Decay Rate	30.	5.16	-0.5	-30.	5.23	0.8
NBOD Settling Rate	30.	5.22	0.5	-30.	5.15	-0.7
Benthal Demand	30.	4.64	-10.5	-30.	5.73	10.5
Stream Dispersion	30.	5.19	0.0	-30.	5.19	0.0
Stream Reaeration	30.	5.72	10.2	-30.	4.21	-18.8
Headwater Flow	30.	5.19	0.0	-30.	5.19	0.0
Headwater DO	30.	5.19	0.0	-30.	5.19	0.0
Headwater CBOD	30.	5.19	0.0	-30.	5.19	0.0
Headwater CBOD2	30.	5.19	0.0	-30.	5.19	0.0
Headwater NBOD	30.	5.19	0.0	-30.	5.19	0.0
Stream Depth	30.	5.58	7.6	-30.	4.80	-7.6
Wasteload Flow	30.	5.19	0.0	-30.	5.19	0.0
Wasteload Temperature	2.	5.19	0.0	-2.	5.19	0.0
Wasteload DO	30.	5.19	0.0	-30.	5.19	0.0
Wasteload CBOD	30.	5.19	0.0	-30.	5.19	0.0
Wasteload CBOD2	30.	5.19	0.0	-30.	5.19	0.0
Wasteload NBOD	30.	5.19	0.0	-30.	5.19	0.0
Lower Boundary Temperature	2.	5.19	0.0	-2.	5.19	0.0
Lower Boundary DO	30.	5.19	0.0	-30.	5.19	0.0
Lower Boundary CBOD	30.	5.19	0.0	-30.	5.19	0.0
Lower Boundary CBOD2	30.	5.19	0.0	-30.	5.19	0.0
Lower Boundary NBOD	30.	5.19	0.0	-30.	5.19	0.0

6. Conclusions

This TMDL establishes load limitations for oxygen-demanding substances and goals for reduction of those pollutants. LDEQ's position, as supported by the declaratory ruling issued by Secretary Givens in response to the lawsuit regarding water quality criteria for nutrients (Sierra Club v. Givens, 710 So.2d 249 (La. App. 1st Cir. 1997), writ denied, 705 So.2d 1106 (La. 1998), is that when oxygen-demanding substances are controlled and limited in order to ensure that the dissolved oxygen criterion

is supported, nutrients are also controlled and limited. The implementation of this TMDL through wastewater discharge permits and implementation of best management practices to control and reduce runoff of soil and oxygen-demanding pollutants from nonpoint sources in the watershed will also control and reduce the nutrient loading from those sources.

A calibrated water quality model for the watershed was developed and projections were modeled to quantify the non-point source load reductions which would be necessary in order for Big Creek, subsegment 101506 to comply with its established water quality standards and criteria. This report presents the results of that analysis.

There are seven permitted dischargers located within this subsegment. A discharger listing with an inventory is located in Table 2. These dischargers are too far away from the main stem to have any significant impact. In these situations, limits for these facilities are generally set by state policy. These dischargers are accounted for as nonpoint loading through the process of calibration. Therefore, the limits for these facilities will remain the same and will continue to be set by state policy.

The modeling, which has been conducted for this TMDL, is conservative and based on limited information. The TMDL requires a 80% decrease in manmade nonpoint source loads in order to meet the DO criterion of 5.0 mg/L in the summer critical season. With this high reduction in loading, a use-attainability analysis is recommended.

LDEQ has developed this TMDL to be consistent with the state antidegradation policy (LAC 33:IX.1109.A).

LDEQ will work with other agencies such as local Soil Conservation Districts to implement agricultural best management practices in the watershed through the 319 programs. LDEQ will also continue to monitor the waters to determine whether standards are being attained.

In accordance with Section 106 of the federal Clean Water Act and under the authority of the Louisiana Environmental Quality Act, the LDEQ has established a comprehensive program for monitoring the quality of the state's surface waters. The LDEQ Surveillance Section collects surface water samples at various locations, utilizing appropriate sampling methods and procedures for ensuring the quality of the data collected. The objectives of the surface water monitoring program are to determine the quality of the state's surface waters, to develop a long-term database for water quality trend analysis, and to monitor the effectiveness of pollution controls. The data obtained through the surface water monitoring program is used to develop the state's biennial 305(b) report (*Water Quality Inventory*) and the 303(d) list of impaired waters. This information is also utilized in establishing priorities for the LDEQ nonpoint source program.

The LDEQ is continuing to implement a watershed approach to surface water quality monitoring. In 2004 a four year sampling cycle replaces the previous five year cycle. Approximately one quarter of the states watersheds will be sampled each year so that all of the state's watersheds will be sampled within the four year cycle. This will allow LDEQ to determine whether there has been any improvement in water quality following implementation of the TMDLs. As the monitoring results are evaluated at the end of each year, waterbodies may be added to or removed from the 303(d) list.

7. References

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Waldon M. G., R. K. Duerr, and Marian U. Aguillard. *Louisiana Total Maximum Daily Load Technical Procedures*. Louisiana Department of Environmental Quality. Baton Rouge, LA: May, 2000.

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8. Appendices

Appendix A – Detailed TMDL Analysis

Appendix A1 – Summer TMDL Summary

Summer TMDL Summary:

BIG CREEK (SUBSEGMENT 101506)

Calculation of the TMDL - Kilograms per day

Load description	WLA (kg O_2/day)	CBOD1 LA (kg O_2/day)	CBOD2 LA (kg O_2/day)	Organic-N LA (kg/day)	Ammonia-N LA (kg/day)	NBOD LA (kg O_2/day)	SOD LA (kg O_2/day)	LA (kg O_2/day)	MOS Load (kg O_2/day)
Point Source loads	0								0
Headwater / Tributatary loads		3	1	0	0	1		5	0
Benthic loads		1,358	663	0	0	278	469	2,768	345
Incremental Loads		0	0	0	0	0		0	0
SUB-TOTAL	**0**	**1,361**	**664**	**0**	**0**	**279**	**469**	**2,773**	**345**
TMDL = WLA + LA + MOS								***3,118 kg/day***	

Notes:
(1) - Load(lbs/day) = Load(kg/day) x 2.205

Calculation of the TMDL - Pounds per day

Load description	WLA (lbs O_2/day)	CBOD1 LA (lbs O_2/day)	CBOD2 LA (lbs O_2/day)	Organic-N LA (lbs/day)	Ammonia-N LA (lbs/day)	NBOD LA (lbs O_2/day)	SOD LA (lbs O_2/day)	LA (lbs O_2/day)	MOS Load (lbs O_2/day)
Point Source loads	0								0
Headwater / Tributatary loads		7	2	0	0	2		11	0
Benthic loads		2,994	1,462	0	0	613	1,034	6,103	761
Incremental Loads		0	0	0	0	0		0	0
SUB-TOTAL	**0**	**3,001**	**1,464**	**0**	**0**	**615**	**1,034**	**6,114**	**761**
TMDL = WLA + LA + MOS								***6,875 lbs/day***	

Notes:
(1) - Load(lbs/day) = Load(kg/day) x 2.205

Calculation of the TMDL - Kilograms per day

Load description	WLA (kg O_2/day)	CBOD1 LA (kg O_2/day)	CBOD2 LA (kg O_2/day)	Organic-N LA (kg/day)	Ammonia-N LA (kg/day)	NBOD LA (kg O_2/day)	SOD LA (kg O_2/day)	LA (kg O_2/day)	MOS Load (kg O_2/day)
Point Source loads	0								0
Natural Nonpoint Loads		682	334	0	0	141	236	1,393	
Manmade Nonpoint Loads		679	330	0	0	138	233	1,380	345
SUB-TOTAL	**0**	**1,361**	**664**	**0**	**0**	**279**	**469**	**2,773**	**345**
TMDL = WLA + LA + MOS								***3,118 kg/day***	

Calculation of the TMDL - Pounds per day

Load description	WLA (lbs O_2/day)	CBOD1 LA (lbs O_2/day)	CBOD2 LA (lbs O_2/day)	Organic-N LA (lbs/day)	Ammonia-N LA (lbs/day)	NBOD LA (lbs O_2/day)	SOD LA (lbs O_2/day)	LA (lbs O_2/day)	MOS Load (lbs O_2/day)
Point Source loads	0								0
Natural Nonpoint Loads		1,504	736	0	0	311	520	3,072	
Manmade Nonpoint Loads		1,497	728	0	0	304	514	3,042	761
SUB-TOTAL	**0**	**3,001**	**1,464**	**0**	**0**	**615**	**1,034**	**6,114**	**761**
TMDL = WLA + LA + MOS								***6,875 lbs/day***	

Appendix A2 – Winter TMDL Summary

Winter TMDL Summary:

BIG CREEK (SUBSEGMENT 101506)

Calculation of the TMDL - Kilograms per day

Load description	WLA (kg O_2/day)	CBOD1 LA (kg O_2/day)	CBOD2 LA (kg O_2/day)	Organic-N LA (kg/day)	Ammonia-N LA (kg/day)	NBOD LA (kg O_2/day)	SOD LA (kg O_2/day)	LA (kg O_2/day)	MOS Load (kg O_2/day)
Point Source loads	0								0
Headwater / Tributatary loads		28	6	0	0	7		41	3
Benthic loads		1,358	663	0	0	278	295	2,594	323
Incremental Loads		0	0	0	0	0		0	0
SUB-TOTAL	**0**	**1,386**	**669**	**0**	**0**	**285**	**295**	**2,635**	**326**
TMDL = WLA + LA + MOS								***2,961 kg/day***	

Notes:
(1) - Load(lbs/day) = Load(kg/day) x 2.205

Calculation of the TMDL - Pounds per day

Load description	WLA (lbs O_2/day)	CBOD1 LA (lbs O_2/day)	CBOD2 LA (lbs O_2/day)	Organic-N LA (lbs/day)	Ammonia-N LA (lbs/day)	NBOD LA (lbs O_2/day)	SOD LA (lbs O_2/day)	LA (lbs O_2/day)	MOS Load (lbs O_2/day)
Point Source loads	0								0
Headwater / Tributatary loads		62	13	0	0	15		90	7
Benthic loads		2,994	1,462	0	0	613	650	5,720	712
Incremental Loads		0	0	0	0	0		0	0
SUB-TOTAL	**0**	**3,056**	**1,475**	**0**	**0**	**628**	**650**	**5,810**	**719**
TMDL = WLA + LA + MOS								***6,529 lbs/day***	

Notes:
(1) - Load(lbs/day) = Load(kg/day) x 2.205

Calculation of the TMDL - Kilograms per day

Load description	WLA (kg O_2/day)	CBOD1 LA (kg O_2/day)	CBOD2 LA (kg O_2/day)	Organic-N LA (kg/day)	Ammonia-N LA (kg/day)	NBOD LA (kg O_2/day)	SOD LA (kg O_2/day)	LA (kg O_2/day)	MOS Load (kg O_2/day)
Point Source loads	0								0
Natural Nonpoint Loads		704	333	0	0	145	149	1,331	
Manmade Nonpoint Loads		682	335	0	0	140	147	1,304	326
SUB-TOTAL	**0**	**1,386**	**668**	**0**	**0**	**285**	**296**	**2,635**	**326**
TMDL = WLA + LA + MOS								***2,961 kg/day***	

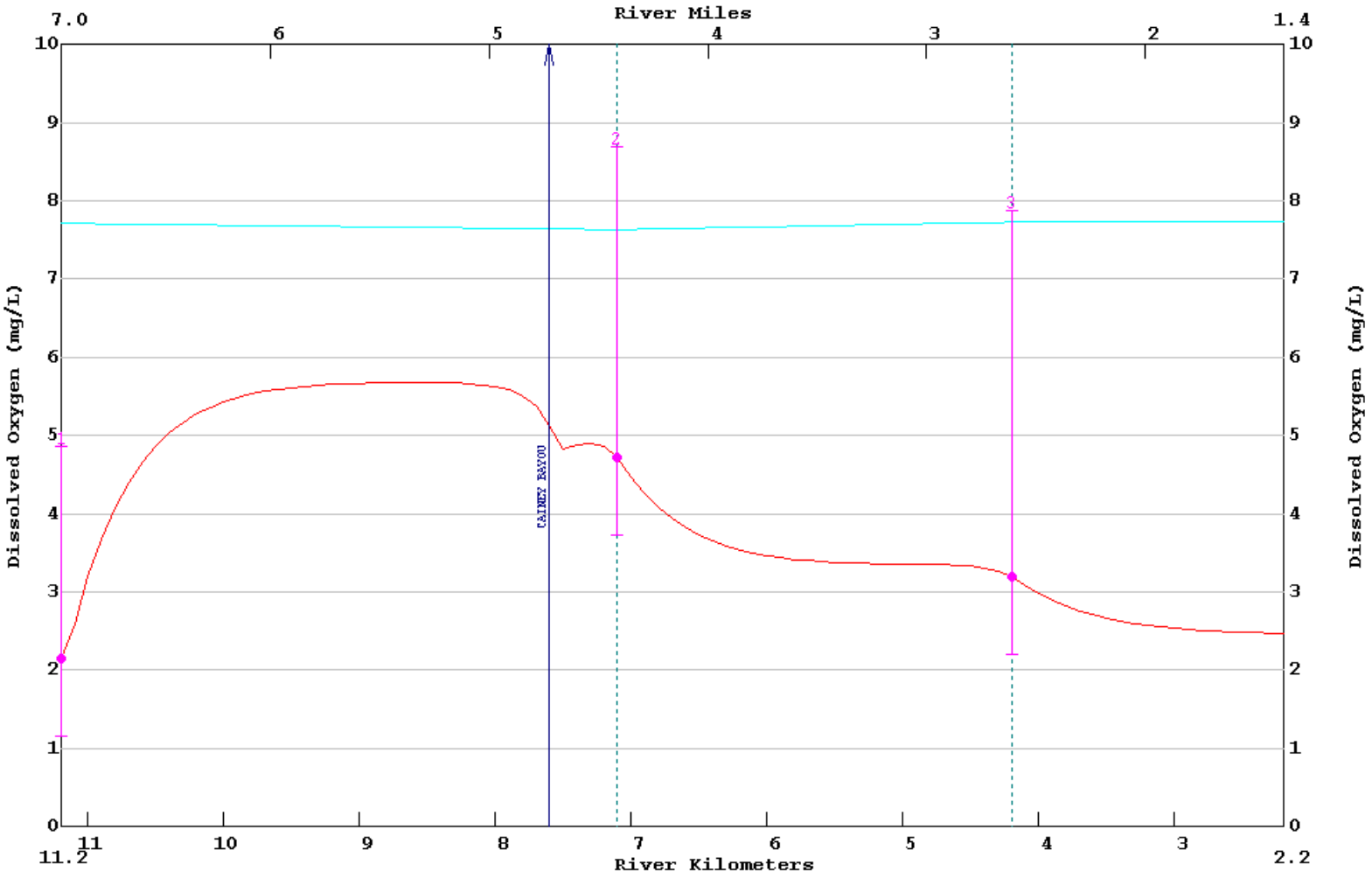
Calculation of the TMDL - Pounds per day

Load description	WLA (lbs O_2/day)	CBOD1 LA (lbs O_2/day)	CBOD2 LA (lbs O_2/day)	Organic-N LA (lbs/day)	Ammonia-N LA (lbs/day)	NBOD LA (lbs O_2/day)	SOD LA (lbs O_2/day)	LA (lbs O_2/day)	MOS Load (lbs O_2/day)
Point Source loads	0								0
Natural Nonpoint Loads		1,552	734	0	0	320	329	2,935	
Manmade Nonpoint Loads		1,504	739	0	0	309	324	2,875	719
SUB-TOTAL	**0**	**3,056**	**1,473**	**0**	**0**	**629**	**653**	**5,810**	**719**
TMDL = WLA + LA + MOS								***6,529 lbs/day***	

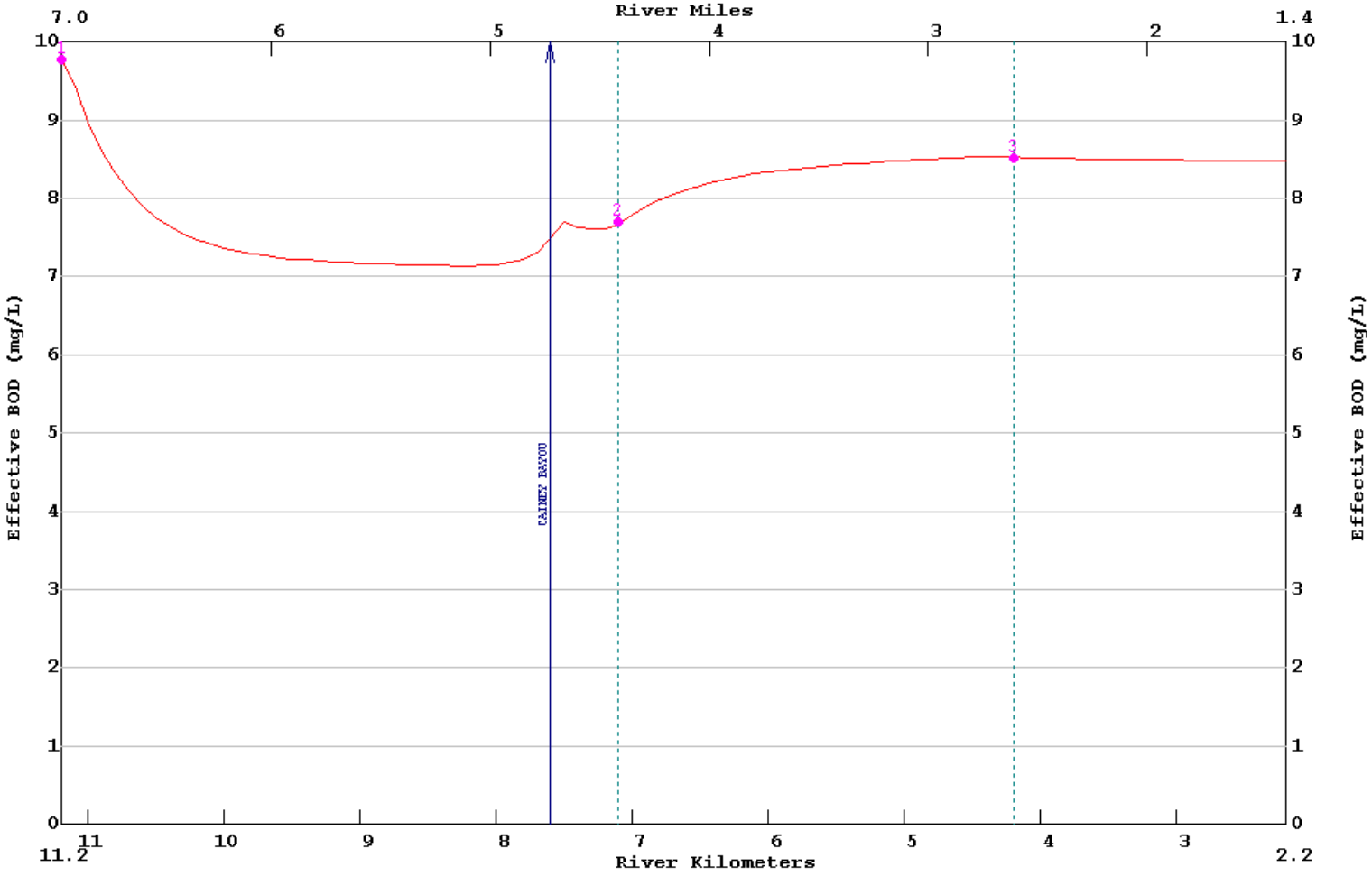
Appendix B – Calibration Model Input and Output Data Sets

Appendix B1 – Calibration Output Graphs and Input, Overlay, and Output Files

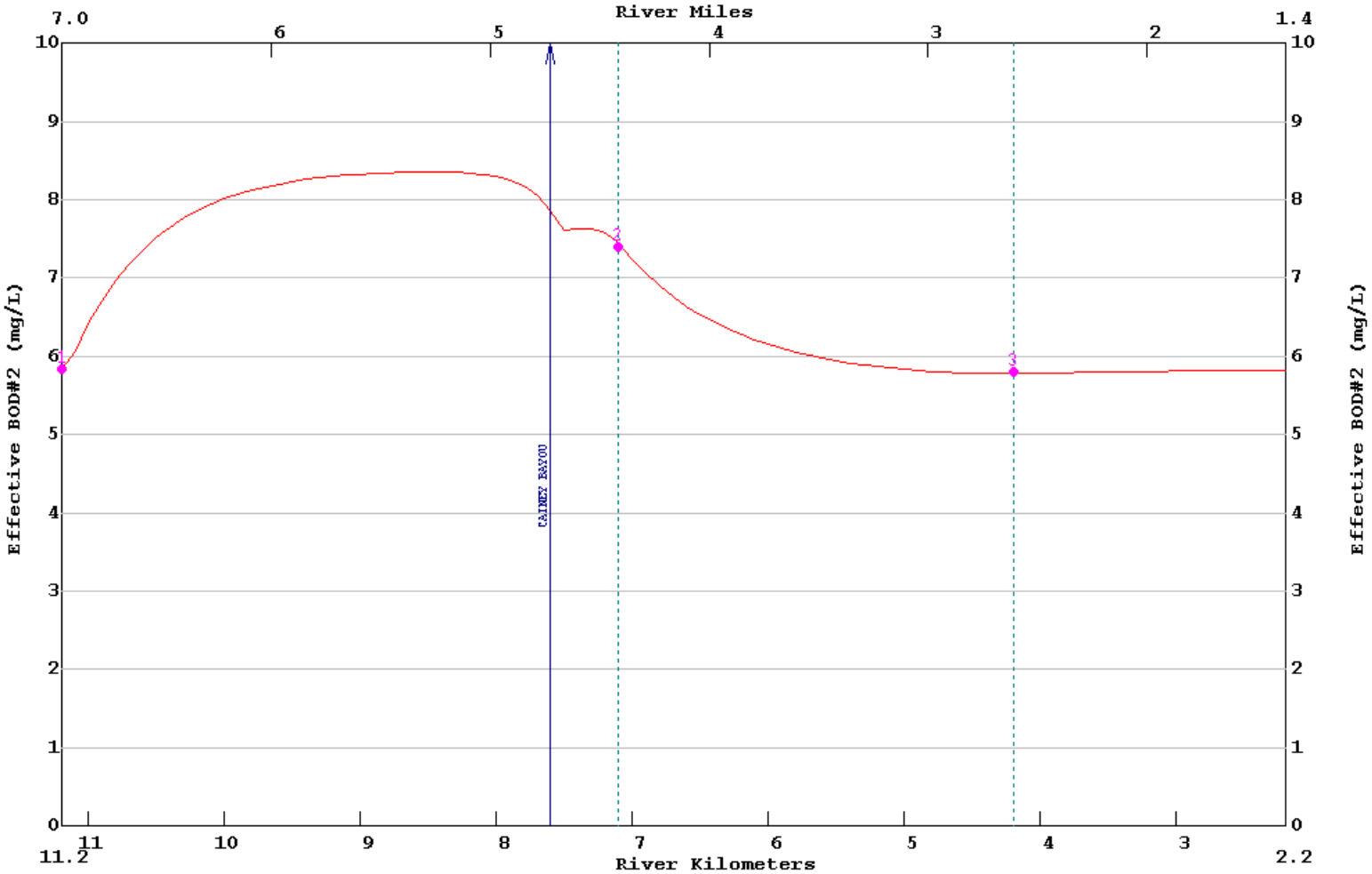
LA-QUAL Version 8.00 Run at 07:51 on 01/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKcalb
BIG CREEK CALIBRATION RUN min= 2.15 max= 5.68
:MAINSTEM



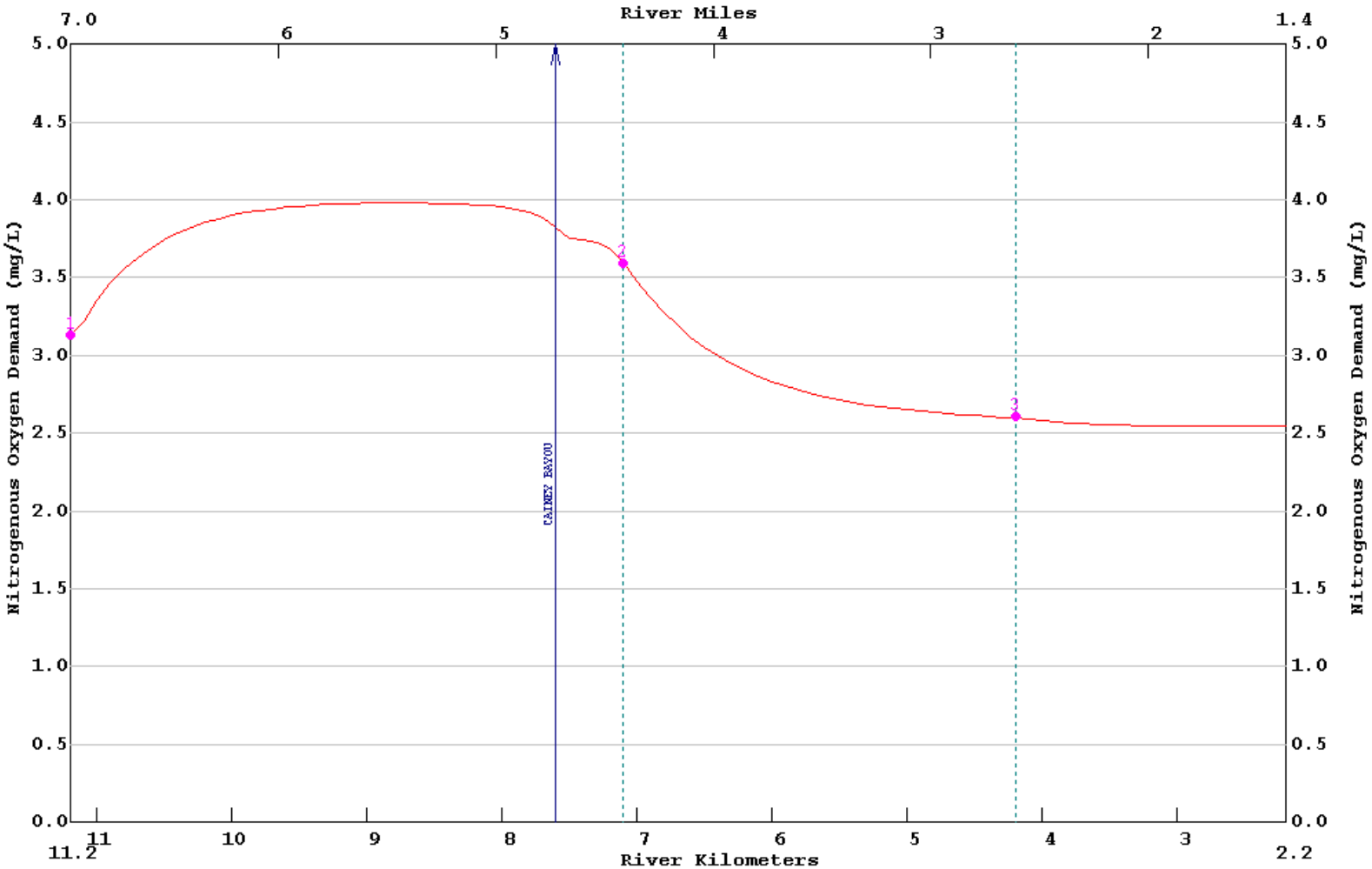
LA-QUAL Version 8.00 Run at 07:51 on 01/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKcalb
BIG CREEK CALIBRATION RUN min= 7.14 max= 9.78
:MAINSTEM



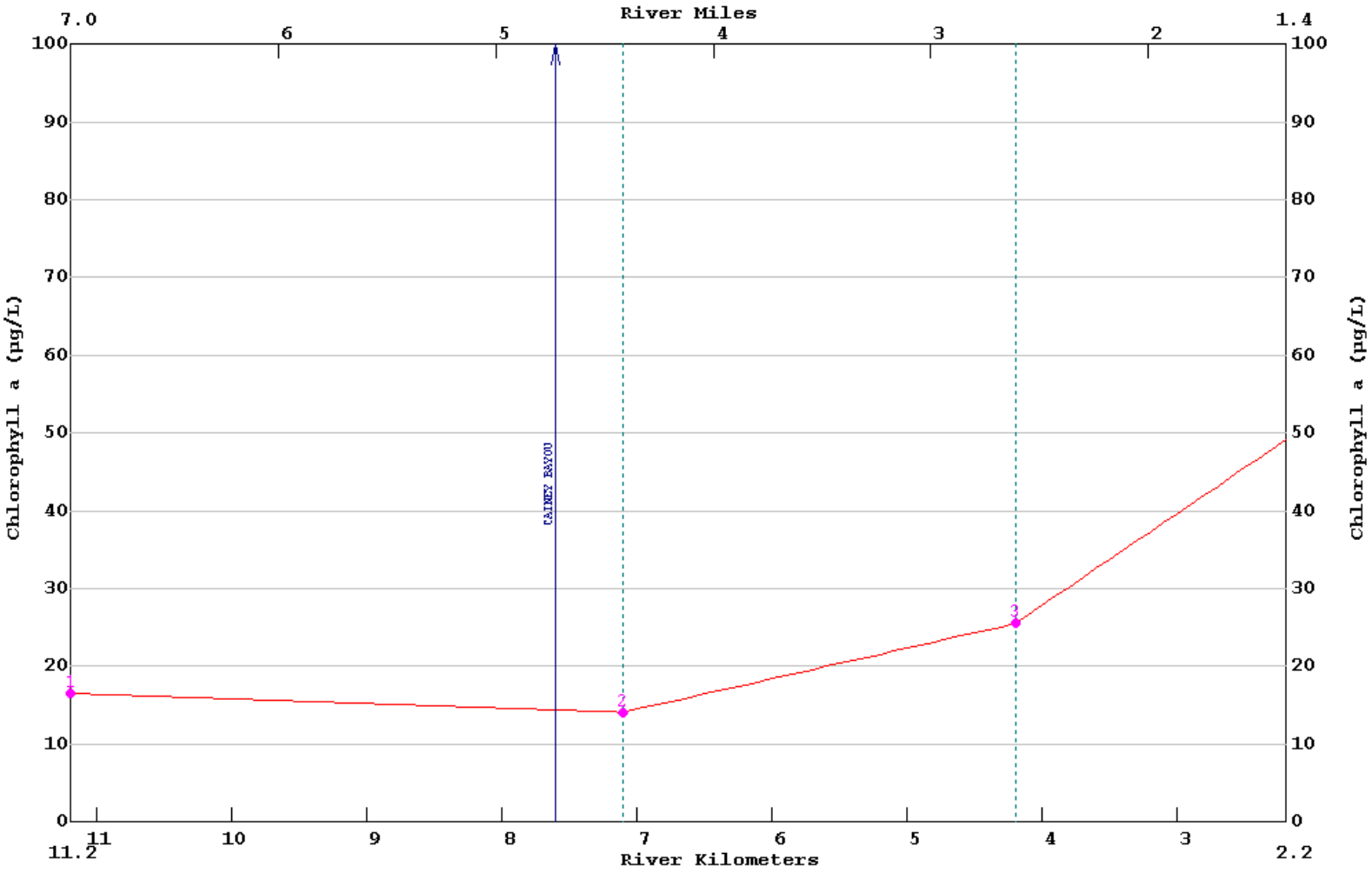
LA-QUAL Version 8.00 Run at 07:51 on 01/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKcalb
BIG CREEK CALIBRATION RUN min= 5.78 max= 8.35
:MAINSTEM



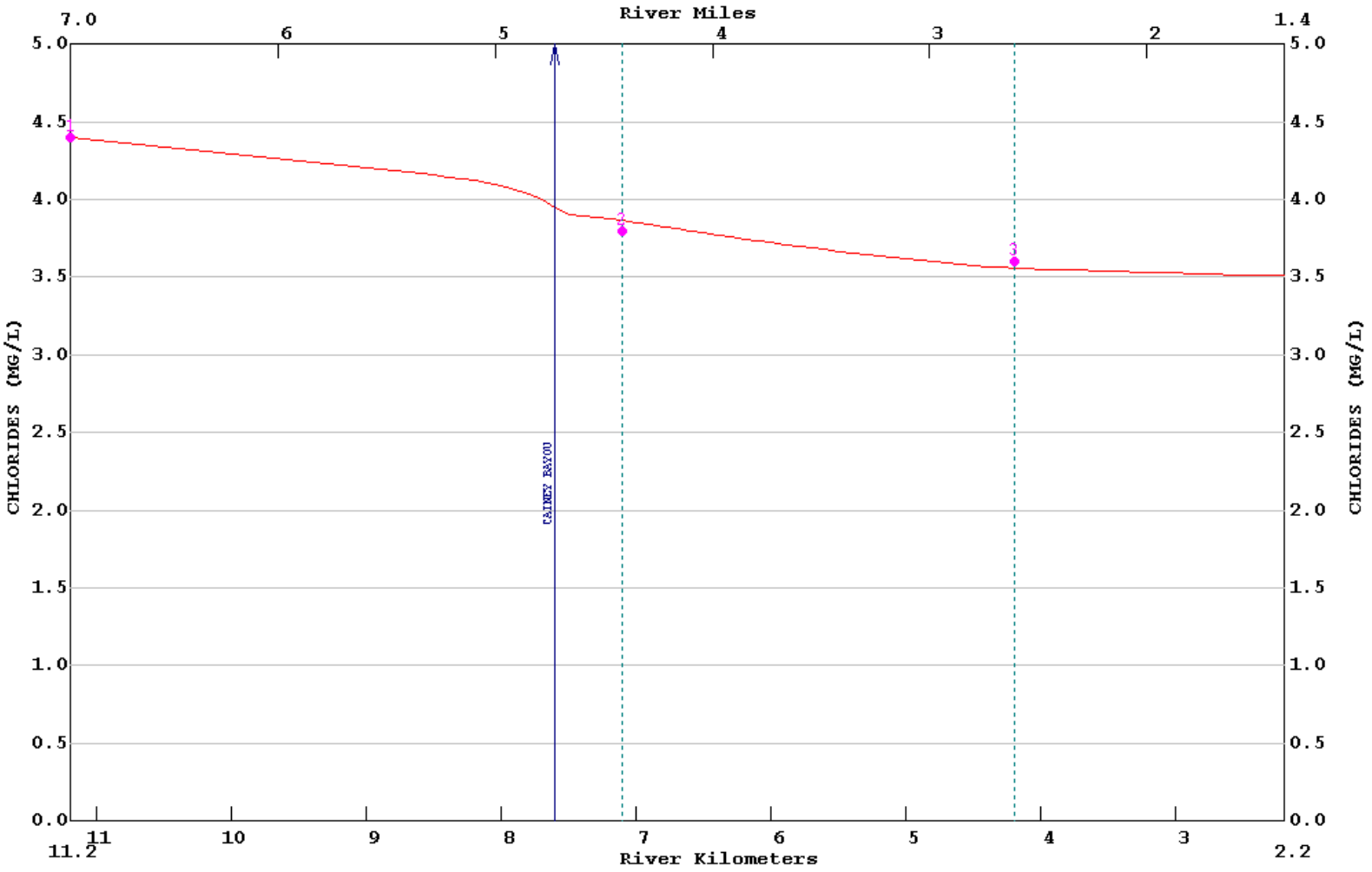
LA-QUAL Version 8.00 Run at 07:51 on 01/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKcalb
BIG CREEK CALIBRATION RUN min= 2.54 max= 3.98
:MAINSTEM



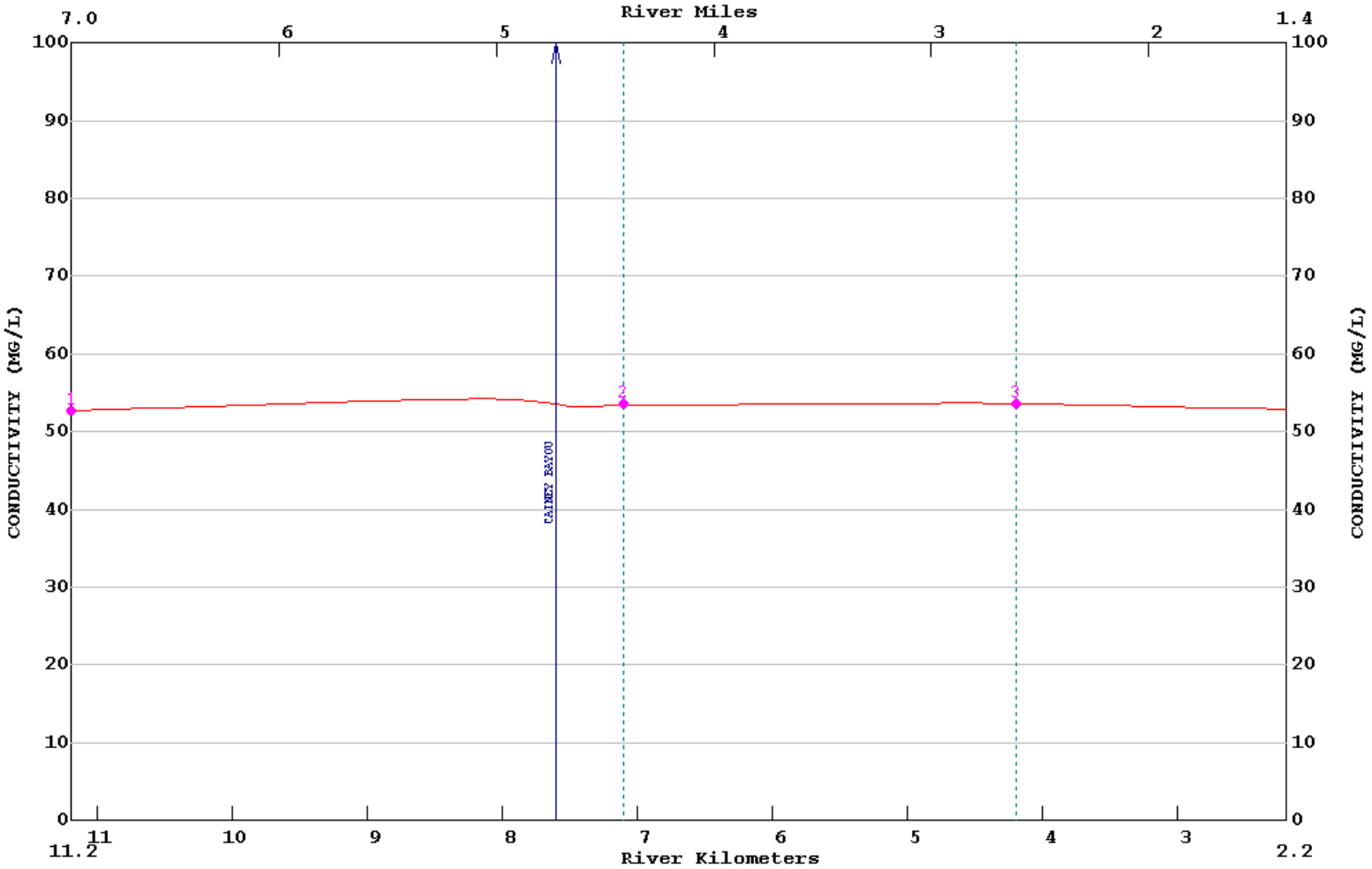
LA-QUAL Version 8.00 Run at 07:51 on 01/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKcalb
BIG CREEK CALIBRATION RUN min= 14.10 max= 49.10
:MAINSTEM



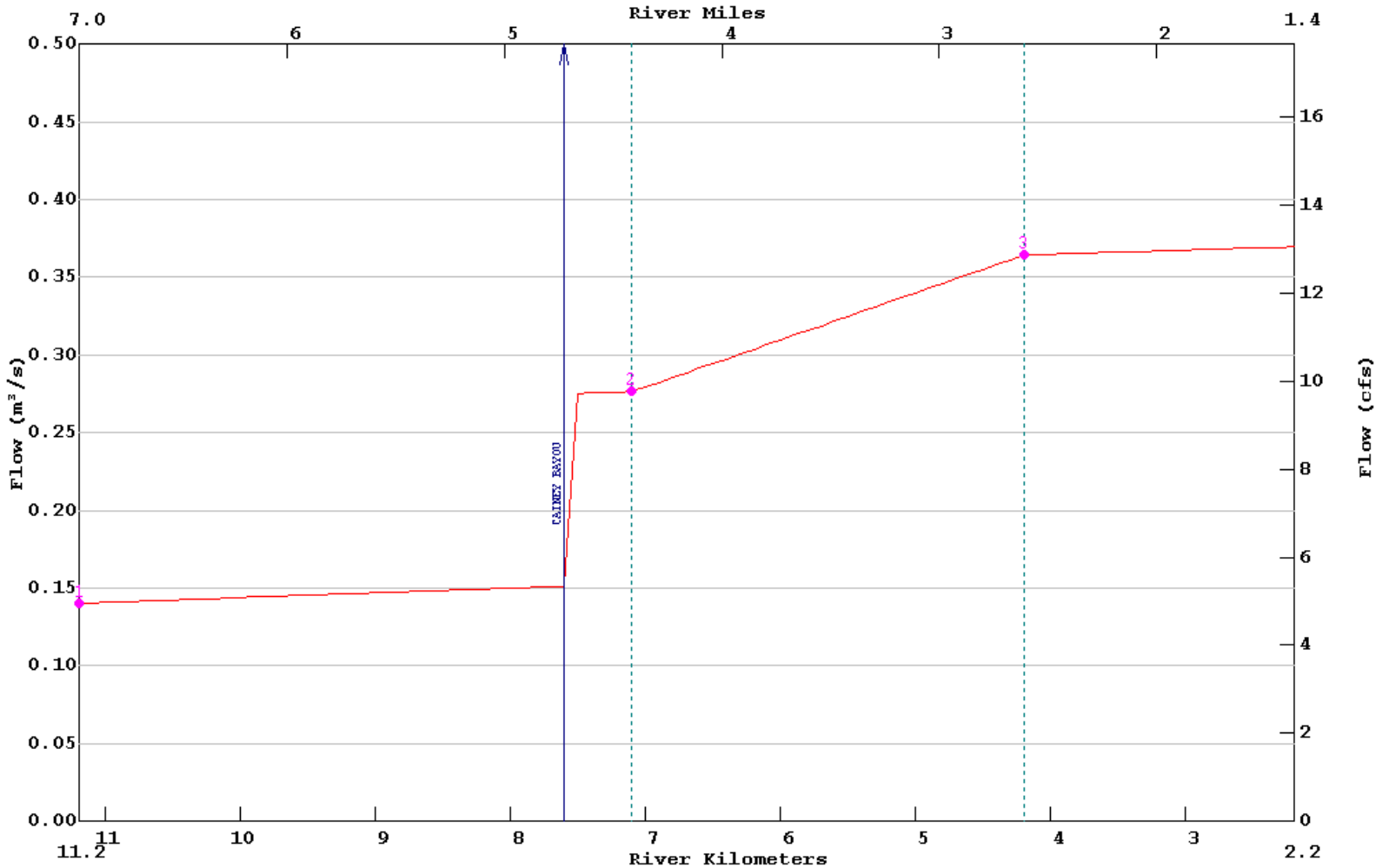
LA-QUAL Version 8.00 Run at 07:51 on 01/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKcalb
BIG CREEK CALIBRATION RUN min= 3.51 max= 4.40
:MAINSTEM



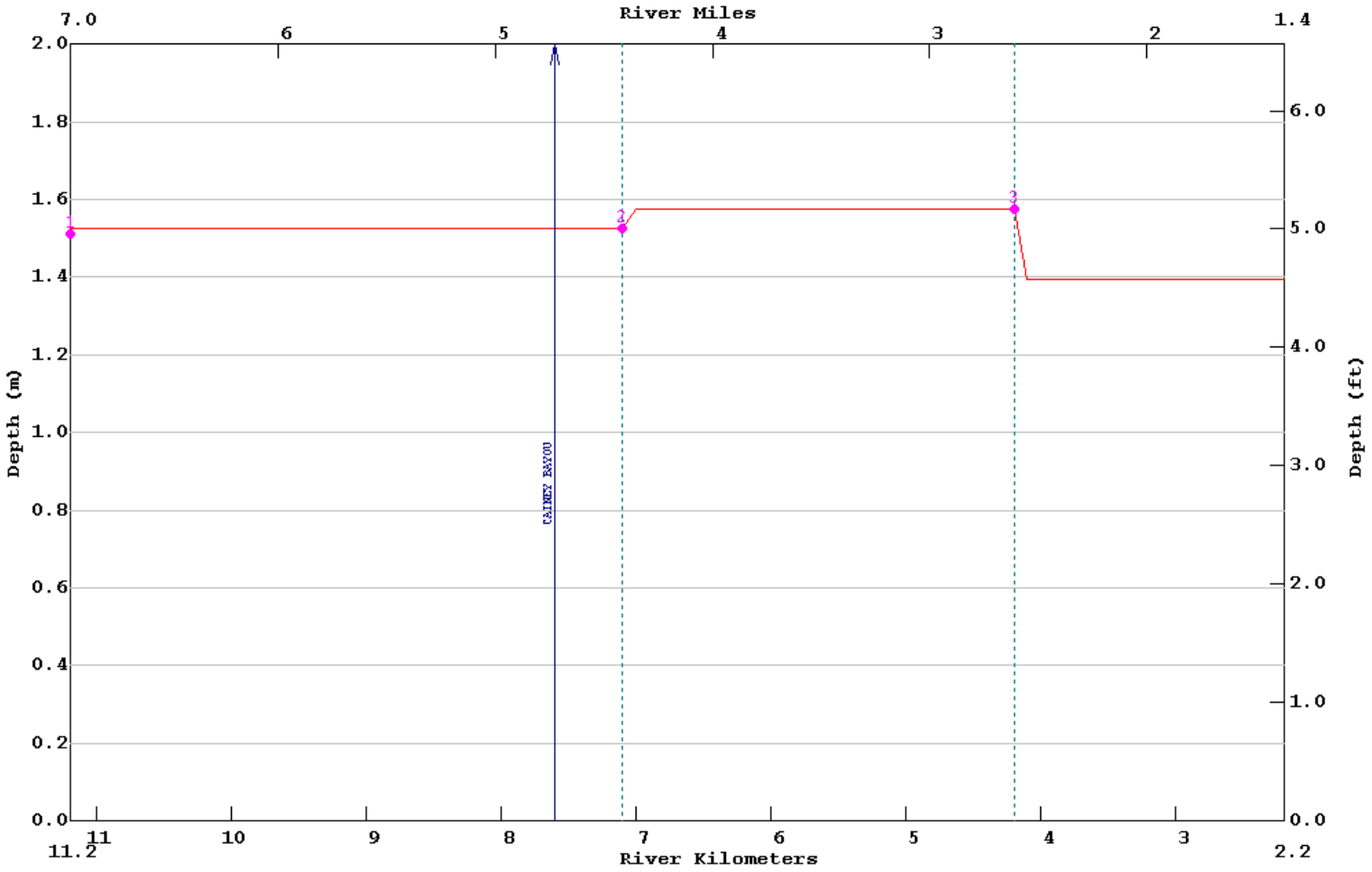
LA-QUAL Version 8.00 Run at 07:51 on 01/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKcalb
BIG CREEK CALIBRATION RUN min= 52.70 max= 54.22
:MAINSTEM



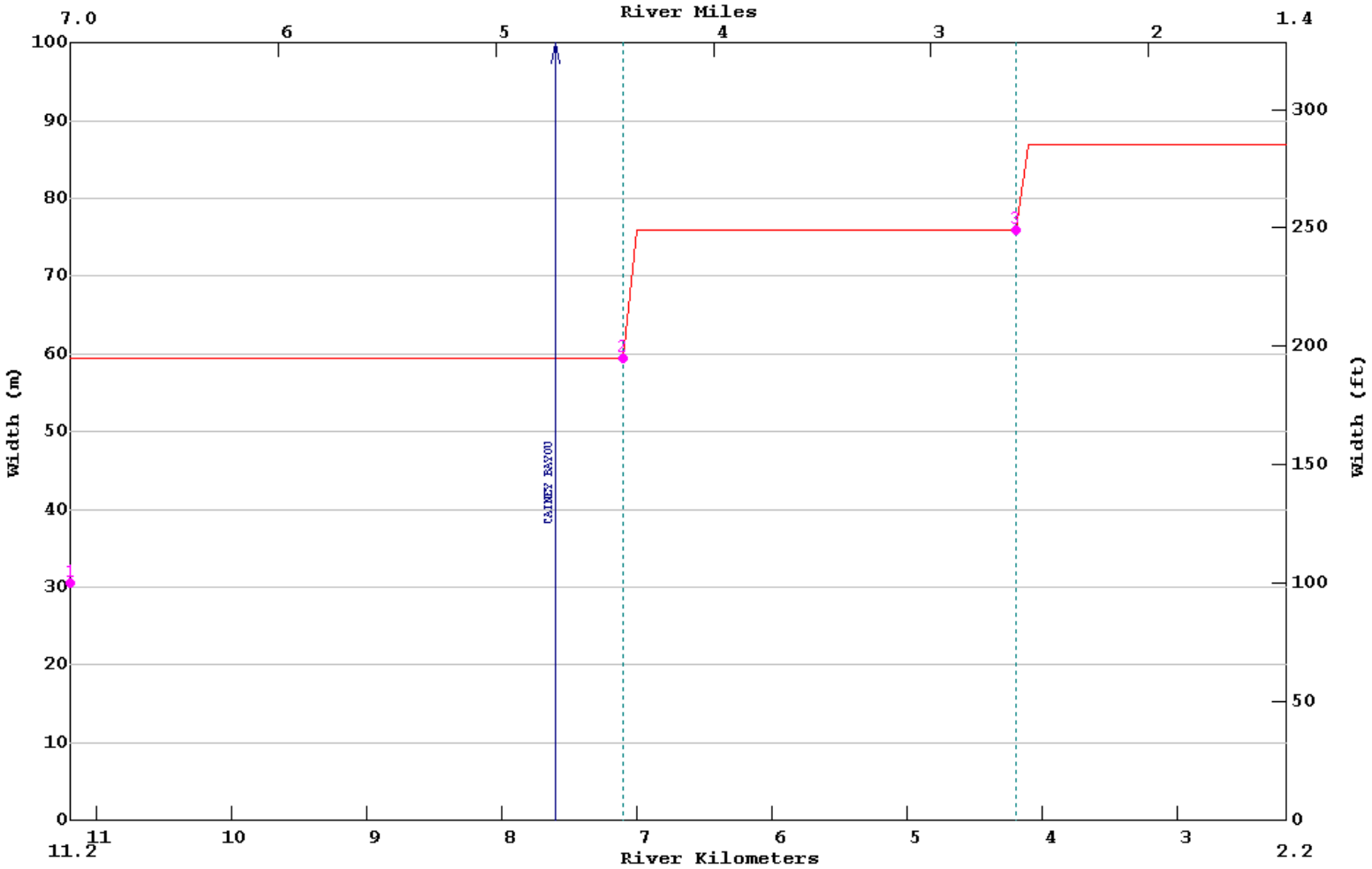
LA-QUAL Version 8.00 Run at 07:51 on 01/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKcalb
BIG CREEK CALIBRATION RUN min= 0.14 max= 0.37
:MAINSTEM



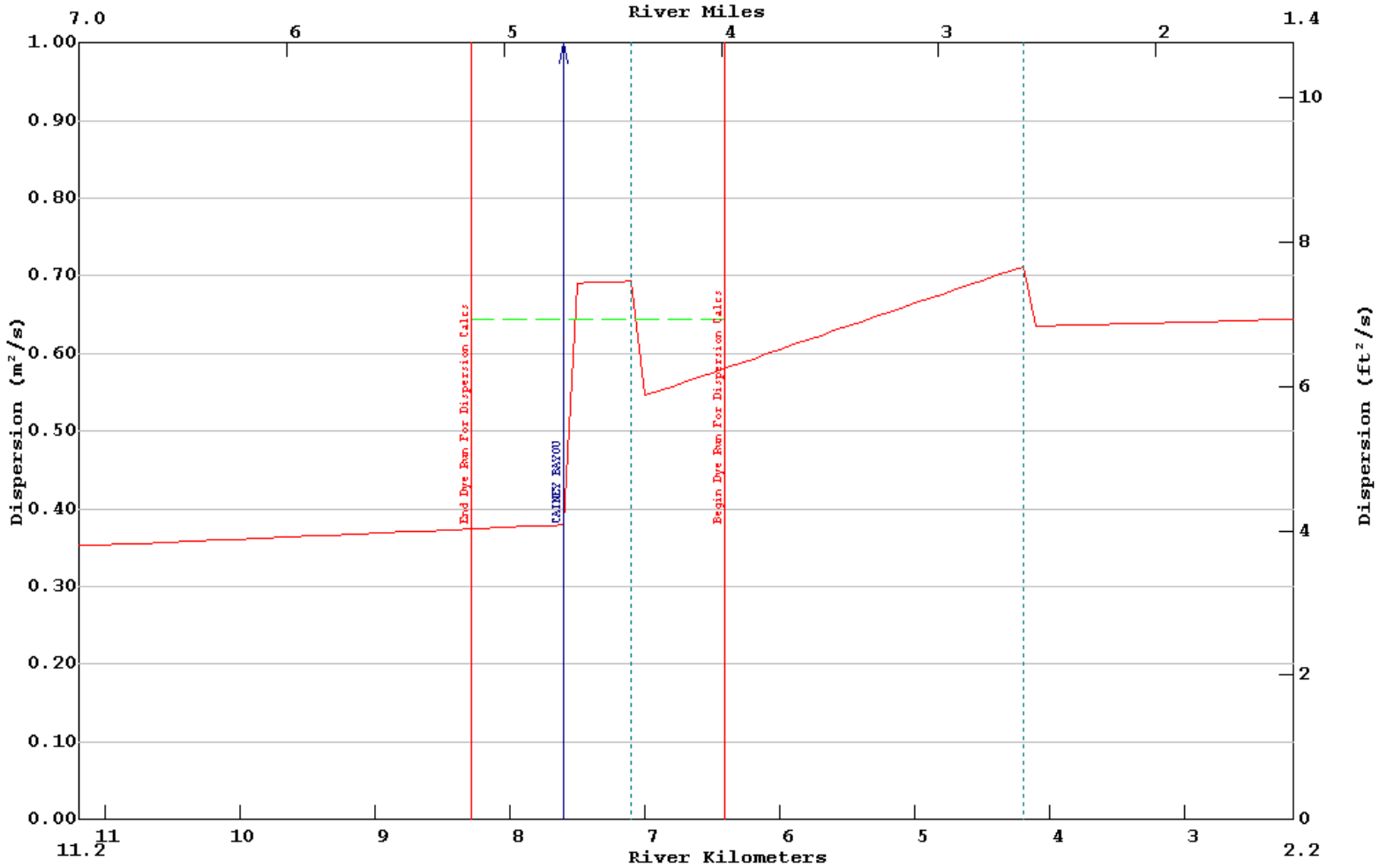
LA-QUAL Version 8.00 Run at 07:51 on 01/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKcalb
BIG CREEK CALIBRATION RUN min= 1.40 max= 1.58
:MAINSTEM



LA-QUAL Version 8.00 Run at 07:51 on 01/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKcalb
BIG CREEK CALIBRATION RUN min= 59.44 max= 86.87
:MAINSTEM



LA-QUAL Version 8.00 Run at 07:56 on 01/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKcalb
BIG CREEK CALIBRATION RUN min= 0.35 max= 0.71
:MAINSTEM



BIG CREEK Calibration Input File

```
CNTROL01     BIG CREEK WATERSHED MODEL
CNTROL02     BIG CREEK CALIBRATION RUN
CNTROL04 YES METRIC UNITS
ENDATA01
MODOPT01  NO TEMPERATURE
MODOPT02  NO SALINITY
MODOPT03 YES CONSERVATIVE MATERIAL  I = CHLORIDES                  IN MG/L
MODOPT04 YES CONSERVATIVE MATERIAL II = CONDUCTIVITY               IN MG/L
MODOPT05 YES DISSOLVED OXYGEN
MODOPT06 YES BOD1 BIOCHEMICAL OXYGEN DEMAND
MODOPT06 YES BOD2 BIOCHEMICAL OXYGEN DEMAND
MODOPT08 YES NBOD OXYGEN DEMAND
MODOPT10  NO PHOSPHORUS
MODOPT11  NO CHLOROPHYLL A
MODOPT12  NO MACROPHYTES
MODOPT13  NO COLIFORM
ENDATA02
PROGRAM  KL MINIMUM                        =     0.7
PROGRAM  INHIBITION CONTROL VALUE          =     3.
PROGRAM  K2 MAXIMUM                        =     25.0
PROGRAM  HYDRAULIC CALCULATION METHOD      =     2.
PROGRAM  SETTLING RATE UNITS               =     2.
PROGRAM  ALGAE OXYGEN PROD                 =     0.
PROGRAM  DISPERSION EQUATION               =     3.
PROGRAM  OCEAN EXCHANGE RATIO              =     0.0
ENDATA03
!Temperature Correction Constants
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ******** ********
ENDATA04
ENDATA05
ENDATA06
ENDATA07
!Reach Identification Data
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  -- ******************************----------*********----------
!          R#  ID   SITE NAME                          RKM        RKM    LENGTH
```

```
REACH ID    1  BGC   BGC1 TO BGC2                      11.2        7.1      0.1
REACH ID    2  BGC   BGC2 TO BGC3                       7.1        4.2      0.1
REACH ID    3  BGC   BGC3 TO BGC4                       4.2        2.2      0.1
ENDATA08
!Advective Hydraulic Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!         ***  -------*******-------*******-------*******-------*******
!                a      b       c     d      e        f
!               WIDTH  WIDTH   WIDTH DEPTH  DEPTH   DEPTH
!          R#   COEFF   EXP    CONST COEFF   EXP    CONST SLOPE MANNING
HYDR-1      1   0.00   0.00   59.436  0.00   0.00   1.527
HYDR-1      2   0.00   0.00   75.895  0.00   0.00   1.576
HYDR-1      3   0.00   0.00   86.868  0.00   0.00   1.396
ENDATA09
!Dispersive Hydraulic Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!         ***  -----**********----------**********----------
!              TIDAL
!          R#  RANGE    a          b         c         d
HYDR-2      1   1.0     160.0    0.8333      0.0       1.0
HYDR-2      2   1.0     160.0    0.8333      0.0       1.0
HYDR-2      3   1.0     160.0    0.8333      0.0       1.0
ENDATA10
!Initial Conditions
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!         ***  --------********--------********--------********--------********
!          R#    TEMP  SALINITY   DO     NH3 N  NIT NIT  PHOS   CHL A   MACROPHYTES
INITIAL     1    28.83  0.01     3.44                             16.5      30
INITIAL     2    29.44  0.01     3.96                             14.1      30
INITIAL     3    28.72  0.01     2.96                             25.5      30
ENDATA11
!Reaeration, Sediment Oxygen Demand and BOD Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8---------9
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!         ***  -----******----- ******-------*******-------*******-------*******-------***
!               REA    KL                     CBOD1   CBOD1              CBOD2  CBOD2
!          R#   EQ    MIN              SOD    DECAY   SETT               DECAY   SETT
```

```
COEF-1      1  11.00                    0.30   0.1806  0.20                0.0344  0.20
COEF-1      2  11.00                    1.30   0.1915  0.20                0.0306  0.20
COEF-1      3  11.00                    2.10   0.1666  0.20                0.0283  0.20
ENDATA12
!Nitrogen and Phosphorus Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  -------*******-------*******-------*******-------
!              NBOD     NBOD
!          R#  DECAY    SETT
COEF-2      1  0.0868   0.10
COEF-2      2  0.0886   0.10
COEF-2      3  0.1173   0.10
ENDATA13
ENDATA14
!Coliform and Nonconservative Cofficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  -------*******-------*******
ENDATA15
!Incremental Data for Flow, Temperature, Salinity, and Conservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  ---------*********---------*********---------*********
!          R#   OUTFLOW   INFLOW  TEMP     SALINITY CHLORIDE  COND
INCR-1      1              0.0125  28.83                        80
INCR-1      2              0.0879  29.44                2.5     55
INCR-1      3              0.0054  28.72
ENDATA16
!Incremental Data for DO, BOD, and Nitrogen
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  ---------*********---------*********---------*********
!          R#      DO
INCR-2      1     2.00
INCR-2      2     2.00
INCR-2      3     2.00
ENDATA17
!Incremental Data for Phosphorus, Chlorophyll, Coliform and Nonconservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
```

```
!234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!          ***  ---------*********---------*********
!           R#
INCR-3       1
INCR-3       2
INCR-3       3
ENDATA18
!Nonpoint Source Data
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!          ***  ---------*********---------*********---------*********
!           R#    CBOD1     NBOD                                  CBOD2
NONPOINT     1    1400       410                                   950
NONPOINT     2    1650       245                                   620
NONPOINT     3    1020       175                                   410
ENDATA19
!Headwater Data for Flow, Temperature, Salinity, and Conservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ****  -------------------- *** --------********--------********--------
!          E#    NAME                      FLOW    TEMP  SALIN   CHLORIDE   COND
HDWTR-1      1  HEADWATER                 0.1403   27.89  0.01    4.4       52.7
ENDATA20
!Headwater Data for DO, BOD, and Nitrogen
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ****  ---------*********---------*********---------*********
!           E#      DO      CBOD1    NBOD                        CB0D2
HDWTR-2      1      2.15   9.7808    3.128                       5.8308
ENDATA21
!Headwater Data for Phosphorus, Chlorophyll, Coliform, and Nonconservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ****  ---------*********---------*********
!           E#  PHOSPHOR   CHL A   COLIFORM  NONCONSERVATIVE
HDWTR-3      1              16.5
ENDATA22
ENDATA23
!Wasteload Data for Flow, Temperature, Salinity, and Conservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
```

```
!234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ****  --------------------*********---------*********---------*********
!          E#     NAME                FLOW      TEMP   SALINITY CHLORIDE  COND
WSTLD-1    37  CAINEY BAYOU          0.1236    27.42     0.01     3.7    51.5
ENDATA24
!Wasteload Data for DO, BOD, and Nitrogen
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ****  ---------*********-----*********---------*****---------*********
!          E#     DO       CBOD1         NBOD                            CBOD2
WSTLD-2    37    2.70      9.3222        3.3513                          6.1034
ENDATA25
!Wasteload Data for Phosphorus, Chlorophyll, Coliform, and Nonconservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ****  ---------*********---------*********
!          E#  PHOSPHOR  CHL A    COLIFORM NONCONSERVATIVE
WSTLD-3    37
ENDATA26
LOWER BC TEMPERATURE                        =  28.66
LOWER BC SALINITY                           =   0.01
LOWER BC CONSERVATIVE MATERIAL I            =   2.8
LOWER BC CONSERVATIVE MATERIAL II           =  47.7
LOWER BC DISSOLVED OXYGEN                   =   3.65
LOWER BC BOD1 BIOCHEMICAL OXYGEN DEMAND     =   7.8370
LOWER BC BOD2 BIOCHEMICAL OXYGEN DEMAND     =   5.0311
LOWER BC NBOD                               =   2.4180
LOWER BC CHLOROPHYLL A                      =  49.1
ENDATA27
!Dam Data
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ****  ******************* ** ******** ******** ********
ENDATA28
ENDATA29
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** **
NUMBER OF PLOTS = 1
NUMBER OF REACHES IN PLOT 1 =  3                        INCREMENT = 0.1
```

```
PLOT RCH  1  2  3
ENDATA30
OVERLAY 1 BIGCREEKOVLdisp.txt                  :MAINSTEM
ENDATA31
```

BIG CREEK 101506 CALIBRATION OVERLAY DATA SET

```
STATION  1  KILOMETER 11.20
 1    27.23     27.89     28.31      Temperature
 2               0.01                Salinity
 3               4.40                Chlorides
 4              52.70                Conductivity
 5     1.15      2.15      4.86      Dissolved Oxygen
 6               9.781               CBOD1
16               5.831               CBOD2
18               3.128               NBOD
13              16.50                Chlorophyll a
33               1.512               Depth
34              30.48                Width
31               0.1403              Flow
STATION  2  KILOMETER  7.10
 1    28.44     29.78     32.50      Temperature
 2               0.01                Salinity
 3               3.80                Chlorides
 4              53.50                Conductivity
 5     3.72      4.72      8.70      Dissolved Oxygen
 6               7.707               CBOD1
16               7.397               CBOD2
18               3.590               NBOD
13              14.10                Chlorophyll a
33               1.527               Depth
34              59.436               Width
31               0.2764              Flow
STATION  3  KILOMETER  4.20
 1    28.05     29.11     30.94      Temperature
 2               0.01                Salinity
 3               3.60                Chlorides
 4              53.50                Conductivity
 5     2.20      3.20      7.87      Dissolved Oxygen
 6               8.517               CBOD1
```

```
16                5.799                CBOD2
18                2.609                NBOD
13               25.50                 Chlorophyll a
33                1.576                Depth
34               75.895                Width
31                0.3643               Flow
STATION  4  KILOMETER  2.20
 1    27.83     28.32     29.25       Temperature
 2               0.01                 Salinity
 3               3.30                 Chlorides
 4              52.60                 Conductivity
 5     1.71      2.71      6.72       Dissolved Oxygen
 6               8.415                CBOD1
16               5.701                CBOD2
18               2.539                NBOD
13              50.70                 Chlorophyll a
33               1.396                Depth
34              86.868                Width
31               0.3697               Flow
STATION  5  KILOMETER  0.00
 1    27.76     28.66     37.07       Temperature
 2               0.01                 Salinity
 3               2.80                 Chlorides
 4              47.70                 Conductivity
 5     2.65      3.65      6.94       Dissolved Oxygen
 6               7.837                CBOD1
16               5.031                CBOD2
18               2.418                NBOD
13              49.10                 Chlorophyll a
STD 5    5.0       55.53     44.56
END
```

BIG CREEK 101506 CALIBRATION OUTPUT DATA SET

```
LA-QUAL Version 8.00
Louisiana Department of Environmental Quality

Input file is O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKcalb.txt
Output produced at 07:59 on 01/18/2007

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

CARD TYPE       CONTROL TITLES

TITLE01         BIG CREEK WATERSHED MODEL
TITLE02         BIG CREEK CALIBRATION RUN
CNTROL04  YES   METRIC UNITS
ENDATA01

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

CARD TYPE       MODEL OPTION

MODOPT01   NO   TEMPERATURE
MODOPT02   NO   SALINITY
MODOPT03  YES   CONSERVATIVE MATERIAL  I = CHLORIDES                 IN MG/L
MODOPT04  YES   CONSERVATIVE MATERIAL II = CONDUCTIVITY               IN MG/L
MODOPT05  YES   DISSOLVED OXYGEN
MODOPT06  YES   BOD1 BIOCHEMICAL OXYGEN DEMAND
MODOPT06  YES   BOD2 BIOCHEMICAL OXYGEN DEMAND
MODOPT08  YES   NBOD OXYGEN DEMAND
MODOPT10   NO   PHOSPHORUS
MODOPT11   NO   CHLOROPHYLL A
MODOPT12   NO   MACROPHYTES
MODOPT13   NO   COLIFORM
ENDATA02

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

CARD TYPE       DESCRIPTION OF CONSTANT                       VALUE

PROGRAM         KL MINIMUM                        =         0.70000 meters/day
PROGRAM         INHIBITION CONTROL VALUE          =         3.00000 (inhibit all rates but SOD)
PROGRAM         K2 MAXIMUM                        =        25.00000 per day
PROGRAM         HYDRAULIC CALCULATION METHOD      =         2.00000 (widths and depths)
PROGRAM         SETTLING RATE UNITS               =         2.00000 (values entered as per day)
PROGRAM         ALGAE OXYGEN PROD                 =         0.00000 mg O/ug chl a/day
PROGRAM         DISPERSION EQUATION               =         3.00000 (values entered as a function of D,Q,Vmean)
PROGRAM         OCEAN EXCHANGE RATIO              =         0.00000
ENDATA03

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

 CARD TYPE     RATE CODE     THETA VALUE

ENDATA04

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

```
CARD TYPE       DESCRIPTION OF CONSTANT                        VALUE

ENDATA05

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

CARD TYPE       DESCRIPTION OF CONSTANT                        VALUE

ENDATA06

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

CARD TYPE       DESCRIPTION OF CONSTANT                        VALUE

ENDATA07

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

REACH ID      1   BG     BGC1 TO BGC2                  11.20  TO    7.10   0.1000     4.10      41       1     41
REACH ID      2   BG     BGC2 TO BGC3                   7.10  TO    4.20   0.1000     2.90      29      42     70
REACH ID      3   BG     BGC3 TO BGC4                   4.20  TO    2.20   0.1000     2.00      20      71     90
ENDATA08

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

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

HYDR-1        1   BG       0.000       0.000      59.436       0.000       0.000       1.527     0.00000   0.000
HYDR-1        2   BG       0.000       0.000      75.895       0.000       0.000       1.576     0.00000   0.000
HYDR-1        3   BG       0.000       0.000      86.868       0.000       0.000       1.396     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"

HYDR          1   BG      1.00      160.000         0.833          0.000          1.000
HYDR          2   BG      1.00      160.000         0.833          0.000          1.000
HYDR          3   BG      1.00      160.000         0.833          0.000          1.000
ENDATA10

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

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

INITIAL            1   BG       28.83      0.01      3.44      0.00      0.00      0.00     16.50     30.00
INITIAL            2   BG       29.44      0.01      3.96      0.00      0.00      0.00     14.10     30.00
INITIAL            3   BG       28.72      0.01      2.96      0.00      0.00      0.00     25.50     30.00
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

COEF-1     1   BG  11 TEXAS            0.000     0.000     0.000     0.300     0.181     0.200     0.000     0.000     0.034     0.200     0.000     0.000
COEF-1     2   BG  11 TEXAS            0.000     0.000     0.000     1.300     0.191     0.200     0.000     0.000     0.031     0.200     0.000     0.000
COEF-1     3   BG  11 TEXAS            0.000     0.000     0.000     2.100     0.167     0.200     0.000     0.000     0.028     0.200     0.000     0.000
ENDATA12

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

CARD TYPE      REACH  ID        NBOD      NBOD   ORGN CONV       NH3       NH3      PHOS     DENIT
                                 DECA      SETT  TO NH3 SRCE     DECA      SRCE      SRCE      RATE

COEF-2           1   BG       0.087     0.100     0.000       0.000     0.000     0.000     0.000
COEF-2           2   BG       0.089     0.100     0.000       0.000     0.000     0.000     0.000
COEF-2           3   BG       0.117     0.100     0.000       0.000     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

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

INCR-1           1   BG       0.00000     0.01250     28.83      0.00      0.00     80.00   0.00305   0.00000
INCR-1           2   BG       0.00000     0.08790     29.44      0.00      2.50     55.00   0.03031   0.00000
INCR-1           3   BG       0.00000     0.00540     28.72      0.00      0.00      0.00   0.00270   0.00000
ENDATA16

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

CARD TYPE      REACH  ID          DO       BOD      NBOD                          BOD#2

INCR-2           1   BG        2.00      0.00      0.00      0.00      0.00      0.00
INCR-2           2   BG        2.00      0.00      0.00      0.00      0.00      0.00
INCR-2           3   BG        2.00      0.00      0.00      0.00      0.00      0.00
ENDATA17

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

 CARD TYPE      REACH  ID        PHOS     CHL A      COLI       NCM

INCR-3           1   BG        0.00      0.00      0.00      0.00
INCR-3           2   BG        0.00      0.00      0.00      0.00
INCR-3           3   BG        0.00      0.00      0.00      0.00
ENDATA18
```

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

CARD TYPE      REACH  ID       BOD#1     NBOD       COLI       NCM        DO     BOD#2

NONPOINT           1   BG     1400.00    410.00      0.00      0.00      0.00    950.00
NONPOINT           2   BG     1650.00    245.00      0.00      0.00      0.00    620.00
NONPOINT           3   BG     1020.00    175.00      0.00      0.00      0.00    410.00
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      MG/L      MG/L

HDWTR-1           1     HEADWATER               0   0.14030    4.954   27.89     0.01     4.400    52.700
ENDATA20

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

CARD TYPE     ELEMENT   NAME                         DO     BOD#1     NBOD                          BOD#2
                                                    mg/L      mg/L      mg/L      mg/L      mg/L      mg/L

HDWTR-2           1     HEADWATER                  2.15      9.78      3.13      0.00      0.00      5.83
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

HDWTR-3           1     HEADWATER                   0.00     16.50      0.00      0.00
ENDATA22

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

CARD TYPE   JUNCTION   UPSTRM     RIVER     NAME
             ELEMENT  ELEMENT     KILOM

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      MG/L      MG/L

WSTLD-1       37       7.60  CAINEY BAYOU           0.12360    4.36441    2.821   27.42     0.01     3.700    51.500
ENDATA24

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

WSTLD-2          37     CAINEY BAYOU                2.70      9.32      0.00      3.35      0.00      0.00      0.00      6.10
ENDATA25

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

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

WSTLD-3          37     CAINEY BAYOU                0.00      0.00      0.00      0.00
ENDATA26

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

CARD TYPE    CONSTITUENT                    CONCENTRATION

LOWER BC     TEMPERATURE                        =     28.660     deg C
LOWER BC     SALINITY                           =      0.010     ppt
LOWER BC     CONSERVATIVE MATERIAL I            =      2.800     MG/L
LOWER BC     CONSERVATIVE MATERIAL II           =     47.700     MG/L
LOWER BC     DISSOLVED OXYGEN                   =      3.650     mg/L
LOWER BC     BOD1 BIOCHEMICAL OXYGEN DEMAND     =      7.837     mg/L
LOWER BC     BOD2 BIOCHEMICAL OXYGEN DEMAND     =      5.031     mg/L
LOWER BC     NBOD                               =      2.418     mg/L
LOWER BC     CHLOROPHYLL A                      =     49.100     µg/L
ENDATA27

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

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

ENDATA28

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

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

ENDATA29

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


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

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


OVERLAY 1 BIGCREEKOVL.txt                      :MAINSTEM
ENDATA31



     .....NO ERRORS DETECTED IN INPUT DATA
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN   5 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11
```

FINAL REPORT HEADWATER BIG CREEK WATERSHED MODEL
REACH NO. 1 BGC1 TO BGC2 BIG CREEK CALIBRATION RUN

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

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
1	HDWTR	0.14030	27.89	0.01	4.40	52.70	2.15	9.78	5.83	9.78	5.83	3.13	0.00	0.00	0.00	16.50	0.00	0.00
EACH	INCR	0.00030	28.83	0.00	0.00	80.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	
37	WSTLD	0.12360	27.42	0.01	3.70	51.50	2.70	9.32	6.10	9.32	6.10	3.35	0.00	0.00	0.00	0.00	0.00	0.00

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
1	11.20	11.10	0.14060	0.0	0.00155	0.75	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.353	0.002
2	11.10	11.00	0.14091	0.0	0.00155	0.75	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.353	0.002
3	11.00	10.90	0.14121	0.0	0.00156	0.74	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.354	0.002
4	10.90	10.80	0.14152	0.0	0.00156	0.74	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.355	0.002
5	10.80	10.70	0.14182	0.0	0.00156	0.74	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.356	0.002
6	10.70	10.60	0.14213	0.0	0.00157	0.74	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.357	0.002
7	10.60	10.50	0.14243	0.0	0.00157	0.74	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.357	0.002
8	10.50	10.40	0.14274	0.0	0.00157	0.74	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.358	0.002
9	10.40	10.30	0.14304	0.0	0.00158	0.73	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.359	0.002
10	10.30	10.20	0.14335	0.0	0.00158	0.73	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.360	0.002
11	10.20	10.10	0.14365	0.0	0.00158	0.73	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.360	0.002
12	10.10	10.00	0.14396	0.0	0.00159	0.73	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.361	0.002
13	10.00	9.90	0.14426	0.0	0.00159	0.73	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.362	0.002
14	9.90	9.80	0.14457	0.0	0.00159	0.73	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.363	0.002
15	9.80	9.70	0.14487	0.0	0.00160	0.73	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.363	0.002
16	9.70	9.60	0.14518	0.0	0.00160	0.72	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.364	0.002
17	9.60	9.50	0.14548	0.0	0.00160	0.72	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.365	0.002
18	9.50	9.40	0.14579	0.0	0.00161	0.72	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.366	0.002
19	9.40	9.30	0.14609	0.0	0.00161	0.72	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.366	0.002
20	9.30	9.20	0.14640	0.0	0.00161	0.72	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.367	0.002
21	9.20	9.10	0.14670	0.0	0.00162	0.72	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.368	0.002
22	9.10	9.00	0.14701	0.0	0.00162	0.71	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.369	0.002
23	9.00	8.90	0.14731	0.0	0.00162	0.71	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.370	0.002
24	8.90	8.80	0.14762	0.0	0.00163	0.71	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.370	0.002
25	8.80	8.70	0.14792	0.0	0.00163	0.71	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.371	0.002
26	8.70	8.60	0.14823	0.0	0.00163	0.71	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.372	0.002
27	8.60	8.50	0.14853	0.0	0.00164	0.71	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.373	0.002
28	8.50	8.40	0.14884	0.0	0.00164	0.71	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.373	0.002
29	8.40	8.30	0.14914	0.0	0.00164	0.70	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.374	0.002
30	8.30	8.20	0.14945	0.0	0.00165	0.70	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.375	0.002
31	8.20	8.10	0.14975	0.0	0.00165	0.70	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.376	0.002
32	8.10	8.00	0.15006	0.0	0.00165	0.70	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.376	0.002
33	8.00	7.90	0.15036	0.0	0.00166	0.70	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.377	0.002
34	7.90	7.80	0.15067	0.0	0.00166	0.70	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.378	0.002
35	7.80	7.70	0.15097	0.0	0.00166	0.70	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.379	0.002
36	7.70	7.60	0.15128	0.0	0.00167	0.69	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.379	0.002
37	7.60	7.50	0.27518	44.9	0.00303	0.38	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.690	0.003
38	7.50	7.40	0.27549	44.9	0.00304	0.38	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.691	0.003

39	7.40	7.30	0.27579	44.8	0.00304	0.38	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.692	0.003
40	7.30	7.20	0.27610	44.8	0.00304	0.38	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.693	0.003
41	7.20	7.10	0.27640	44.7	0.00305	0.38	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.693	0.003
TOT						27.83			372110.91	243687.52					
AVG					0.0017		1.53	59.44			90.76				
CUM						27.83									

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

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
1	11.100	7.71	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.52	0.52	0.52	0.12	0.12	0.00	0.00	0.00	0.00	0.00	2.25	0.00	0.00	0.00
2	11.000	7.71	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.52	0.52	0.52	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.25	0.00	0.00	0.00
3	10.900	7.71	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.52	0.52	0.52	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.25	0.00	0.00	0.00
4	10.800	7.71	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.26	0.00	0.00	0.00
5	10.700	7.70	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.26	0.00	0.00	0.00
6	10.600	7.70	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.26	0.00	0.00	0.00
7	10.500	7.70	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.26	0.00	0.00	0.00
8	10.400	7.70	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.26	0.00	0.00	0.00
9	10.300	7.70	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.26	0.00	0.00	0.00
10	10.200	7.69	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.27	0.00	0.00	0.00
11	10.100	7.69	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.27	0.00	0.00	0.00
12	10.000	7.69	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.27	0.00	0.00	0.00
13	9.900	7.69	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.27	0.00	0.00	0.00
14	9.800	7.69	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.27	0.00	0.00	0.00
15	9.700	7.68	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.27	0.00	0.00	0.00
16	9.600	7.68	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.27	0.00	0.00	0.00
17	9.500	7.68	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.28	0.00	0.00	0.00
18	9.400	7.68	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.28	0.00	0.00	0.00
19	9.300	7.68	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.28	0.00	0.00	0.00
20	9.200	7.67	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.28	0.00	0.00	0.00
21	9.100	7.67	0.54	0.27	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.28	0.00	0.00	0.00
22	9.000	7.67	0.54	0.28	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.28	0.00	0.00	0.00
23	8.900	7.67	0.54	0.28	0.25	0.00	0.05	0.25	0.00	0.53	0.53	0.53	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.29	0.00	0.00	0.00
24	8.800	7.67	0.54	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.29	0.00	0.00	0.00
25	8.700	7.66	0.54	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.29	0.00	0.00	0.00
26	8.600	7.66	0.54	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.29	0.00	0.00	0.00
27	8.500	7.66	0.54	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.29	0.00	0.00	0.00
28	8.400	7.66	0.54	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.29	0.00	0.00	0.00
29	8.300	7.66	0.54	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.30	0.00	0.00	0.00
30	8.200	7.65	0.54	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.30	0.00	0.00	0.00
31	8.100	7.65	0.54	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.30	0.00	0.00	0.00
32	8.000	7.65	0.54	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.30	0.00	0.00	0.00
33	7.900	7.65	0.54	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.30	0.00	0.00	0.00
34	7.800	7.65	0.55	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.30	0.00	0.00	0.00
35	7.700	7.64	0.55	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.30	0.00	0.00	0.00
36	7.600	7.64	0.55	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.31	0.00	0.00	0.00
37	7.500	7.64	0.55	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.31	0.00	0.00	0.00
38	7.400	7.64	0.55	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.31	0.00	0.00	0.00
39	7.300	7.64	0.55	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.13	0.00	0.00	0.00	0.00	0.00	2.31	0.00	0.00	0.00
40	7.200	7.63	0.55	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.13	0.00	0.00	0.00	0.00	0.00	2.31	0.00	0.00	0.00
41	7.100	7.63	0.55	0.28	0.25	0.00	0.05	0.25	0.00	0.54	0.54	0.54	0.15	0.13	0.00	0.00	0.00	0.00	0.00	2.31	0.00	0.00	0.00
AVG 20 DEG C RATE			0.46	0.18	0.20	0.00	0.03	0.20	0.00	0.30			0.09	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
1	11.100	28.84	0.01	4.39	52.73	2.59	9.44	6.07	9.44	6.07	3.22	0.00	0.00	0.00	0.00	16.44	30.00	0.	0.00
2	11.000	28.86	0.01	4.38	52.79	3.19	8.97	6.42	8.97	6.42	3.36	0.00	0.00	0.00	0.00	16.38	30.00	0.	0.00
3	10.900	28.87	0.01	4.38	52.85	3.68	8.61	6.71	8.61	6.71	3.47	0.00	0.00	0.00	0.00	16.32	30.00	0.	0.00
4	10.800	28.89	0.01	4.37	52.91	4.08	8.31	6.97	8.31	6.97	3.56	0.00	0.00	0.00	0.00	16.27	30.00	0.	0.00
5	10.700	28.90	0.01	4.36	52.97	4.40	8.08	7.18	8.08	7.18	3.63	0.00	0.00	0.00	0.00	16.21	30.00	0.	0.00
6	10.600	28.92	0.01	4.35	53.03	4.66	7.90	7.36	7.90	7.36	3.69	0.00	0.00	0.00	0.00	16.15	30.00	0.	0.00
7	10.500	28.93	0.01	4.34	53.08	4.87	7.75	7.52	7.75	7.52	3.74	0.00	0.00	0.00	0.00	16.09	30.00	0.	0.00
8	10.400	28.95	0.01	4.33	53.14	5.04	7.64	7.65	7.64	7.65	3.79	0.00	0.00	0.00	0.00	16.03	30.00	0.	0.00
9	10.300	28.96	0.01	4.32	53.20	5.17	7.55	7.77	7.55	7.77	3.82	0.00	0.00	0.00	0.00	15.97	30.00	0.	0.00
10	10.200	28.98	0.01	4.31	53.25	5.28	7.47	7.86	7.47	7.86	3.85	0.00	0.00	0.00	0.00	15.91	30.00	0.	0.00
11	10.100	28.99	0.01	4.30	53.31	5.37	7.41	7.95	7.41	7.95	3.88	0.00	0.00	0.00	0.00	15.86	30.00	0.	0.00
12	10.000	29.01	0.01	4.29	53.37	5.43	7.36	8.02	7.36	8.02	3.90	0.00	0.00	0.00	0.00	15.80	30.00	0.	0.00
13	9.900	29.02	0.01	4.28	53.42	5.49	7.32	8.07	7.32	8.07	3.92	0.00	0.00	0.00	0.00	15.74	30.00	0.	0.00
14	9.800	29.04	0.01	4.27	53.48	5.53	7.29	8.12	7.29	8.12	3.93	0.00	0.00	0.00	0.00	15.68	30.00	0.	0.00
15	9.700	29.05	0.01	4.27	53.53	5.57	7.27	8.17	7.27	8.17	3.94	0.00	0.00	0.00	0.00	15.62	30.00	0.	0.00
16	9.600	29.07	0.01	4.26	53.59	5.59	7.25	8.20	7.25	8.20	3.95	0.00	0.00	0.00	0.00	15.56	30.00	0.	0.00
17	9.500	29.08	0.01	4.25	53.64	5.61	7.23	8.23	7.23	8.23	3.96	0.00	0.00	0.00	0.00	15.50	30.00	0.	0.00
18	9.400	29.10	0.01	4.24	53.70	5.63	7.21	8.26	7.21	8.26	3.97	0.00	0.00	0.00	0.00	15.45	30.00	0.	0.00
19	9.300	29.11	0.01	4.23	53.75	5.64	7.20	8.28	7.20	8.28	3.97	0.00	0.00	0.00	0.00	15.39	30.00	0.	0.00
20	9.200	29.13	0.01	4.22	53.81	5.65	7.19	8.30	7.19	8.30	3.97	0.00	0.00	0.00	0.00	15.33	30.00	0.	0.00
21	9.100	29.14	0.01	4.21	53.86	5.66	7.18	8.31	7.18	8.31	3.98	0.00	0.00	0.00	0.00	15.27	30.00	0.	0.00
22	9.000	29.16	0.01	4.20	53.91	5.67	7.17	8.32	7.17	8.32	3.98	0.00	0.00	0.00	0.00	15.21	30.00	0.	0.00
23	8.900	29.17	0.01	4.19	53.96	5.67	7.17	8.33	7.17	8.33	3.98	0.00	0.00	0.00	0.00	15.15	30.00	0.	0.00
24	8.800	29.19	0.01	4.18	54.01	5.67	7.16	8.34	7.16	8.34	3.98	0.00	0.00	0.00	0.00	15.10	30.00	0.	0.00
25	8.700	29.20	0.01	4.18	54.06	5.67	7.15	8.35	7.15	8.35	3.98	0.00	0.00	0.00	0.00	15.04	30.00	0.	0.00
26	8.600	29.22	0.01	4.17	54.10	5.68	7.15	8.35	7.15	8.35	3.98	0.00	0.00	0.00	0.00	14.98	30.00	0.	0.00
27	8.500	29.23	0.01	4.16	54.14	5.68	7.15	8.35	7.15	8.35	3.98	0.00	0.00	0.00	0.00	14.92	30.00	0.	0.00
28	8.400	29.25	0.01	4.15	54.18	5.67	7.14	8.35	7.14	8.35	3.98	0.00	0.00	0.00	0.00	14.86	30.00	0.	0.00
29	8.300	29.26	0.01	4.13	54.20	5.67	7.14	8.35	7.14	8.35	3.97	0.00	0.00	0.00	0.00	14.80	30.00	0.	0.00
30	8.200	29.28	0.01	4.12	54.22	5.66	7.14	8.34	7.14	8.34	3.97	0.00	0.00	0.00	0.00	14.74	30.00	0.	0.00
31	8.100	29.29	0.01	4.11	54.22	5.65	7.15	8.33	7.15	8.33	3.96	0.00	0.00	0.00	0.00	14.69	30.00	0.	0.00
32	8.000	29.31	0.01	4.09	54.19	5.62	7.16	8.30	7.16	8.30	3.95	0.00	0.00	0.00	0.00	14.63	30.00	0.	0.00
33	7.900	29.32	0.01	4.07	54.13	5.58	7.18	8.26	7.18	8.26	3.94	0.00	0.00	0.00	0.00	14.57	30.00	0.	0.00
34	7.800	29.34	0.01	4.04	54.02	5.50	7.23	8.18	7.23	8.18	3.92	0.00	0.00	0.00	0.00	14.51	30.00	0.	0.00
35	7.700	29.35	0.01	4.00	53.84	5.37	7.32	8.06	7.32	8.06	3.88	0.00	0.00	0.00	0.00	14.45	30.00	0.	0.00
36	7.600	29.37	0.01	3.95	53.56	5.13	7.48	7.86	7.48	7.86	3.82	0.00	0.00	0.00	0.00	14.39	30.00	0.	0.00
37	7.500	29.38	0.01	3.90	53.26	4.83	7.69	7.62	7.69	7.62	3.75	0.00	0.00	0.00	0.00	14.33	30.00	0.	0.00
38	7.400	29.40	0.01	3.90	53.29	4.88	7.64	7.64	7.64	7.64	3.74	0.00	0.00	0.00	0.00	14.28	30.00	0.	0.00
39	7.300	29.41	0.01	3.89	53.31	4.90	7.61	7.62	7.61	7.62	3.72	0.00	0.00	0.00	0.00	14.22	30.00	0.	0.00
40	7.200	29.43	0.01	3.88	53.34	4.86	7.61	7.57	7.61	7.57	3.68	0.00	0.00	0.00	0.00	14.16	30.00	0.	0.00
41	7.100	29.44	0.01	3.87	53.36	4.73	7.66	7.45	7.66	7.45	3.60	0.00	0.00	0.00	0.00	14.10	30.00	0.	0.00

FINAL REPORT HEADWATER BIG CREEK WATERSHED MODEL
REACH NO. 2 BGC2 TO BGC3 BIG CREEK CALIBRATION RUN

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

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
42	UPR RCH	0.27640	29.44	0.01	3.87	53.36	4.73	7.66	7.45	7.66	7.45	3.60	0.00	0.00	0.00	14.10	0.00	0.00
EACH	INCR	0.00303	29.44	0.00	2.50	55.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
42	7.10	7.00	0.27943	44.2	0.00234	0.50	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.546	0.002
43	7.00	6.90	0.28246	43.8	0.00236	0.49	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.552	0.002
44	6.90	6.80	0.28549	43.3	0.00239	0.48	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.558	0.002
45	6.80	6.70	0.28852	42.8	0.00241	0.48	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.564	0.002
46	6.70	6.60	0.29156	42.4	0.00244	0.47	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.570	0.002
47	6.60	6.50	0.29459	42.0	0.00246	0.47	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.576	0.002
48	6.50	6.40	0.29762	41.5	0.00249	0.47	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.582	0.002
49	6.40	6.30	0.30065	41.1	0.00251	0.46	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.588	0.003
50	6.30	6.20	0.30368	40.7	0.00254	0.46	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.593	0.003
51	6.20	6.10	0.30671	40.3	0.00256	0.45	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.599	0.003
52	6.10	6.00	0.30974	39.9	0.00259	0.45	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.605	0.003
53	6.00	5.90	0.31277	39.5	0.00261	0.44	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.611	0.003
54	5.90	5.80	0.31580	39.1	0.00264	0.44	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.617	0.003
55	5.80	5.70	0.31883	38.8	0.00267	0.43	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.623	0.003
56	5.70	5.60	0.32187	38.4	0.00269	0.43	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.629	0.003
57	5.60	5.50	0.32490	38.0	0.00272	0.43	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.635	0.003
58	5.50	5.40	0.32793	37.7	0.00274	0.42	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.641	0.003
59	5.40	5.30	0.33096	37.3	0.00277	0.42	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.647	0.003
60	5.30	5.20	0.33399	37.0	0.00279	0.41	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.653	0.003
61	5.20	5.10	0.33702	36.7	0.00282	0.41	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.659	0.003
62	5.10	5.00	0.34005	36.3	0.00284	0.41	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.665	0.003
63	5.00	4.90	0.34308	36.0	0.00287	0.40	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.670	0.003
64	4.90	4.80	0.34611	35.7	0.00289	0.40	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.676	0.003
65	4.80	4.70	0.34915	35.4	0.00292	0.40	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.682	0.003
66	4.70	4.60	0.35218	35.1	0.00294	0.39	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.688	0.003
67	4.60	4.50	0.35521	34.8	0.00297	0.39	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.694	0.003
68	4.50	4.40	0.35824	34.5	0.00300	0.39	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.700	0.003
69	4.40	4.30	0.36127	34.2	0.00302	0.38	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.706	0.003
70	4.30	4.20	0.36430	33.9	0.00305	0.38	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.712	0.003
TOT						12.55			346870.50	220095.48					
AVG					0.0027		1.58	75.90			119.61				
CUM						40.38									

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

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
42	7.000	7.64	0.53	0.30	0.25	0.00	0.05	0.25	0.00	2.35	2.35	2.35	0.15	0.13	0.00	0.00	0.00	0.00	0.00	2.31	0.00	0.00	0.00
43	6.900	7.64	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.35	2.35	2.35	0.15	0.12	0.00	0.00	0.00	0.00	0.00	2.31	0.00	0.00	0.00
44	6.800	7.64	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.34	2.34	2.34	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.31	0.00	0.00	0.00
45	6.700	7.64	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.34	2.34	2.34	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.30	0.00	0.00	0.00

46	6.600	7.65	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.34	2.34	2.34	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.30	0.00	0.00	0.00
47	6.500	7.65	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.33	2.33	2.33	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.30	0.00	0.00	0.00
48	6.400	7.65	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.33	2.33	2.33	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.30	0.00	0.00	0.00
49	6.300	7.66	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.33	2.33	2.33	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.29	0.00	0.00	0.00
50	6.200	7.66	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.32	2.32	2.32	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.29	0.00	0.00	0.00
51	6.100	7.66	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.32	2.32	2.32	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.29	0.00	0.00	0.00
52	6.000	7.67	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.32	2.32	2.32	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.29	0.00	0.00	0.00
53	5.900	7.67	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.31	2.31	2.31	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.28	0.00	0.00	0.00
54	5.800	7.67	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.31	2.31	2.31	0.14	0.12	0.00	0.00	0.00	0.00	0.00	2.28	0.00	0.00	0.00
55	5.700	7.68	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.30	2.30	2.30	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.28	0.00	0.00	0.00
56	5.600	7.68	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.30	2.30	2.30	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.27	0.00	0.00	0.00
57	5.500	7.68	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.30	2.30	2.30	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.27	0.00	0.00	0.00
58	5.400	7.69	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.29	2.29	2.29	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.27	0.00	0.00	0.00
59	5.300	7.69	0.53	0.29	0.25	0.00	0.05	0.25	0.00	2.29	2.29	2.29	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.27	0.00	0.00	0.00
60	5.200	7.69	0.52	0.29	0.25	0.00	0.05	0.25	0.00	2.29	2.29	2.29	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.26	0.00	0.00	0.00
61	5.100	7.70	0.52	0.29	0.25	0.00	0.05	0.25	0.00	2.28	2.28	2.28	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.26	0.00	0.00	0.00
62	5.000	7.70	0.52	0.29	0.25	0.00	0.05	0.25	0.00	2.28	2.28	2.28	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.26	0.00	0.00	0.00
63	4.900	7.70	0.52	0.29	0.25	0.00	0.05	0.25	0.00	2.28	2.28	2.28	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.26	0.00	0.00	0.00
64	4.800	7.71	0.52	0.29	0.25	0.00	0.05	0.25	0.00	2.27	2.27	2.27	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.25	0.00	0.00	0.00
65	4.700	7.71	0.52	0.29	0.25	0.00	0.05	0.25	0.00	2.27	2.27	2.27	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.25	0.00	0.00	0.00
66	4.600	7.72	0.52	0.29	0.25	0.00	0.05	0.25	0.00	2.27	2.27	2.27	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.25	0.00	0.00	0.00
67	4.500	7.72	0.52	0.29	0.25	0.00	0.05	0.25	0.00	2.26	2.26	2.26	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.25	0.00	0.00	0.00
68	4.400	7.72	0.52	0.29	0.25	0.00	0.05	0.25	0.00	2.26	2.26	2.26	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
69	4.300	7.72	0.52	0.29	0.25	0.00	0.05	0.25	0.00	2.25	2.25	2.25	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
70	4.200	7.73	0.52	0.29	0.25	0.00	0.05	0.25	0.00	2.25	2.25	2.25	0.13	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
AVG 20 DEG C RATE			0.44	0.19	0.20	0.00	0.03	0.20	0.00	1.30			0.09	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
42	7.000	29.42	0.01	3.85	53.38	4.47	7.79	7.24	7.79	7.24	3.48	0.00	0.00	0.00	0.00	14.49	30.00	0.	0.00
43	6.900	29.39	0.01	3.84	53.39	4.26	7.89	7.06	7.89	7.06	3.37	0.00	0.00	0.00	0.00	14.89	30.00	0.	0.00
44	6.800	29.37	0.01	3.82	53.41	4.09	7.98	6.90	7.98	6.90	3.27	0.00	0.00	0.00	0.00	15.28	30.00	0.	0.00
45	6.700	29.34	0.01	3.81	53.43	3.94	8.05	6.76	8.05	6.76	3.19	0.00	0.00	0.00	0.00	15.67	30.00	0.	0.00
46	6.600	29.32	0.01	3.80	53.44	3.83	8.11	6.64	8.11	6.64	3.12	0.00	0.00	0.00	0.00	16.07	30.00	0.	0.00
47	6.500	29.29	0.01	3.78	53.46	3.73	8.17	6.53	8.17	6.53	3.05	0.00	0.00	0.00	0.00	16.46	30.00	0.	0.00
48	6.400	29.27	0.01	3.77	53.47	3.65	8.21	6.43	8.21	6.43	3.00	0.00	0.00	0.00	0.00	16.85	30.00	0.	0.00
49	6.300	29.24	0.01	3.76	53.49	3.59	8.25	6.35	8.25	6.35	2.95	0.00	0.00	0.00	0.00	17.24	30.00	0.	0.00
50	6.200	29.22	0.01	3.75	53.50	3.54	8.28	6.27	8.28	6.27	2.90	0.00	0.00	0.00	0.00	17.64	30.00	0.	0.00
51	6.100	29.19	0.01	3.73	53.52	3.50	8.31	6.21	8.31	6.21	2.86	0.00	0.00	0.00	0.00	18.03	30.00	0.	0.00
52	6.000	29.17	0.01	3.72	53.53	3.46	8.34	6.15	8.34	6.15	2.83	0.00	0.00	0.00	0.00	18.42	30.00	0.	0.00
53	5.900	29.14	0.01	3.71	53.55	3.44	8.36	6.10	8.36	6.10	2.80	0.00	0.00	0.00	0.00	18.82	30.00	0.	0.00
54	5.800	29.12	0.01	3.70	53.56	3.42	8.38	6.05	8.38	6.05	2.77	0.00	0.00	0.00	0.00	19.21	30.00	0.	0.00
55	5.700	29.09	0.01	3.69	53.57	3.40	8.40	6.01	8.40	6.01	2.75	0.00	0.00	0.00	0.00	19.60	30.00	0.	0.00
56	5.600	29.07	0.01	3.68	53.58	3.39	8.41	5.98	8.41	5.98	2.73	0.00	0.00	0.00	0.00	20.00	30.00	0.	0.00
57	5.500	29.04	0.01	3.67	53.60	3.38	8.43	5.94	8.43	5.94	2.71	0.00	0.00	0.00	0.00	20.39	30.00	0.	0.00
58	5.400	29.02	0.01	3.66	53.61	3.37	8.44	5.92	8.44	5.92	2.70	0.00	0.00	0.00	0.00	20.78	30.00	0.	0.00
59	5.300	28.99	0.01	3.65	53.62	3.36	8.45	5.89	8.45	5.89	2.68	0.00	0.00	0.00	0.00	21.18	30.00	0.	0.00
60	5.200	28.97	0.01	3.64	53.63	3.36	8.46	5.87	8.46	5.87	2.67	0.00	0.00	0.00	0.00	21.57	30.00	0.	0.00
61	5.100	28.94	0.01	3.63	53.64	3.36	8.47	5.85	8.47	5.85	2.66	0.00	0.00	0.00	0.00	21.96	30.00	0.	0.00
62	5.000	28.92	0.01	3.62	53.65	3.36	8.48	5.84	8.48	5.84	2.65	0.00	0.00	0.00	0.00	22.36	30.00	0.	0.00
63	4.900	28.89	0.01	3.61	53.66	3.35	8.49	5.82	8.49	5.82	2.64	0.00	0.00	0.00	0.00	22.75	30.00	0.	0.00

64	4.800	28.87	0.01	3.60	53.67	3.35	8.50	5.81	8.50	5.81	2.63	0.00	0.00	0.00	0.00	23.14	30.00	0.	0.00
65	4.700	28.84	0.01	3.59	53.68	3.35	8.51	5.80	8.51	5.80	2.63	0.00	0.00	0.00	0.00	23.53	30.00	0.	0.00
66	4.600	28.82	0.01	3.58	53.68	3.34	8.52	5.79	8.52	5.79	2.62	0.00	0.00	0.00	0.00	23.93	30.00	0.	0.00
67	4.500	28.79	0.01	3.57	53.68	3.33	8.52	5.78	8.52	5.78	2.62	0.00	0.00	0.00	0.00	24.32	30.00	0.	0.00
68	4.400	28.77	0.01	3.57	53.67	3.31	8.53	5.78	8.53	5.78	2.61	0.00	0.00	0.00	0.00	24.71	30.00	0.	0.00
69	4.300	28.74	0.01	3.56	53.66	3.27	8.53	5.78	8.53	5.78	2.60	0.00	0.00	0.00	0.00	25.11	30.00	0.	0.00
70	4.200	28.72	0.01	3.56	53.64	3.20	8.53	5.78	8.53	5.78	2.60	0.00	0.00	0.00	0.00	25.50	30.00	0.	0.00

FINAL REPORT HEADWATER BIG CREEK WATERSHED MODEL
REACH NO. 3 BGC3 TO BGC4 BIG CREEK CALIBRATION RUN

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

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
71	UPR RCH	0.36430	28.72	0.01	3.56	53.64	3.20	8.53	5.78	8.53	5.78	2.60	0.00	0.00	0.00	25.50	0.00	0.00
EACH	INCR	0.00027	28.72	0.00	0.00	0.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m^3/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m^3	SURFACE AREA m^2	X-SECT AREA m^2	TIDAL PRISM m^3	TIDAL VELO m/s	DISPRSN m^2/s	MEAN VELO m/s
71	4.20	4.10	0.36457	33.9	0.00301	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.635	0.003
72	4.10	4.00	0.36484	33.9	0.00301	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.636	0.003
73	4.00	3.90	0.36511	33.9	0.00301	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.636	0.003
74	3.90	3.80	0.36538	33.8	0.00301	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.637	0.003
75	3.80	3.70	0.36565	33.8	0.00302	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.637	0.003
76	3.70	3.60	0.36592	33.8	0.00302	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.638	0.003
77	3.60	3.50	0.36619	33.8	0.00302	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.638	0.003
78	3.50	3.40	0.36646	33.7	0.00302	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.638	0.003
79	3.40	3.30	0.36673	33.7	0.00302	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.639	0.003
80	3.30	3.20	0.36700	33.7	0.00303	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.639	0.003
81	3.20	3.10	0.36727	33.7	0.00303	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.640	0.003
82	3.10	3.00	0.36754	33.6	0.00303	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.640	0.003
83	3.00	2.90	0.36781	33.6	0.00303	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.641	0.003
84	2.90	2.80	0.36808	33.6	0.00304	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.641	0.003
85	2.80	2.70	0.36835	33.6	0.00304	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.642	0.003
86	2.70	2.60	0.36862	33.5	0.00304	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.642	0.003
87	2.60	2.50	0.36889	33.5	0.00304	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.643	0.003
88	2.50	2.40	0.36916	33.5	0.00304	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.643	0.003
89	2.40	2.30	0.36943	33.5	0.00305	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.644	0.003
90	2.30	2.20	0.36970	33.4	0.00305	0.38	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.644	0.003
TOT						7.65			242535.39	173735.97					
AVG					0.0030		1.40	86.87			121.27				
CUM						48.03									

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

ELEM NO.	ENDING DIST	SAT D.O.	REAER RATE	BOD#1 DECAY	BOD#1 SETT	ABOD#1 DECAY	BOD#2 DECAY	BOD#2 SETT	ABOD#2 DECAY	BKGD SOD	FULL SOD	CORR SOD	ORGN DECAY	ORGN SETT	NH3 DECAY	NH3 SRCE	DENIT RATE	PO4 SRCE	ALG PROD	MAC PROD	COLI DECAY	NCM DECAY	NCM SETT

		mg/L	1/da	1/da	1/da	1/da	1/da	1/da	1/da	*	*	*	1/da	1/da	1/da	*	1/da	*	**	**	1/da	1/da	1/da
71	4.100	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.64	3.64	3.64	0.17	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
72	4.000	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.64	3.64	3.64	0.17	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
73	3.900	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.17	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
74	3.800	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
75	3.700	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
76	3.600	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
77	3.500	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
78	3.400	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
79	3.300	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
80	3.200	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
81	3.100	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
82	3.000	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.24	0.00	0.00	0.00
83	2.900	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.23	0.00	0.00	0.00
84	2.800	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.23	0.00	0.00	0.00
85	2.700	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.23	0.00	0.00	0.00
86	2.600	7.73	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.23	0.00	0.00	0.00
87	2.500	7.74	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.63	3.63	3.63	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.23	0.00	0.00	0.00
88	2.400	7.74	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.62	3.62	3.62	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.23	0.00	0.00	0.00
89	2.300	7.74	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.62	3.62	3.62	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.23	0.00	0.00	0.00
90	2.200	7.74	0.59	0.25	0.25	0.00	0.04	0.25	0.00	3.62	3.62	3.62	0.16	0.12	0.00	0.00	0.00	0.00	0.00	2.23	0.00	0.00	0.00
AVG 20 DEG C RATE			0.50	0.17	0.20	0.00	0.03	0.20	0.00	2.10			0.12	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
71	4.100	28.72	0.01	3.55	53.60	3.08	8.52	5.78	8.52	5.78	2.59	0.00	0.00	0.00	0.00	26.68	30.00	0.	0.00
72	4.000	28.71	0.01	3.55	53.56	2.98	8.52	5.78	8.52	5.78	2.58	0.00	0.00	0.00	0.00	27.86	30.00	0.	0.00
73	3.900	28.71	0.01	3.55	53.52	2.89	8.51	5.79	8.51	5.79	2.57	0.00	0.00	0.00	0.00	29.04	30.00	0.	0.00
74	3.800	28.71	0.01	3.55	53.48	2.82	8.51	5.79	8.51	5.79	2.57	0.00	0.00	0.00	0.00	30.22	30.00	0.	0.00
75	3.700	28.70	0.01	3.54	53.44	2.76	8.50	5.79	8.50	5.79	2.56	0.00	0.00	0.00	0.00	31.40	30.00	0.	0.00
76	3.600	28.70	0.01	3.54	53.40	2.71	8.50	5.80	8.50	5.80	2.56	0.00	0.00	0.00	0.00	32.58	30.00	0.	0.00
77	3.500	28.70	0.01	3.54	53.36	2.67	8.50	5.80	8.50	5.80	2.55	0.00	0.00	0.00	0.00	33.76	30.00	0.	0.00
78	3.400	28.70	0.01	3.54	53.32	2.63	8.49	5.80	8.49	5.80	2.55	0.00	0.00	0.00	0.00	34.94	30.00	0.	0.00
79	3.300	28.69	0.01	3.53	53.29	2.60	8.49	5.81	8.49	5.81	2.55	0.00	0.00	0.00	0.00	36.12	30.00	0.	0.00
80	3.200	28.69	0.01	3.53	53.25	2.58	8.49	5.81	8.49	5.81	2.55	0.00	0.00	0.00	0.00	37.30	30.00	0.	0.00
81	3.100	28.69	0.01	3.53	53.21	2.55	8.49	5.81	8.49	5.81	2.55	0.00	0.00	0.00	0.00	38.48	30.00	0.	0.00
82	3.000	28.68	0.01	3.53	53.17	2.54	8.49	5.81	8.49	5.81	2.55	0.00	0.00	0.00	0.00	39.66	30.00	0.	0.00
83	2.900	28.68	0.01	3.52	53.13	2.52	8.49	5.81	8.49	5.81	2.54	0.00	0.00	0.00	0.00	40.84	30.00	0.	0.00
84	2.800	28.68	0.01	3.52	53.10	2.51	8.49	5.82	8.49	5.82	2.54	0.00	0.00	0.00	0.00	42.02	30.00	0.	0.00
85	2.700	28.67	0.01	3.52	53.06	2.50	8.49	5.82	8.49	5.82	2.54	0.00	0.00	0.00	0.00	43.20	30.00	0.	0.00
86	2.600	28.67	0.01	3.52	53.03	2.49	8.49	5.82	8.49	5.82	2.54	0.00	0.00	0.00	0.00	44.38	30.00	0.	0.00
87	2.500	28.67	0.01	3.51	53.00	2.49	8.49	5.82	8.49	5.82	2.54	0.00	0.00	0.00	0.00	45.56	30.00	0.	0.00
88	2.400	28.67	0.01	3.51	52.97	2.48	8.49	5.82	8.49	5.82	2.54	0.00	0.00	0.00	0.00	46.74	30.00	0.	0.00
89	2.300	28.66	0.01	3.51	52.95	2.48	8.49	5.82	8.49	5.82	2.54	0.00	0.00	0.00	0.00	47.92	30.00	0.	0.00
90	2.200	28.66	0.01	3.51	52.94	2.47	8.49	5.82	8.49	5.82	2.54	0.00	0.00	0.00	0.00	49.10	30.00	0.	0.00

STREAM SUMMARY BIG CREEK WATERSHED MODEL
HEADWATER BIG CREEK CALIBRATION RUN

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 TRAVEL TIME       =          48.03 DAYS

 MAXIMUM EFFLUENT  =          44.92 PERCENT

 FLOW              =   0.14060 TO    0.36970   m³/s
 DISPERSION        =   0.3527  TO    0.7119    m²/s
 VELOCITY          =   0.00155 TO    0.00305   m/s
 DEPTH             =   1.40    TO    1.58      m
 WIDTH             =  59.44    TO   86.87      m

 BOD DECAY         =    0.25   TO    0.30      per day
 NH3 DECAY         =    0.00   TO    0.00      per day
 SOD               =    0.52   TO    3.64      g/m²/d
 NH3 SOURCE        =    0.00   TO    0.00      g/m²/d
 REAERATION        =    0.52   TO    0.59      per day
 BOD SETTLING      =    0.25   TO    0.25      per day
 NBOD DECAY        =    0.12   TO    0.17      per day
 NBOD SETTLING     =    0.12   TO    0.13      per day

 TEMPERATURE       =   28.66   TO   29.44      deg C
 DISSOLVED OXYGEN  =    2.47   TO    5.68      mg/L


     .....EXECUTION COMPLETED
```

Appendix B2 – Calibration Justification

Big Creek 101506 Calibration Justification			
DATA TYPE 3 - PROGRAM CONSTANTS			
CONSTANT NAME	VALUE	UNITS	DATA SOURCE
KL MINIMUM	0.7	m/day	The minimum KL of 2.3 ft/day converted to 0.70 m/day.
INHIBITION CONTROL VALUE	3		The water column dissolved oxygen demand is assumed to come primarily from facultative bacteria under anoxic conditions and SOD is not influenced by modeled dissolved oxygen levels in the upper water column.
K2 MAXIMUM	25	1/day at 20 deg C	EPA Policy in the absence of a measured value.
HYDRAULIC CALCULATION METHOD	2		The low slopes in this waterbody cause a substantial amount of water to be present during critical flow conditions. This method allows the model to predict a more accurate depth and width during low flow conditions.
SETTLING RATE UNITS	2		By making the settling rate a velocity the rate becomes dependent upon the depth.
ALGAE OXYGEN PRODUCTION	0		Standard practice for steady state calibration to a wide variation in DO.
DISPERSION EQUATION	3		Equation used to account for advective flows.
OCEAN EXCHANGE RATIO	0		This was done to allow dispersion in the model but not to force the bottom element through the boundary conditions.

Big Creek 101506 Calibration Justification						
DATA TYPE 8 - REACH IDENTIFICATION DATA						
Reach	ID	Name	Upstream River Kilometer	Downstream River Kilometer	Element Length, meters	Data Source
1	BGC	BGC01 to BGC02	11.20	7.10	100.0000	ARC MAP Calc.
2	BGC	BGC02 to BGC03	7.10	4.20	100.0000	ARC MAP Calc.
3	BGC	BGC03 to BGC04	4.20	2.20	100.0000	ARC MAP Calc.

Big Creek 101506 Calibration Justification									
		DATA TYPE 9 - ADVECTIVE HYDRAULIC COEFFICIENTS							
Reach	Name	Width Coeff. "a"	Width Exp. "b"	Width Const. "c"	Data Source	Depth Coeff. "d"	Depth Exp. "e"	Depth Const. "f"	Data Source
1	BGC01 to BGC02	0	0	59.436	BGC02	0	0	1.527	BGC02
2	BGC02 to BGC03	0	0	75.895	BGC03	0	0	1.576	BGC03
3	BGC03 to BGC04	0	0	86.868	BGC04	0	0	1.396	BGC04

Big Creek 101506 CALIBRATION JUSTIFICATION						
DATA TYPE 10 - DISPERSIVE HYDRAULIC COEFFICIENTS						
Reach	a	Data Source	b	c	d	Data Source
1	160	Calibration	0.8333	0.0	1.0	Constant values used for advective dispersion
2	160	Calibration	0.8333	0.0	1.0	Constant values used for advective dispersion
3	160	Calibration	0.8333	0.0	1.0	Constant values used for advective dispersion

Big Creek 101506 Calibration Justification										
DATA TYPE 11-INITIAL CONDITIONS										
Reach	Name	DO, mg/l	Data Source	Temp, deg C	Sal, ppt	Data Source	Chlorophyll a	Data Source	Macrophytes	Data Source
1	BGC01 to BGC02	3.44	Average(BGC01 min + 1,BGC02 min + 1)	28.83	0.01	Average(BGC01,BGC02)	16.5	BGC01	30.00	Best Professional Judgement from field observation of floating and rooted macrophytes.
2	BGC02 to BGC03	3.96	Average(BGC02 min + 1,BGC03 min + 1)	29.44	0.01	Average(BGC02,BGC03)	14.1	BGC02	30.00	Best Professional Judgement from field observation of floating and rooted macrophytes.
3	BGC03 to BGC04	2.96	Average(BGC03 min + 1,BGC04 min + 1)	28.72	0.01	Average(BGC03,BGC04)	25.5	BGC03	30.00	Best Professional Judgement from field observation of floating and rooted macrophytes.

Big Creek 101506 Calibration Justification													
		DATA TYPE 12 - REAERATION, SEDIMENT OXYGEN DEMAND AND BOD COEFFICIENTS				DATA TYPE 12 - REAERATION, SEDIMENT OXYGEN DEMAND AND BOD COEFFICIENTS							
REACH	NAME	K2 OPT	Data Source	BKGRND SOD, gmO2/m2/day at 20 deg C	Data Source	Aerobic BOD1 Dec Rate (1/day)	Data Source	BOD1 SETT RATE (1/day)	Data Source	Aerobic BOD2 Dec Rate (1/day)	Data Source	BOD2 SETT RATE (1/day)	Data Source
1	BGC01 to BGC02	11	Texas Equation	0.30	Calibration	0.1806	Average (BGC01,BGC02)	0.2	Calibration	0.0344	Average (BGC01,BGC02)	0.2	Calibration
2	BGC02 to BGC03	11	Texas Equation	1.30	Calibration	0.1915	Average (BGC02,BGC03)	0.2	Calibration	0.0306	Average (BGC02,BGC03)	0.2	Calibration
3	BGC03 to BGC04	11	Texas Equation	2.10	Calibration	0.1666	Average (BGC03,BGC04)	0.2	Calibration	0.0283	Average (BGC03,BGC04)	0.2	Calibration

Big Creek 101506 Calibration Justification

DATA TYPE 13 - NITROGEN AND PHOSPHORUS COEFFICIENTS

Reach	Name	NBOD decay rate, 1/day	Data Source	NBOD settling rate, 1/day	Data Source
1	BGC01 to BGC02	0.0868	Average (BGC01,BGC02)	0.10	Calibration
2	BGC02 to BGC03	0.0886	Average (BGC02,BGC03)	0.10	Calibration
3	BGC03 to BGC04	0.1173	Average (BGC03,BGC04)	0.10	Calibration

Big Creek 101506 Calibration Justification

DATA TYPES 16 - INCREMENTAL DATA FOR TEMP AND CONS

Reach	Reach Name	Incr. Inflow, m3	Data Source	Temp	Salinity ppt	Data Source	Chl	Cond	Data Source
1	BGC1 to BGC2	0.0125	BGC2 Minimal Flow - (BGC1 Minimal Flow + Cainey Bayou)	28.83	0.01	Average(BGC01,BGC02)		80.0	Calibration
2	BGC2 to BGC3	0.0879	BGC3 - BGC2 Minimal Flow	29.44	0.01	Average(BGC02,BGC03)	2.5	55.0	Calibration
3	BGC3 to BGC4	0.0054	BGC4 - BGC3 Minimal Flow	28.72	0.01	Average(BGC03,BGC04)			Calibration

Big Creek 101506 Calibration Justification

DATA TYPES 17 - INCREMENTAL DATA FOR DO, BOD, AND NITROGEN

Reach	Reach Name	DO, mg/l	Data Source
1	BDL1 to BDL2	2.0	Normal Groundwater DO
2	BDL2 to BDL3	2.0	Normal Groundwater DO
3	BDL3 to BDL4	2.0	Normal Groundwater DO

Big Creek 101506 Calibration Justification

DATA TYPE 19 - NONPOINT SOURCES

Reach	Reach Name	Length of Reach, km	UCBOD1, kg/day	UCBOD2, kg/day	NBOD, kg/day	Data Source
1	BGC01 to BGC02	4.10	1400.00	950.00	410.00	Calibration
2	BGC02 to BGC03	2.90	1650.00	620.00	245.00	Calibration
3	BGC03 to BGC04	2.00	1020.00	410.00	175.00	Calibration

Big Creek 101506 Calibration Justification

DATA TYPES 20 - HEADWATER DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES

Headwater Name	Element No.	Logical Unit Number	Headwater Flow, cms	Temp, deg C	Salinity	Chlorides	Conductivity	Data Source
Headwater 1	1	1	0.1403	27.89	0.01	4.4	52.70	BGC01 Minimal Flow = Headwater Flow, BGC01 Continuous Monitoring - Temp and Salinity, BGC01 Lab Data - Chlorides, BGC01 Insitu - Conductivity

Big Creek 101506 Calibration Justification

DATA TYPES 21 - HEADWATER DATA FOR DO, BOD, AND NITROGEN

Headwater Name	Dissolved Oxygen, mg/L	UCBOD1, mg/l	UCBOD2, mg/l	NBOD, mg/l	Data Source
Headwater 1	2.15	9.7808	5.8308	3.128	1 + BGC01 Continuous Monitoring Minimum - DO Lab Data (BGC01) - UCBOD1, UCBOD2, AND NBOD

Big Creek 101506 Calibration Justification

DATA TYPES 22 - HEADWATER DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES

Headwater Name	Chlorophyll a, ug/L	Date Source			
Headwater 1	16.5	BGC01 Lab Data			

Big Creek 101506 Calibration Justification

	DATA TYPES 24 - WASTELOAD DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES								
Wasteload / Withdrawal Name	**EL #**	**Flow, cms**	**Temperature, deg C**	**Data Source**	**Chlorides**	**Data Source**	**Salinity**	**Conductivity**	**Data Source**
Cainey Bayou	37	0.1236	27.42	CAB01 Insitu	3.7	CAB01 Lab Data	0.01	51.5	CAB01 Insitu - Conductivity and Salinity

Big Creek 101506 Calibration Justification

DATA TYPES 25 - WASTELOAD DATA FOR DO, BOD, AND NITROGEN							
Wasteload / Withdrawal Name	**EL #**	**DO, mg/l**	**Data Source**	**UCBOD1, mg/l**	**UCBOD2, mg/l**	**UNBOD, mg/l**	**Data Source**
Cainey Bayou	37	2.70	CAB01 Insitu	9.3222	6.1034	3.3513	CAB01 Lab Data

Big Creek 101506 Calibration Justification

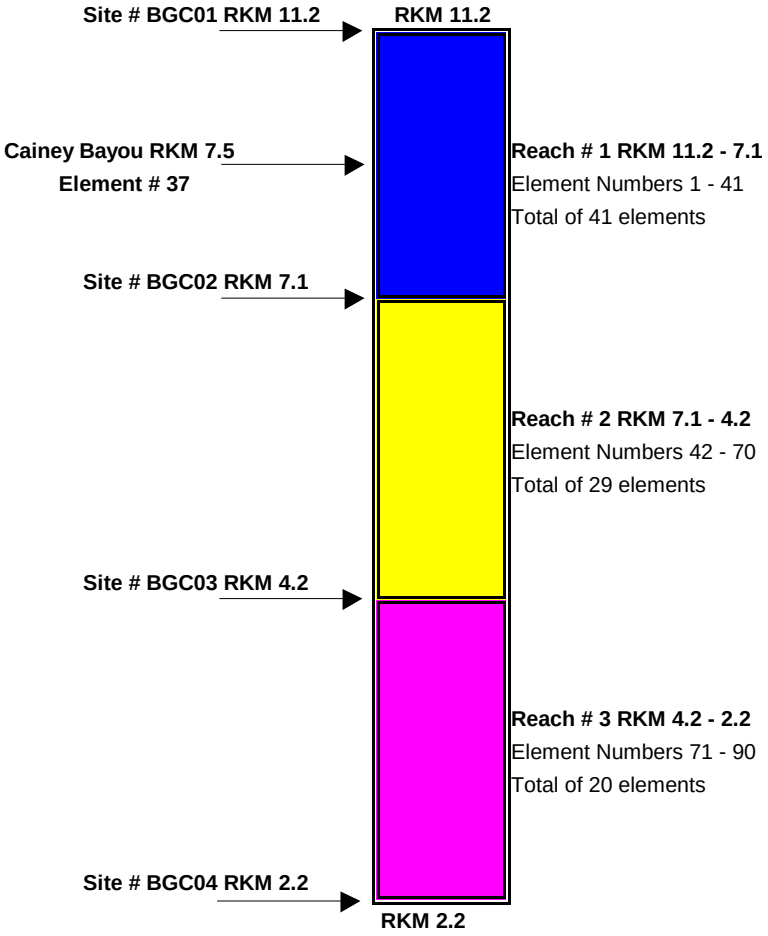
DATA TYPES 27 - LOWER BOUNDARY CONDITIONS

Parameter	Value	Units	Data Source
TEMPERATURE	28.66	^{O}C	BGC05 Continuous Monitoring
SALINITY	0.01	ppt	BGC05 Continuous Monitoring
CHLORIDES	2.8	ppm	BGC05 Lab Data
CONDUCTIVITY	47.70	umhos/cm	BGC05 Insitu
DISSOLVED OXYGEN	3.65	mg/L	1 + BGC05 Continuous Monitoring Minimum
CBOD1	7.8370	mg/L	BGC05 Lab Data
CBOD2	5.0311	mg/L	BGC05 Lab Data
CHLOROPHYLL A	49.1	ug/L	BGC05 Lab Data
NBOD	2.4180	mg/L	BGC05 Lab Data

Appendix C - Calibration Model Development

Appendix C1 – Vector Diagram

Big Creek Model Layout Subsegment 101506



Appendix C2 – Reach Setup

Big Creek 101506					Modeled Length	Element Length				
Reach #	Description	Headwater Yes/No	Starting modeled Kilometer	Ending modeled Kilometer	kilometers	kilometers	Element Count	Cumulative Elements	Begin Element #	End Element #
1	BGC01 - BGC02	Yes	11.2	7.1	4.10	0.100	41	41	1	41
2	BGC02 - BGC03	No	7.1	4.2	2.90	0.100	29	70	42	70
3	BGC03 - BGC04	No	4.2	2.2	2.00	0.100	20	90	71	90

Appendix C3 – Calibration Loading

Calibration Model Non-Point Load Equivalent Calculations:

Modeled stream or water body: **BIG CREEK (SUBSEGMENT 101506)**

Shaded cells are input values for calculations. If modeling the nitrogen series, be sure that column "I" is clear of all values.

REACH NUMBER & DESCRIPTION	Calibration Model Reach Length	Calibration Model Average Reach Width	Calibration Model UCBOD1 Nonpoint loading	Calibration Model UCBOD2 Nonpoint loading	Calibration Model Total UCBOD Nonpoint loading	Calibration Model UNBOD Nonpoint loading	Calibration Model Total UNBOD Nonpoint loading	Calibration Model UCBOD1 Nonpoint loading	Calibration Model UCBOD2 Nonpoint loading	Calibration Model Total UCBOD Nonpoint loading	Calibration Model Total UNBOD Nonpoint loading	Calibration Model SOD	Calibration Model TOTAL Benthic Load
	km	meters	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]
BGC01 - BGC02	4.10	59.44	1400.00	950.00	2350.00	410.00	410.00	5.745	3.898	9.643	1.682	0.30	**11.63**
BGC02 - BGC03	2.90	75.90	1650.00	620.00	2270.00	245.00	245.00	7.497	2.817	10.314	1.113	1.30	**12.73**
BGC03 - BGC04	2.00	86.87	1020.00	410.00	1430.00	175.00	175.00	5.871	2.360	8.231	1.007	2.10	**11.34**

Appendix C4 – Critical Flow Calculations

Estimated Immeasurable flow for Big Creek 101506

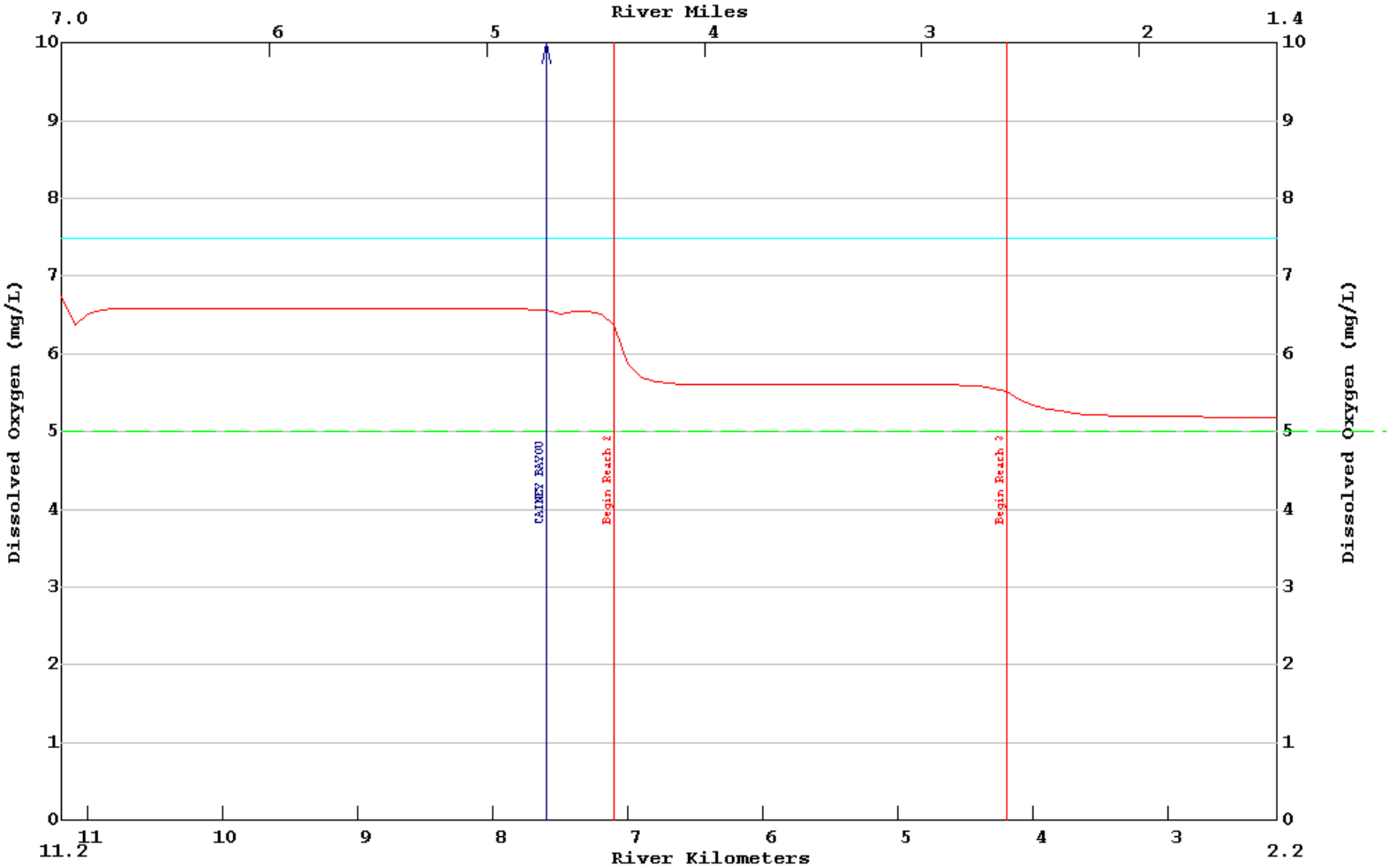
Site	Area	Velocity	Flow (cfs)	Flow (cms)
BGC01	495.57	0.01	4.956	0.1403
BGC02	976.16	0.01	9.762	0.2764
BGC03	1286.465	0.01	12.865	0.3643
BGC04	1305.62	0.01	13.056	0.3697
CAB01	436.525	0.01	4.365	0.1236

Big Creek 101506				
Calibration Flow Input Values				
SITE	**Calculation**	**Q (CMS)**	**Cumulative**	**Waterbody**
Headwater	BGC1 Minimal Flow	0.1403	0.1403	Big Creek
Trib	CAB01	0.1236	0.2639	Cainey Bayou
Incremental Reach 1	BGC2 Minimal Flow - (BGC1 Minimal Flow + Cainey Bayou)	0.0125	0.2764	Big Creek
Incremental Reach 2	BGC3 - BGC2 Minimal Flow	0.0879	0.3643	Big Creek
Incremental Reach 3	BGC4 - BGC3 Minimal Flow	0.0054	0.3697	Big Creek

Appendix D – Projection Model Input and Output Data Sets

Appendix D1 –Summer Output Graphs and Input, Overlay, and Output Files

LA-QUAL Version 8.00 Run at 08:01 on 01/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKSUM8
BIG CREEK SUMMER 80% REDUCTION IN MAN-MADE RUN min= 5.19 max= 6.74
:MAINSTEM



BIG CREEK 101506 SUMMER PROJECTION INPUT DATA SET

```
CNTROL01     BIG CREEK WATERSHED MODEL
CNTROL02     BIG CREEK SUMMER 80% REDUCTION IN MAN-MADE RUN
CNTROL04 YES METRIC UNITS
ENDATA01
MODOPT01  NO TEMPERATURE
MODOPT02  NO SALINITY
MODOPT03 YES CONSERVATIVE MATERIAL  I = CHLORIDES                  IN MG/L
MODOPT04 YES CONSERVATIVE MATERIAL II = CONDUCTIVITY               IN MG/L
MODOPT05 YES DISSOLVED OXYGEN
MODOPT06 YES BOD1 BIOCHEMICAL OXYGEN DEMAND
MODOPT06 YES BOD2 BIOCHEMICAL OXYGEN DEMAND
MODOPT08 YES NBOD OXYGEN DEMAND
MODOPT10  NO PHOSPHORUS
MODOPT11  NO CHLOROPHYLL A
MODOPT12  NO MACROPHYTES
MODOPT13  NO COLIFORM
ENDATA02
PROGRAM  KL MINIMUM                        =     0.7
PROGRAM  INHIBITION CONTROL VALUE          =     3.
PROGRAM  K2 MAXIMUM                        =     25.0
PROGRAM  HYDRAULIC CALCULATION METHOD      =     2.
PROGRAM  SETTLING RATE UNITS               =     2.
PROGRAM  ALGAE OXYGEN PROD                 =     0.
PROGRAM  DISPERSION EQUATION               =     3.
PROGRAM  OCEAN EXCHANGE RATIO              =     0.0
ENDATA03
!Temperature Correction Constants
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ******** ********
ENDATA04
ENDATA05
ENDATA06
ENDATA07
!Reach Identification Data
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
```

```
!          ***  -- ********************************----------*********----------
!           R#  ID   SITE NAME                          RKM        RKM    LENGTH
REACH ID     1  BGC   BGC1 TO BGC2                     11.2        7.1      0.1
REACH ID     2  BGC   BGC2 TO BGC3                      7.1        4.2      0.1
REACH ID     3  BGC   BGC3 TO BGC4                      4.2        2.2      0.1
ENDATA08
!Advective Hydraulic Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!          ***  -------*******-------*******-------*******-------*******
!                a      b       c     d      e        f
!               WIDTH  WIDTH   WIDTH DEPTH  DEPTH   DEPTH
!           R#  COEFF   EXP    CONST COEFF   EXP    CONST SLOPE MANNING
HYDR-1       1   0.00   0.00   59.436  0.00   0.00   1.527
HYDR-1       2   0.00   0.00   75.895  0.00   0.00   1.576
HYDR-1       3   0.00   0.00   86.868  0.00   0.00   1.396
ENDATA09
!Dispersive Hydraulic Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!          ***  -----**********----------**********----------
!               TIDAL
!           R#  RANGE    a          b         c         d
HYDR-2       1   1.0     160.0    0.8333      0.0       1.0
HYDR-2       2   1.0     160.0    0.8333      0.0       1.0
HYDR-2       3   1.0     160.0    0.8333      0.0       1.0
ENDATA10
!Initial Conditions
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!          ***  --------********--------********--------********--------********
!           R#    TEMP  SALINITY   DO     NH3 N  NIT NIT  PHOS   CHL A   MACROPHYTES
INITIAL      1    30.50  0.01     5.00                             10.0      10
INITIAL      2    30.50  0.01     5.00                             10.0      10
INITIAL      3    30.50  0.01     5.00                             10.0      10
ENDATA11
!Reaeration, Sediment Oxygen Demand and BOD Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8---------9
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!          ***  -----*****----- ******-------*******-------*******-------*******-------***
```

```
!                REA    KL                      CBOD1   CBOD1               CBOD2  CBOD2
!          R#    EQ    MIN              SOD    DECAY   SETT                DECAY   SETT
COEF-1      1  11.00                    0.114  0.1806  0.20                0.0344  0.20
COEF-1      2  11.00                    0.478  0.1915  0.20                0.0306  0.20
COEF-1      3  11.00                    0.803  0.1666  0.20                0.0283  0.20
ENDATA12
!Nitrogen and Phosphorus Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  -------*******-------*******-------*******-------
!              NBOD     NBOD
!          R#  DECAY    SETT
COEF-2      1  0.0868   0.10
COEF-2      2  0.0886   0.10
COEF-2      3  0.1173   0.10
ENDATA13
ENDATA14
!Coliform and Nonconservative Cofficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  -------*******-------*******
ENDATA15
!Incremental Data for Flow, Temperature, Salinity, and Conservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  ---------*********---------*********---------*********
!          R#   OUTFLOW   INFLOW  TEMP     SALINITY CHLORIDE  COND
INCR-1      1              0.0125  30.50                        80
INCR-1      2              0.0879  30.50                2.5     55
INCR-1      3              0.0054  30.50
ENDATA16
!Incremental Data for DO, BOD, and Nitrogen
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  ---------*********---------*********---------*********
!          R#      DO
INCR-2      1     2.00
INCR-2      2     2.00
INCR-2      3     2.00
ENDATA17
```

```
!Incremental Data for Phosphorus, Chlorophyll, Coliform and Nonconservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  ---------********---------********
!          R#
INCR-3      1
INCR-3      2
INCR-3      3
ENDATA18
!Nonpoint Source Data
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  ---------********---------********---------********
!          R#    CBOD1     NBOD                                CBOD2
NONPOINT    1   530.630   155.399                             360.070
NONPOINT    2   606.971    90.126                             228.074
NONPOINT    3   389.943    66.902                             156.742
ENDATA19
!Headwater Data for Flow, Temperature, Salinity, and Conservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ****  -------------------- *** --------********--------********--------
!         E#    NAME                      FLOW    TEMP  SALIN   CHLORIDE   COND
HDWTR-1     1  HEADWATER                 0.0028   30.50  0.01    4.4       52.7
ENDATA20
!Headwater Data for DO, BOD, and Nitrogen
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ****  ---------********---------********---------********
!          E#      DO      CBOD1    NBOD                        CB0D2
HDWTR-2     1      6.74   6.1200    1.520                       1.4600
ENDATA21
!Headwater Data for Phosphorus, Chlorophyll, Coliform, and Nonconservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ****  ---------********---------********
!          E#  PHOSPHOR   CHL A   COLIFORM  NONCONSERVATIVE
HDWTR-3     1              10.0
ENDATA22
ENDATA23
```

```
!Wasteload Data for Flow, Temperature, Salinity, and Conservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  --------------------*********---------*********---------*********
!          E#     NAME                FLOW      TEMP   SALINITY CHLORIDE  COND
WSTLD-1    37  CAINEY BAYOU          0.0028    30.50     0.01     3.7    51.5
ENDATA24
!Wasteload Data for DO, BOD, and Nitrogen
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  ---------*********-----*********---------*****---------*********
!          E#     DO       CBOD1         NBOD                            CBOD2
WSTLD-2    37    5.00      5.9600        1.6300                          1.5300
ENDATA25
!Wasteload Data for Phosphorus, Chlorophyll, Coliform, and Nonconservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  ---------*********---------*********
!          E#  PHOSPHOR  CHL A    COLIFORM NONCONSERVATIVE
WSTLD-3    37
ENDATA26
LOWER BC TEMPERATURE                        =  30.50
LOWER BC SALINITY                           =   0.01
LOWER BC CONSERVATIVE MATERIAL I            =   2.8
LOWER BC CONSERVATIVE MATERIAL II           =  47.7
LOWER BC DISSOLVED OXYGEN                   =   5.00
LOWER BC BOD1 BIOCHEMICAL OXYGEN DEMAND     =   7.8370
LOWER BC BOD2 BIOCHEMICAL OXYGEN DEMAND     =   5.0311
LOWER BC NBOD                               =   2.4180
LOWER BC CHLOROPHYLL A                      =  10.0
ENDATA27
!Dam Data
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  ******************* ** ******** ******** ********
ENDATA28
ENDATA29
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** **
```

```
NUMBER OF PLOTS = 1
NUMBER OF REACHES IN PLOT 1 =  3                          INCREMENT = 0.1
PLOT RCH  1  2  3
ENDATA30
OVERLAY 1 BIGCREEKOVLPROJ.TXT                   :MAINSTEM
ENDATA31
```

BIG CREEK 101506 SUMMER PROJECTION OUTPUT DATA SET

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LA-QUAL Version 8.00
Louisiana Department of Environmental Quality

Input file is O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKSUM80.txt
Output produced at 08:01 on 01/18/2007

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

CARD TYPE       CONTROL TITLES

TITLE01         BIG CREEK WATERSHED MODEL
TITLE02         BIG CREEK SUMMER 80% REDUCTION IN MAN-MADE RUN
CNTROL04  YES   METRIC UNITS
ENDATA01

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

CARD TYPE       MODEL OPTION

MODOPT01   NO   TEMPERATURE
MODOPT02   NO   SALINITY
MODOPT03  YES   CONSERVATIVE MATERIAL  I = CHLORIDES                 IN MG/L
MODOPT04  YES   CONSERVATIVE MATERIAL II = CONDUCTIVITY               IN MG/L
MODOPT05  YES   DISSOLVED OXYGEN
MODOPT06  YES   BOD1 BIOCHEMICAL OXYGEN DEMAND
MODOPT06  YES   BOD2 BIOCHEMICAL OXYGEN DEMAND
MODOPT08  YES   NBOD OXYGEN DEMAND
MODOPT10   NO   PHOSPHORUS
MODOPT11   NO   CHLOROPHYLL A
MODOPT12   NO   MACROPHYTES
MODOPT13   NO   COLIFORM
ENDATA02

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

CARD TYPE       DESCRIPTION OF CONSTANT                       VALUE

PROGRAM         KL MINIMUM                        =         0.70000 meters/day
PROGRAM         INHIBITION CONTROL VALUE          =         3.00000 (inhibit all rates but SOD)
PROGRAM         K2 MAXIMUM                        =        25.00000 per day
PROGRAM         HYDRAULIC CALCULATION METHOD      =         2.00000 (widths and depths)
PROGRAM         SETTLING RATE UNITS               =         2.00000 (values entered as per day)
PROGRAM         ALGAE OXYGEN PROD                 =         0.00000 mg O/ug chl a/day
PROGRAM         DISPERSION EQUATION               =         3.00000 (values entered as a function of D,Q,Vmean)
PROGRAM         OCEAN EXCHANGE RATIO              =         0.00000
ENDATA03

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

 CARD TYPE     RATE CODE     THETA VALUE

ENDATA04
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$$$ CONSTANTS TYPE 5 (TEMPERATURE DATA) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                        VALUE

ENDATA05

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

CARD TYPE       DESCRIPTION OF CONSTANT                        VALUE

ENDATA06

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

CARD TYPE       DESCRIPTION OF CONSTANT                        VALUE

ENDATA07

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

REACH ID      1   BG     BGC1 TO BGC2                   11.20  TO    7.10   0.1000     4.10      41        1     41
REACH ID      2   BG     BGC2 TO BGC3                    7.10  TO    4.20   0.1000     2.90      29       42     70
REACH ID      3   BG     BGC3 TO BGC4                    4.20  TO    2.20   0.1000     2.00      20       71     90
ENDATA08

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

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

HYDR-1        1   BG       0.000       0.000      59.436       0.000       0.000       1.527     0.00000   0.000
HYDR-1        2   BG       0.000       0.000      75.895       0.000       0.000       1.576     0.00000   0.000
HYDR-1        3   BG       0.000       0.000      86.868       0.000       0.000       1.396     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"

HYDR          1   BG      1.00      160.000         0.833          0.000          1.000
HYDR          2   BG      1.00      160.000         0.833          0.000          1.000
HYDR          3   BG      1.00      160.000         0.833          0.000          1.000
ENDATA10

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

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

INITIAL           1   BG       30.50      0.01      5.00      0.00      0.00      0.00     10.00     10.00
INITIAL           2   BG       30.50      0.01      5.00      0.00      0.00      0.00     10.00     10.00
INITIAL           3   BG       30.50      0.01      5.00      0.00      0.00      0.00     10.00     10.00
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

COEF-1     1   BG  11 TEXAS            0.000     0.000     0.000     0.114    0.181     0.200    0.000    0.000     0.034     0.200    0.000    0.000
COEF-1     2   BG  11 TEXAS            0.000     0.000     0.000     0.478    0.191     0.200    0.000    0.000     0.031     0.200    0.000    0.000
COEF-1     3   BG  11 TEXAS            0.000     0.000     0.000     0.803    0.167     0.200    0.000    0.000     0.028     0.200    0.000    0.000
ENDATA12

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

CARD TYPE      REACH  ID        NBOD      NBOD   ORGN CONV       NH3       NH3      PHOS     DENIT
                                DECA      SETT  TO NH3 SRCE     DECA      SRCE      SRCE      RATE

COEF-2           1   BG       0.087     0.100     0.000       0.000     0.000     0.000     0.000
COEF-2           2   BG       0.089     0.100     0.000       0.000     0.000     0.000     0.000
COEF-2           3   BG       0.117     0.100     0.000       0.000     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

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

INCR-1           1   BG       0.00000     0.01250     30.50      0.00      0.00     80.00   0.00305   0.00000
INCR-1           2   BG       0.00000     0.08790     30.50      0.00      2.50     55.00   0.03031   0.00000
INCR-1           3   BG       0.00000     0.00540     30.50      0.00      0.00      0.00   0.00270   0.00000
ENDATA16

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

CARD TYPE      REACH  ID          DO       BOD      NBOD                        BOD#2

INCR-2           1   BG        2.00      0.00      0.00      0.00      0.00      0.00
INCR-2           2   BG        2.00      0.00      0.00      0.00      0.00      0.00
INCR-2           3   BG        2.00      0.00      0.00      0.00      0.00      0.00
ENDATA17

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

 CARD TYPE      REACH  ID        PHOS     CHL A      COLI       NCM

INCR-3           1   BG        0.00      0.00      0.00      0.00
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INCR-3            2   BG        0.00      0.00      0.00      0.00
INCR-3            3   BG        0.00      0.00      0.00      0.00
ENDATA18

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

CARD TYPE      REACH  ID       BOD#1     NBOD       COLI       NCM        DO     BOD#2

NONPOINT          1   BG      530.63    155.40      0.00      0.00      0.00    360.07
NONPOINT          2   BG      606.97     90.13      0.00      0.00      0.00    228.07
NONPOINT          3   BG      389.94     66.90      0.00      0.00      0.00    156.74
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      MG/L      MG/L

HDWTR-1           1     HEADWATER               0   0.00280    0.099   30.50     0.01     4.400    52.700
ENDATA20

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

CARD TYPE     ELEMENT   NAME                        DO     BOD#1     NBOD                          BOD#2
                                                    mg/L      mg/L      mg/L      mg/L      mg/L      mg/L

HDWTR-2           1     HEADWATER                 6.74      6.12      1.52      0.00      0.00      1.46
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

HDWTR-3           1     HEADWATER                  0.00     10.00      0.00      0.00
ENDATA22

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

CARD TYPE   JUNCTION   UPSTRM     RIVER     NAME
             ELEMENT  ELEMENT     KILOM

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      MG/L      MG/L

WSTLD-1       37       7.60  CAINEY BAYOU          0.00280    0.09887    0.064   30.50     0.01     3.700    51.500
ENDATA24

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

WSTLD-2          37     CAINEY BAYOU                5.00      5.96      0.00      1.63      0.00      0.00      0.00      1.53
```

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ENDATA25

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

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

WSTLD-3          37     CAINEY BAYOU                0.00      0.00      0.00      0.00
ENDATA26

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

CARD TYPE    CONSTITUENT                    CONCENTRATION

LOWER BC     TEMPERATURE                        =     30.500     deg C
LOWER BC     SALINITY                           =      0.010     ppt
LOWER BC     CONSERVATIVE MATERIAL I            =      2.800     MG/L
LOWER BC     CONSERVATIVE MATERIAL II           =     47.700     MG/L
LOWER BC     DISSOLVED OXYGEN                   =      5.000     mg/L
LOWER BC     BOD1 BIOCHEMICAL OXYGEN DEMAND     =      7.837     mg/L
LOWER BC     BOD2 BIOCHEMICAL OXYGEN DEMAND     =      5.031     mg/L
LOWER BC     NBOD                               =      2.418     mg/L
LOWER BC     CHLOROPHYLL A                      =     10.000     µg/L
ENDATA27

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

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

ENDATA28

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

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

ENDATA29

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


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

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


OVERLAY 1 BIGCREEKOVLPROJ.TXT                  :MAINSTEM
ENDATA31



     .....NO ERRORS DETECTED IN INPUT DATA
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
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     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11


FINAL REPORT    HEADWATER                                    BIG CREEK WATERSHED MODEL
REACH NO.  1       BGC1 TO BGC2                              BIG CREEK SUMMER 80% REDUCTION IN MAN-MADE RUN
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********** REACH INPUTS **********

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
1	HDWTR	0.00280	30.50	0.01	4.40	52.70	6.74	6.12	1.46	6.12	1.46	1.52	0.00	0.00	0.00	10.00	0.00	0.00
EACH	INCR	0.00030	30.50	0.00	0.00	80.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	
37	WSTLD	0.00280	30.50	0.01	3.70	51.50	5.00	5.96	1.53	5.96	1.53	1.63	0.00	0.00	0.00	0.00	0.00	0.00

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
1	11.20	11.10	0.00310	0.0	0.00003	33.83	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.008	0.000
2	11.10	11.00	0.00341	0.0	0.00004	30.81	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.009	0.000
3	11.00	10.90	0.00371	0.0	0.00004	28.28	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.009	0.000
4	10.90	10.80	0.00402	0.0	0.00004	26.13	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.010	0.000
5	10.80	10.70	0.00432	0.0	0.00005	24.29	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.011	0.000
6	10.70	10.60	0.00463	0.0	0.00005	22.69	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.012	0.000
7	10.60	10.50	0.00493	0.0	0.00005	21.29	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.012	0.000
8	10.50	10.40	0.00524	0.0	0.00006	20.05	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.013	0.000
9	10.40	10.30	0.00554	0.0	0.00006	18.95	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.014	0.000
10	10.30	10.20	0.00585	0.0	0.00006	17.96	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.015	0.000
11	10.20	10.10	0.00615	0.0	0.00007	17.07	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.015	0.000
12	10.10	10.00	0.00646	0.0	0.00007	16.26	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.016	0.000
13	10.00	9.90	0.00676	0.0	0.00007	15.53	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.017	0.000
14	9.90	9.80	0.00707	0.0	0.00008	14.86	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.018	0.000
15	9.80	9.70	0.00737	0.0	0.00008	14.25	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.018	0.000
16	9.70	9.60	0.00768	0.0	0.00008	13.68	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.019	0.000
17	9.60	9.50	0.00798	0.0	0.00009	13.16	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.020	0.000
18	9.50	9.40	0.00829	0.0	0.00009	12.67	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.021	0.000
19	9.40	9.30	0.00859	0.0	0.00009	12.22	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.022	0.000
20	9.30	9.20	0.00890	0.0	0.00010	11.81	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.022	0.000
21	9.20	9.10	0.00920	0.0	0.00010	11.41	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.023	0.000
22	9.10	9.00	0.00951	0.0	0.00010	11.05	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.024	0.000
23	9.00	8.90	0.00981	0.0	0.00011	10.71	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.025	0.000
24	8.90	8.80	0.01012	0.0	0.00011	10.38	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.025	0.000
25	8.80	8.70	0.01042	0.0	0.00011	10.08	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.026	0.000
26	8.70	8.60	0.01073	0.0	0.00012	9.79	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.027	0.000
27	8.60	8.50	0.01103	0.0	0.00012	9.52	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.028	0.000
28	8.50	8.40	0.01134	0.0	0.00012	9.27	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.028	0.000
29	8.40	8.30	0.01164	0.0	0.00013	9.02	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.029	0.000
30	8.30	8.20	0.01195	0.0	0.00013	8.79	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.030	0.000
31	8.20	8.10	0.01225	0.0	0.00013	8.57	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.031	0.000
32	8.10	8.00	0.01256	0.0	0.00014	8.37	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.031	0.000
33	8.00	7.90	0.01286	0.0	0.00014	8.17	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.032	0.000
34	7.90	7.80	0.01317	0.0	0.00015	7.98	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.033	0.000
35	7.80	7.70	0.01347	0.0	0.00015	7.80	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.034	0.000

36	7.70	7.60	0.01378	0.0	0.00015	7.63	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.035	0.000
37	7.60	7.50	0.01688	16.6	0.00019	6.22	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.042	0.000
38	7.50	7.40	0.01719	16.3	0.00019	6.11	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.043	0.000
39	7.40	7.30	0.01749	16.0	0.00019	6.01	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.044	0.000
40	7.30	7.20	0.01780	15.7	0.00020	5.90	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.045	0.000
41	7.20	7.10	0.01810	15.5	0.00020	5.80	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.045	0.000
TOT						564.39			372110.91	243687.52					
AVG					0.0001		1.53	59.44			90.76				
CUM						564.39									

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

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
1	11.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
2	11.000	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
3	10.900	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
4	10.800	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
5	10.700	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
6	10.600	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
7	10.500	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
8	10.400	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
9	10.300	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
10	10.200	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
11	10.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
12	10.000	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
13	9.900	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
14	9.800	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
15	9.700	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
16	9.600	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
17	9.500	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
18	9.400	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
19	9.300	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
20	9.200	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
21	9.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
22	9.000	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
23	8.900	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
24	8.800	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
25	8.700	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
26	8.600	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
27	8.500	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
28	8.400	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
29	8.300	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
30	8.200	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
31	8.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
32	8.000	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
33	7.900	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
34	7.800	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
35	7.700	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
36	7.600	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
37	7.500	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
38	7.400	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
39	7.300	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
40	7.200	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00

41	7.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
AVG 20 DEG C RATE			0.46	0.18	0.20	0.00	0.03	0.20	0.00	0.11			0.09	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
1	11.100	30.50	0.01	4.18	54.05	6.36	3.32	2.58	3.32	2.58	1.44	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
2	11.000	30.50	0.01	3.86	56.08	6.51	2.69	2.97	2.69	2.97	1.41	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
3	10.900	30.50	0.01	3.58	57.81	6.56	2.60	3.05	2.60	3.05	1.41	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
4	10.800	30.50	0.01	3.34	59.30	6.58	2.59	3.06	2.59	3.06	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
5	10.700	30.50	0.01	3.13	60.60	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
6	10.600	30.50	0.01	2.94	61.75	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
7	10.500	30.50	0.01	2.78	62.76	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
8	10.400	30.50	0.01	2.63	63.67	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
9	10.300	30.50	0.01	2.50	64.49	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
10	10.200	30.50	0.01	2.38	65.23	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
11	10.100	30.50	0.01	2.27	65.90	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
12	10.000	30.50	0.01	2.17	66.51	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
13	9.900	30.50	0.01	2.08	67.07	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
14	9.800	30.50	0.01	2.00	67.58	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
15	9.700	30.50	0.01	1.92	68.06	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
16	9.600	30.50	0.01	1.85	68.50	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
17	9.500	30.50	0.01	1.79	68.91	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
18	9.400	30.50	0.01	1.73	69.29	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
19	9.300	30.50	0.01	1.67	69.64	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
20	9.200	30.50	0.01	1.62	69.97	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
21	9.100	30.50	0.01	1.57	70.28	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
22	9.000	30.50	0.01	1.52	70.56	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
23	8.900	30.50	0.01	1.48	70.83	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
24	8.800	30.50	0.01	1.44	71.08	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
25	8.700	30.50	0.01	1.40	71.31	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
26	8.600	30.50	0.01	1.36	71.51	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
27	8.500	30.50	0.01	1.33	71.69	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
28	8.400	30.50	0.01	1.30	71.85	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
29	8.300	30.50	0.01	1.28	71.97	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
30	8.200	30.50	0.01	1.26	72.05	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
31	8.100	30.50	0.01	1.25	72.07	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
32	8.000	30.50	0.01	1.25	72.02	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
33	7.900	30.50	0.01	1.26	71.86	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
34	7.800	30.50	0.01	1.29	71.55	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
35	7.700	30.50	0.01	1.34	71.03	6.57	2.59	3.06	2.59	3.06	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
36	7.600	30.50	0.01	1.42	70.22	6.56	2.61	3.05	2.61	3.05	1.41	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
37	7.500	30.50	0.01	1.54	69.09	6.52	2.66	3.02	2.66	3.02	1.41	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
38	7.400	30.50	0.01	1.54	68.87	6.55	2.62	3.03	2.62	3.03	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
39	7.300	30.50	0.01	1.56	68.46	6.55	2.60	3.02	2.60	3.02	1.38	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
40	7.200	30.50	0.01	1.60	67.80	6.52	2.61	2.96	2.61	2.96	1.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
41	7.100	30.50	0.01	1.67	66.78	6.37	2.67	2.79	2.67	2.79	1.25	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

FINAL REPORT HEADWATER BIG CREEK WATERSHED MODEL
REACH NO. 2 BGC2 TO BGC3 BIG CREEK SUMMER 80% REDUCTION IN MAN-MADE RUN

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

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
42	UPR RCH	0.01810	30.50	0.01	1.67	66.78	6.37	2.67	2.79	2.67	2.79	1.25	0.00	0.00	0.00	10.00	0.00	0.00
EACH	INCR	0.00303	30.50	0.00	2.50	55.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
42	7.10	7.00	0.02113	13.3	0.00018	6.55	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.041	0.000
43	7.00	6.90	0.02416	11.6	0.00020	5.73	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.047	0.000
44	6.90	6.80	0.02719	10.3	0.00023	5.09	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.053	0.000
45	6.80	6.70	0.03022	9.3	0.00025	4.58	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.059	0.000
46	6.70	6.60	0.03326	8.4	0.00028	4.16	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.065	0.000
47	6.60	6.50	0.03629	7.7	0.00030	3.82	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.071	0.000
48	6.50	6.40	0.03932	7.1	0.00033	3.52	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.077	0.000
49	6.40	6.30	0.04235	6.6	0.00035	3.27	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.083	0.000
50	6.30	6.20	0.04538	6.2	0.00038	3.05	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.089	0.000
51	6.20	6.10	0.04841	5.8	0.00040	2.86	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.095	0.000
52	6.10	6.00	0.05144	5.4	0.00043	2.69	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.101	0.000
53	6.00	5.90	0.05447	5.1	0.00046	2.54	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.106	0.000
54	5.90	5.80	0.05750	4.9	0.00048	2.41	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.112	0.000
55	5.80	5.70	0.06053	4.6	0.00051	2.29	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.118	0.001
56	5.70	5.60	0.06357	4.4	0.00053	2.18	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.124	0.001
57	5.60	5.50	0.06660	4.2	0.00056	2.08	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.130	0.001
58	5.50	5.40	0.06963	4.0	0.00058	1.99	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.136	0.001
59	5.40	5.30	0.07266	3.9	0.00061	1.91	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.142	0.001
60	5.30	5.20	0.07569	3.7	0.00063	1.83	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.148	0.001
61	5.20	5.10	0.07872	3.6	0.00066	1.76	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.154	0.001
62	5.10	5.00	0.08175	3.4	0.00068	1.69	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.160	0.001
63	5.00	4.90	0.08478	3.3	0.00071	1.63	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.166	0.001
64	4.90	4.80	0.08781	3.2	0.00073	1.58	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.172	0.001
65	4.80	4.70	0.09084	3.1	0.00076	1.52	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.178	0.001
66	4.70	4.60	0.09388	3.0	0.00078	1.47	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.183	0.001
67	4.60	4.50	0.09691	2.9	0.00081	1.43	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.189	0.001
68	4.50	4.40	0.09994	2.8	0.00084	1.39	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.195	0.001
69	4.40	4.30	0.10297	2.7	0.00086	1.34	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.201	0.001
70	4.30	4.20	0.10600	2.6	0.00089	1.31	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.207	0.001
TOT						77.66			346870.50	220095.48					
AVG					0.0004		1.58	75.90			119.61				
CUM						642.05									

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

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
42	7.000	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00

43	6.900	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
44	6.800	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
45	6.700	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
46	6.600	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
47	6.500	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
48	6.400	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
49	6.300	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
50	6.200	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
51	6.100	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
52	6.000	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
53	5.900	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
54	5.800	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
55	5.700	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
56	5.600	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
57	5.500	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
58	5.400	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
59	5.300	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
60	5.200	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
61	5.100	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
62	5.000	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
63	4.900	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
64	4.800	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
65	4.700	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
66	4.600	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
67	4.500	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
68	4.400	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
69	4.300	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
70	4.200	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
AVG 20 DEG C RATE			0.44	0.19	0.20	0.00	0.03	0.20	0.00	0.48			0.09	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
42	7.000	30.50	0.01	1.77	65.38	5.87	2.87	2.37	2.87	2.37	1.02	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
43	6.900	30.50	0.01	1.85	64.28	5.70	2.93	2.19	2.93	2.19	0.92	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
44	6.800	30.50	0.01	1.91	63.40	5.64	2.96	2.10	2.96	2.10	0.87	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
45	6.700	30.50	0.01	1.96	62.68	5.62	2.97	2.06	2.97	2.06	0.85	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
46	6.600	30.50	0.01	2.00	62.07	5.61	2.97	2.04	2.97	2.04	0.84	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
47	6.500	30.50	0.01	2.04	61.55	5.61	2.97	2.02	2.97	2.02	0.83	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
48	6.400	30.50	0.01	2.07	61.11	5.61	2.97	2.02	2.97	2.02	0.83	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
49	6.300	30.50	0.01	2.10	60.72	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
50	6.200	30.50	0.01	2.12	60.38	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
51	6.100	30.50	0.01	2.14	60.07	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
52	6.000	30.50	0.01	2.16	59.80	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
53	5.900	30.50	0.01	2.18	59.56	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
54	5.800	30.50	0.01	2.19	59.34	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
55	5.700	30.50	0.01	2.21	59.14	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
56	5.600	30.50	0.01	2.22	58.96	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
57	5.500	30.50	0.01	2.23	58.80	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
58	5.400	30.50	0.01	2.24	58.64	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
59	5.300	30.50	0.01	2.25	58.50	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
60	5.200	30.50	0.01	2.26	58.37	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

61	5.100	30.50	0.01	2.27	58.25	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
62	5.000	30.50	0.01	2.28	58.13	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
63	4.900	30.50	0.01	2.28	58.02	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
64	4.800	30.50	0.01	2.29	57.92	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
65	4.700	30.50	0.01	2.30	57.82	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
66	4.600	30.50	0.01	2.30	57.72	5.60	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
67	4.500	30.50	0.01	2.30	57.62	5.60	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
68	4.400	30.50	0.01	2.31	57.52	5.59	2.98	2.01	2.98	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
69	4.300	30.50	0.01	2.31	57.42	5.56	2.98	2.02	2.98	2.02	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
70	4.200	30.50	0.01	2.30	57.30	5.51	2.99	2.03	2.99	2.03	0.81	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

FINAL REPORT HEADWATER BIG CREEK WATERSHED MODEL
REACH NO. 3 BGC3 TO BGC4 BIG CREEK SUMMER 80% REDUCTION IN MAN-MADE RUN

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

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
71	UPR RCH	0.10600	30.50	0.01	2.30	57.30	5.51	2.99	2.03	2.99	2.03	0.81	0.00	0.00	0.00	10.00	0.00	0.00
EACH	INCR	0.00027	30.50	0.00	0.00	0.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
71	4.20	4.10	0.10627	2.6	0.00088	1.32	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.185	0.001
72	4.10	4.00	0.10654	2.6	0.00088	1.32	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.186	0.001
73	4.00	3.90	0.10681	2.6	0.00088	1.31	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.186	0.001
74	3.90	3.80	0.10708	2.6	0.00088	1.31	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.187	0.001
75	3.80	3.70	0.10735	2.6	0.00089	1.31	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.187	0.001
76	3.70	3.60	0.10762	2.6	0.00089	1.30	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.187	0.001
77	3.60	3.50	0.10789	2.6	0.00089	1.30	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.188	0.001
78	3.50	3.40	0.10816	2.6	0.00089	1.30	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.188	0.001
79	3.40	3.30	0.10843	2.6	0.00089	1.29	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.189	0.001
80	3.30	3.20	0.10870	2.6	0.00090	1.29	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.189	0.001
81	3.20	3.10	0.10897	2.6	0.00090	1.29	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.190	0.001
82	3.10	3.00	0.10924	2.6	0.00090	1.28	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.190	0.001
83	3.00	2.90	0.10951	2.6	0.00090	1.28	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.191	0.001
84	2.90	2.80	0.10978	2.6	0.00091	1.28	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.191	0.001
85	2.80	2.70	0.11005	2.5	0.00091	1.28	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.192	0.001
86	2.70	2.60	0.11032	2.5	0.00091	1.27	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.192	0.001
87	2.60	2.50	0.11059	2.5	0.00091	1.27	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.193	0.001
88	2.50	2.40	0.11086	2.5	0.00091	1.27	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.193	0.001
89	2.40	2.30	0.11113	2.5	0.00092	1.26	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.194	0.001
90	2.30	2.20	0.11140	2.5	0.00092	1.26	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.194	0.001
TOT						25.80			242535.39	173735.97					
AVG					0.0009		1.40	86.87			121.27				
CUM						667.85									

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

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
71	4.100	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
72	4.000	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
73	3.900	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
74	3.800	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
75	3.700	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
76	3.600	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
77	3.500	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
78	3.400	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
79	3.300	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
80	3.200	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
81	3.100	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
82	3.000	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
83	2.900	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
84	2.800	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
85	2.700	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
86	2.600	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
87	2.500	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
88	2.400	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
89	2.300	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
90	2.200	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
AVG 20 DEG C RATE			0.50	0.17	0.20	0.00	0.03	0.20	0.00	0.80			0.12	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* $g/m^2/d$ ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m^3	COLI #/100mL	NCM
71	4.100	30.50	0.01	2.30	57.16	5.41	3.00	2.05	3.00	2.05	0.81	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
72	4.000	30.50	0.01	2.29	57.02	5.34	3.02	2.06	3.02	2.06	0.80	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
73	3.900	30.50	0.01	2.29	56.88	5.30	3.02	2.08	3.02	2.08	0.80	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
74	3.800	30.50	0.01	2.28	56.73	5.26	3.03	2.09	3.03	2.09	0.80	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
75	3.700	30.50	0.01	2.28	56.59	5.24	3.03	2.10	3.03	2.10	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
76	3.600	30.50	0.01	2.27	56.45	5.22	3.04	2.10	3.04	2.10	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
77	3.500	30.50	0.01	2.26	56.31	5.21	3.04	2.11	3.04	2.11	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
78	3.400	30.50	0.01	2.26	56.17	5.21	3.04	2.11	3.04	2.11	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
79	3.300	30.50	0.01	2.25	56.03	5.20	3.04	2.11	3.04	2.11	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
80	3.200	30.50	0.01	2.25	55.90	5.20	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
81	3.100	30.50	0.01	2.24	55.76	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
82	3.000	30.50	0.01	2.24	55.63	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
83	2.900	30.50	0.01	2.23	55.50	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
84	2.800	30.50	0.01	2.23	55.37	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
85	2.700	30.50	0.01	2.22	55.25	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
86	2.600	30.50	0.01	2.22	55.13	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
87	2.500	30.50	0.01	2.21	55.03	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
88	2.400	30.50	0.01	2.21	54.94	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
89	2.300	30.50	0.01	2.21	54.86	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
90	2.200	30.50	0.01	2.20	54.82	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

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STREAM SUMMARY                                          BIG CREEK WATERSHED MODEL
HEADWATER                                               BIG CREEK SUMMER 80% REDUCTION IN MAN-MADE RUN

 TRAVEL TIME       =         667.85 DAYS

 MAXIMUM EFFLUENT  =          16.59 PERCENT

 FLOW              =   0.00310 TO    0.11140   m³/s
 DISPERSION        =   0.0078  TO    0.2071    m²/s
 VELOCITY          =   0.00003 TO    0.00092   m/s
 DEPTH             =   1.40    TO    1.58      m
 WIDTH             =  59.44    TO   86.87      m

 BOD DECAY         =    0.27   TO    0.31      per day
 NH3 DECAY         =    0.00   TO    0.00      per day
 SOD               =    0.22   TO    1.56      g/m²/d
 NH3 SOURCE        =    0.00   TO    0.00      g/m²/d
 REAERATION        =    0.54   TO    0.61      per day
 BOD SETTLING      =    0.26   TO    0.26      per day
 NBOD DECAY        =    0.17   TO    0.22      per day
 NBOD SETTLING     =    0.13   TO    0.13      per day

 TEMPERATURE       =   30.50   TO   30.50      deg C
 DISSOLVED OXYGEN  =    5.19   TO    6.58      mg/L


     .....EXECUTION COMPLETED
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Appendix D2 – Summer Justifications

Big Creek 101506 Summer Projection for 80% Reduction Man-Made Justification			
DATA TYPE 3 - PROGRAM CONSTANTS			
CONSTANT NAME	VALUE	UNITS	DATA SOURCE
KL MINIMUM	0.7	m/day	The minimum KL of 2.3 ft/day converted to 0.70 m/day.
INHIBITION CONTROL VALUE	3		The water column dissolved oxygen demand is assumed to come primarily from facultative bacteria under anoxic conditions and SOD is not influenced by modeled dissolved oxygen levels in the upper water column.
K2 MAXIMUM	25	1/day at 20 deg C	EPA Policy in the absence of a measured value.
HYDRAULIC CALCULATION METHOD	2		The low slopes in this waterbody cause a substantial amount of water to be present during critical flow conditions. This method allows the model to predict a more accurate depth and width during low flow conditions.
SETTLING RATE UNITS	2		By making the settling rate a velocity the rate becomes dependent upon the depth.
ALGAE OXYGEN PRODUCTION	0		Standard practice for steady state calibration to a wide variation in DO.
DISPERSION EQUATION	3		Equation used to account for advective flows.
OCEAN EXCHANGE RATIO	0		This was done to allow dispersion in the model but not to force the bottom element through the boundary conditions.

Big Creek 101506 Summer Projection For 80% Reduction in Man-Made Justification

DATA TYPE 8 - REACH IDENTIFICATION DATA

Reach	ID	Name	Upstream River Kilometer	Downstream River Kilometer	Element Length, meters	Data Source
1	BGC	BGC01 to BGC02	11.20	7.10	100.0000	ARC MAP Calc.
2	BGC	BGC02 to BGC03	7.10	4.20	100.0000	ARC MAP Calc.
3	BGC	BGC03 to BGC04	4.20	2.20	100.0000	ARC MAP Calc.

Big Creek 101506 Summer Projection For 80% Reduction in Man-Made Justification

DATA TYPE 9 - ADVECTIVE HYDRAULIC COEFFICIENTS

Reach	Name	Width Coeff. "a"	Width Exp. "b"	Width Const. "c"	Data Source	Depth Coeff. "d"	Depth Exp. "e"	Depth Const. "f"	Data Source
1	BGC01 to BGC02	0	0	59.436	BGC02	0	0	1.527	BGC02
2	BGC02 to BGC03	0	0	75.895	BGC03	0	0	1.576	BGC03
3	BGC03 to BGC04	0	0	86.868	BGC04	0	0	1.396	BGC04

Big Creek 101506 Summer Projection for 80% Reduction in Man-Made Justification

DATA TYPE 10 - DISPERSIVE HYDRAULIC COEFFICIENTS

Reach	a	Data Source	b	c	d	Data Source
1	160	Calibration	0.8333	0.0	1.0	Constant values used for advective dispersion
2	160	Calibration	0.8333	0.0	1.0	Constant values used for advective dispersion
3	160	Calibration	0.8333	0.0	1.0	Constant values used for advective dispersion

Big Creek 101506 Summer Projection For 80% Reduction in Man-Made Justification								
DATA TYPE 11-INITIAL CONDITIONS								
Reach	Name	Temp, deg C	Sal, ppt	DO, mg/l	Data Source	Chlorophyll a	Macrophytes	Data Source
1	BGC01 to BGC02	30.50	0.01	5.00	Temp - 90th Percentile Summer Temperature for WQM Site 1227, Salinity - Avg(BGC01,BGC02) Continuous Monitoring, DO - DO standard for Subsegment 120505	10.00	10.00	Best Professional Judgement
2	BGC02 to BGC03	30.50	0.01	5.00	Temp - 90th Percentile Summer Temperature for WQM Site 1227, Salinity - Avg(BGC02,BGC03) Continuous Monitoring, DO - DO standard for Subsegment 120505	10.00	10.00	Best Professional Judgement
3	BGC03 to BGC04	30.50	0.01	5.00	Temp - 90th Percentile Summer Temperature for WQM Site 1227, Salinity - Avg(BGC03,BGC04) Continuous Monitoring, DO - DO standard for Subsegment 120505	10.00	10.00	Best Professional Judgement

Big Creek 101506 Summer Projection For 80% Reduction in Man-Made Justification													
		DATA TYPE 12 - REAERATION, SEDIMENT OXYGEN DEMAND AND BOD COEFFICIENTS				DATA TYPE 12 - REAERATION, SEDIMENT OXYGEN DEMAND AND BOD COEFFICIENTS							
REACH	NAME	K2 OPT	Data Source	BKGRND SOD, gmO2/m2/day at 20 deg C	Data Source	Aerobic BOD1 Dec Rate (1/day)	Data Source	BOD1 SETT RATE (1/day)	Data Source	Aerobic BOD2 Dec Rate (1/day)	Data Source	BOD2 SETT RATE (1/day)	Data Source
1	BGC01 to BGC02	11	Texas Equation	0.114	80% Reduction in Man-Made Loading	0.1806	Average (BGC01,BGC02)	0.2	Calibration	0.0344	Average (BGC01,BGC02)	0.2	Calibration
2	BGC02 to BGC03	11	Texas Equation	0.478	80% Reduction in Man-Made Loading	0.1915	Average (BGC02,BGC03)	0.2	Calibration	0.0306	Average (BGC02,BGC03)	0.2	Calibration
3	BGC03 to BGC04	11	Texas Equation	0.803	80% Reduction in Man-Made Loading	0.1666	Average (BGC03,BGC04)	0.2	Calibration	0.0283	Average (BGC03,BGC04)	0.2	Calibration

Big Creek 101506 Summer Projection For 80% Reduction in Man-Made Justification					
DATA TYPE 13 - NITROGEN AND PHOSPHORUS COEFFICIENTS					
Reach	**Name**	**NBOD decay rate, 1/day**	**Data Source**	**NBOD settling rate, 1/day**	**Data Source**
1	BGC01 to BGC02	0.0868	Average (BGC01,BGC02)	0.10	Calibration
2	BGC02 to BGC03	0.0886	Average (BGC02,BGC03)	0.10	Calibration
3	BGC03 to BGC04	0.1173	Average (BGC03,BGC04)	0.10	Calibration

Big Creek 101506 Summer Projection For 80% Reduction in Man-Made Justification

DATA TYPES 16 - INCREMENTAL DATA FOR TEMP AND CONS

Reach	Reach Name	Incr. Inflow, m3	Data Source	Temp	Data Source	Salinity ppt	Data Source	Chl	Cond	Data Source
1	BGC1 to BGC2	0.0125	BGC2 Minimal Flow - (BGC1 Minimal Flow + Cainey Bayou)	30.50	Temp - 90th Percentile Temperature for WQM Site 1227 Summer Season	0.01	Average(BGC01,BGC02)		80.0	Calibration
2	BGC2 to BGC3	0.0879	BGC3 - BGC2 Minimal Flow	30.50	Temp - 90th Percentile Temperature for WQM Site 1227 Summer Season	0.01	Average(BGC02,BGC03)	2.5	55.0	Calibration
3	BGC3 to BGC4	0.0054	BGC4 - BGC3 Minimal Flow	30.50	Temp - 90th Percentile Temperature for WQM Site 1227 Summer Season	0.01	Average(BGC03,BGC04)			Calibration

Big Creek 101506 Summer Projection For 80% Reduction in Man-Made Justification

DATA TYPES 17 - INCREMENTAL DATA FOR DO, BOD, AND NITROGEN

Reach	Reach Name	DO, mg/l	Data Source
1	BDL1 to BDL2	2.0	Normal Groundwater DO
2	BDL2 to BDL3	2.0	Normal Groundwater DO
3	BDL3 to BDL4	2.0	Normal Groundwater DO

Big Creek 101506 Summer Projection For 80% Reduction in Man-Made Justification						
DATA TYPE 19 - NONPOINT SOURCES						
Reach	**Reach Name**	**Length of Reach, km**	**UCBOD1, kg/day**	**UCBOD2, kg/day**	**NBOD, kg/day**	**Data Source**
1	BGC01 to BGC02	4.10	530.630	360.070	155.399	80% Reduction in Man-Made Loading
2	BGC02 to BGC03	2.90	606.971	228.074	90.126	80% Reduction in Man-Made Loading
3	BGC03 to BGC04	2.00	389.943	156.742	66.902	80% Reduction in Man-Made Loading

Big Creek 101506 Summer Projection For 80% Reduction in Man-Made Justification								
DATA TYPES 20 - HEADWATER DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES								
Headwater Name	**Element No.**	**Logical Unit Number**	**Headwater Flow, cms**	**Temp, deg C**	**Salinity**	**Chlorides**	**Conductivity**	**Data Source**
Headwater 1	1	1	0.0028	30.5	0.01	4.4	52.70	BGC01 = LTP Summer Projection Default, Temp - 90th Percentile Summer Temp for WQN 1227, Salinity and Conductivity - BGC01 Insitu, Chlorides - BGC01 Lab Data

Big Creek 101506 Summer Projection For 80% Reduction in Man-Made Justification

DATA TYPES 21 - HEADWATER DATA FOR DO, BOD, AND NITROGEN

Headwater Name	Dissolved Oxygen, mg/L	UCBOD1, mg/l	UCBOD2, mg/l	NBOD, mg/l	Data Source
Headwater 1	6.74	6.12	1.46	1.52	DO - 90% DO Sat for WQN Site 1227 UCBOD1, UCBOD2, AND NBOD - 80% Reduction in Man-Made Loading

Big Creek 101506 Summer Projection For 80% Reduction in Man-Made Justification

DATA TYPES 22 - HEADWATER DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES

Headwater Name	Chlorophyll a, ug/L	Date Source			
Headwater 1	10	Best Professional Judgement			

Big Creek 101506 Summer Projection For 80% Reduction in Man-Made Justification

	DATA TYPES 24 - WASTELOAD DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES								
Wasteload / Withdrawal Name	EL #	Flow, cms	Temperature, deg C	Data Source	Chlorides	Data Source	Salinity	Conductivity	Data Source
Cainey Bayou	37	0.0028	30.50	Flow - LTP Summer Default Temp - 90th Percentile Temp for WQN Site 1227 Summer Season	3.7	CAB01 Lab Data	0.01	51.5	CAB01 Insitu - Conductivity and Salinity

Big Creek 101506 Summer Projection For 80% Reduction in Man-Made Justification

DATA TYPES 25 - WASTELOAD DATA FOR DO, BOD, AND NITROGEN

Wasteload / Withdrawal Name	EL #	DO, mg/l	Data Source	UCBOD1, mg/l	UCBOD2, mg/l	UNBOD, mg/l	Data Source
Cainey Bayou	37	5.00	DO Standard for Subsegment 101506 Summer Season	5.96	1.53	1.63	80% Reduction in Man Made Loading

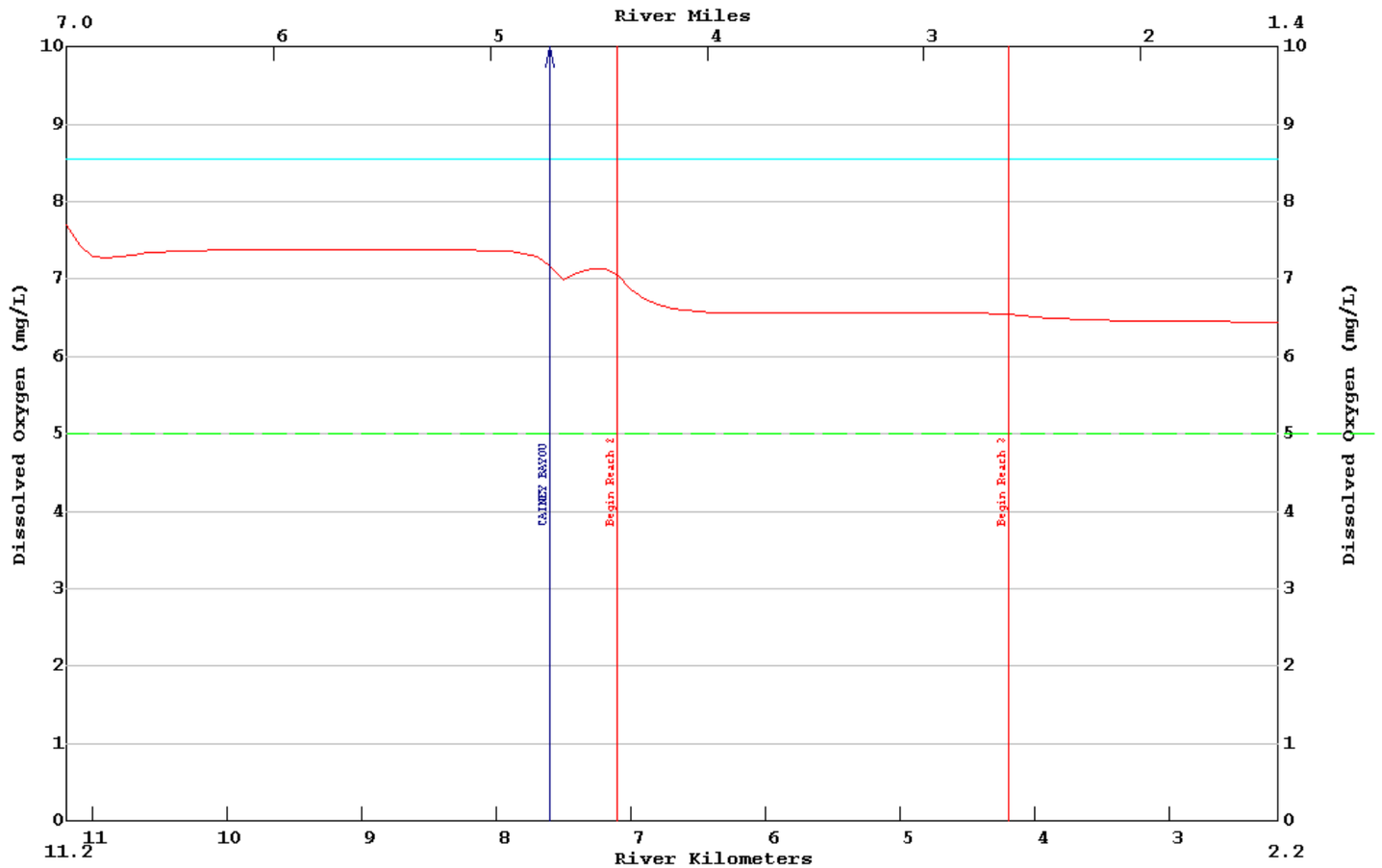
Big Creek 101506 Summer Projection For 80% Reduction in Man-Made Justification

DATA TYPES 27 - LOWER BOUNDARY CONDITIONS

Parameter	Value	Units	Data Source
TEMPERATURE	30.50	^{O}C	90th Percentile Temperature for WQN Site 1227 Summer Season
SALINITY	0.01	ppt	BGC05 Continuous Monitoring
CHLORIDES	2.8	ppm	BGC05 Lab Data
CONDUCTIVITY	47.70	umhos/cm	BGC05 Insitu
DISSOLVED OXYGEN	5.00	mg/L	DO Standard for 101506 Summer Season
CBOD1	7.8370	mg/L	BGC05 Lab Data
CBOD2	5.0311	mg/L	BGC05 Lab Data
CHLOROPHYLL A	10.0	ug/L	Seasonal Projection Standard
NBOD	2.4180	mg/L	BGC05 Lab Data

Appendix D3 – Winter Output Graphs and Input, Overlay, and Output Files

LA-QUAL Version 8.00 Run at 08:09 on 01/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKWIN8
BIG CREEK WINTER 80% REDUCTION IN MAN-MADE RUN min= 6.45 max= 7.70
:MAINSTEM



BIG CREEK 101506 WINTER PROJECTION INPUT DATA SET

```
CNTROL01     BIG CREEK WATERSHED MODEL
CNTROL02     BIG CREEK WINTER 80% REDUCTION IN MAN-MADE RUN
CNTROL04 YES METRIC UNITS
ENDATA01
MODOPT01  NO TEMPERATURE
MODOPT02  NO SALINITY
MODOPT03 YES CONSERVATIVE MATERIAL  I = CHLORIDES                  IN MG/L
MODOPT04 YES CONSERVATIVE MATERIAL II = CONDUCTIVITY               IN MG/L
MODOPT05 YES DISSOLVED OXYGEN
MODOPT06 YES BOD1 BIOCHEMICAL OXYGEN DEMAND
MODOPT06 YES BOD2 BIOCHEMICAL OXYGEN DEMAND
MODOPT08 YES NBOD OXYGEN DEMAND
MODOPT10  NO PHOSPHORUS
MODOPT11  NO CHLOROPHYLL A
MODOPT12  NO MACROPHYTES
MODOPT13  NO COLIFORM
ENDATA02
PROGRAM  KL MINIMUM                        =     0.7
PROGRAM  INHIBITION CONTROL VALUE          =     3.
PROGRAM  K2 MAXIMUM                        =     25.0
PROGRAM  HYDRAULIC CALCULATION METHOD      =     2.
PROGRAM  SETTLING RATE UNITS               =     2.
PROGRAM  ALGAE OXYGEN PROD                 =     0.
PROGRAM  DISPERSION EQUATION               =     3.
PROGRAM  OCEAN EXCHANGE RATIO              =     0.0
ENDATA03
!Temperature Correction Constants
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ******** ********
ENDATA04
ENDATA05
ENDATA06
ENDATA07
!Reach Identification Data
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
```

```
!          ***  -- ********************************----------*********----------
!           R#  ID   SITE NAME                          RKM        RKM    LENGTH
REACH ID     1  BGC   BGC1 TO BGC2                      11.2        7.1      0.1
REACH ID     2  BGC   BGC2 TO BGC3                       7.1        4.2      0.1
REACH ID     3  BGC   BGC3 TO BGC4                       4.2        2.2      0.1
ENDATA08
!Advective Hydraulic Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!          ***  -------*******-------*******-------*******-------*******
!                 a      b       c     d      e        f
!                WIDTH  WIDTH   WIDTH DEPTH  DEPTH   DEPTH
!           R#   COEFF   EXP    CONST COEFF   EXP    CONST SLOPE MANNING
HYDR-1       1   0.00   0.00   59.436  0.00   0.00   1.527
HYDR-1       2   0.00   0.00   75.895  0.00   0.00   1.576
HYDR-1       3   0.00   0.00   86.868  0.00   0.00   1.396
ENDATA09
!Dispersive Hydraulic Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!          ***  -----*********----------*********----------
!               TIDAL
!           R#  RANGE    a          b         c         d
HYDR-2       1   1.0     160.0    0.8333      0.0       1.0
HYDR-2       2   1.0     160.0    0.8333      0.0       1.0
HYDR-2       3   1.0     160.0    0.8333      0.0       1.0
ENDATA10
!Initial Conditions
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!          ***  --------********--------********--------********--------********
!           R#    TEMP  SALINITY   DO     NH3 N  NIT NIT  PHOS   CHL A   MACROPHYTES
INITIAL      1    23.14  0.01     5.00                           10.0      10
INITIAL      2    23.14  0.01     5.00                           10.0      10
INITIAL      3    23.14  0.01     5.00                           10.0      10
ENDATA11
!Reaeration, Sediment Oxygen Demand and BOD Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8---------9
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!          ***  -----******----- ******-------*******-------*******-------*******-------***
```

```
!                REA    KL                      CBOD1   CBOD1               CBOD2  CBOD2
!          R#    EQ    MIN               SOD    DECAY   SETT                DECAY   SETT
COEF-1      1  11.00                    0.114  0.1806  0.20                0.0344  0.20
COEF-1      2  11.00                    0.478  0.1915  0.20                0.0306  0.20
COEF-1      3  11.00                    0.803  0.1666  0.20                0.0283  0.20
ENDATA12
!Nitrogen and Phosphorus Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  -------*******-------*******-------*******-------
!              NBOD     NBOD
!          R#  DECAY    SETT
COEF-2      1  0.0868   0.10
COEF-2      2  0.0886   0.10
COEF-2      3  0.1173   0.10
ENDATA13
ENDATA14
!Coliform and Nonconservative Cofficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  -------*******-------*******
ENDATA15
!Incremental Data for Flow, Temperature, Salinity, and Conservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  ---------*********---------*********---------*********
!          R#   OUTFLOW   INFLOW  TEMP     SALINITY CHLORIDE  COND
INCR-1      1              0.0125  23.14                        80
INCR-1      2              0.0879  23.14                2.5     55
INCR-1      3              0.0054  23.14
ENDATA16
!Incremental Data for DO, BOD, and Nitrogen
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  ---------*********---------*********---------*********
!          R#      DO
INCR-2      1     2.00
INCR-2      2     2.00
INCR-2      3     2.00
ENDATA17
```

```
!Incremental Data for Phosphorus, Chlorophyll, Coliform and Nonconservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  ---------********---------********
!          R#
INCR-3      1
INCR-3      2
INCR-3      3
ENDATA18
!Nonpoint Source Data
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  ---------********---------********---------********
!          R#    CBOD1     NBOD                                CBOD2
NONPOINT    1   530.630   155.399                              360.070
NONPOINT    2   606.971    90.126                              228.074
NONPOINT    3   389.943    66.902                              156.742
ENDATA19
!Headwater Data for Flow, Temperature, Salinity, and Conservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ****  -------------------- *** --------********--------********--------
!         E#    NAME                      FLOW    TEMP  SALIN   CHLORIDE   COND
HDWTR-1     1  HEADWATER                 0.0280   23.14  0.01    4.4       52.7
ENDATA20
!Headwater Data for DO, BOD, and Nitrogen
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ****  ---------********---------********---------********
!          E#      DO      CBOD1    NBOD                        CB0D2
HDWTR-2     1      7.70   6.1200    1.520                       1.4600
ENDATA21
!Headwater Data for Phosphorus, Chlorophyll, Coliform, and Nonconservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ****  ---------********---------********
!          E#  PHOSPHOR   CHL A   COLIFORM  NONCONSERVATIVE
HDWTR-3     1              10.0
ENDATA22
ENDATA23
```

```
!Wasteload Data for Flow, Temperature, Salinity, and Conservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  --------------------********---------********---------********
!          E#     NAME                FLOW      TEMP   SALINITY CHLORIDE  COND
WSTLD-1    37  CAINEY BAYOU          0.0280    23.14     0.01     3.7    51.5
ENDATA24
!Wasteload Data for DO, BOD, and Nitrogen
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  ---------********-----********---------*****---------********
!          E#     DO       CBOD1         NBOD                          CBOD2
WSTLD-2    37    5.00      5.9600        1.6300                        1.5300
ENDATA25
!Wasteload Data for Phosphorus, Chlorophyll, Coliform, and Nonconservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  ---------********---------********
!          E#  PHOSPHOR  CHL A    COLIFORM NONCONSERVATIVE
WSTLD-3    37
ENDATA26
LOWER BC TEMPERATURE                        =  23.14
LOWER BC SALINITY                           =   0.01
LOWER BC CONSERVATIVE MATERIAL I            =   2.8
LOWER BC CONSERVATIVE MATERIAL II           =  47.7
LOWER BC DISSOLVED OXYGEN                   =   5.00
LOWER BC BOD1 BIOCHEMICAL OXYGEN DEMAND     =   7.8370
LOWER BC BOD2 BIOCHEMICAL OXYGEN DEMAND     =   5.0311
LOWER BC NBOD                               =   2.4180
LOWER BC CHLOROPHYLL A                      =  10.0
ENDATA27
!Dam Data
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  ******************* ** ******** ******** ********
ENDATA28
ENDATA29
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** **
```

```
NUMBER OF PLOTS = 1
NUMBER OF REACHES IN PLOT 1 =  3                        INCREMENT = 0.1
PLOT RCH  1  2  3
ENDATA30
OVERLAY 1 BIGCREEKOVLPROJ.TXT                  :MAINSTEM
ENDATA31
```

BIG CREEK 101506 WINTER PROJECTION OUTPUT DATA SET

```
LA-QUAL Version 8.00
Louisiana Department of Environmental Quality

Input file is O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKWIN80.txt
Output produced at 08:09 on 01/18/2007

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

CARD TYPE       CONTROL TITLES

TITLE01         BIG CREEK WATERSHED MODEL
TITLE02         BIG CREEK WINTER 80% REDUCTION IN MAN-MADE RUN
CNTROL04  YES   METRIC UNITS
ENDATA01

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

CARD TYPE       MODEL OPTION

MODOPT01   NO   TEMPERATURE
MODOPT02   NO   SALINITY
MODOPT03  YES   CONSERVATIVE MATERIAL  I = CHLORIDES                 IN MG/L
MODOPT04  YES   CONSERVATIVE MATERIAL II = CONDUCTIVITY               IN MG/L
MODOPT05  YES   DISSOLVED OXYGEN
MODOPT06  YES   BOD1 BIOCHEMICAL OXYGEN DEMAND
MODOPT06  YES   BOD2 BIOCHEMICAL OXYGEN DEMAND
MODOPT08  YES   NBOD OXYGEN DEMAND
MODOPT10   NO   PHOSPHORUS
MODOPT11   NO   CHLOROPHYLL A
MODOPT12   NO   MACROPHYTES
MODOPT13   NO   COLIFORM
ENDATA02

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

CARD TYPE       DESCRIPTION OF CONSTANT                       VALUE

PROGRAM         KL MINIMUM                        =         0.70000 meters/day
PROGRAM         INHIBITION CONTROL VALUE          =         3.00000 (inhibit all rates but SOD)
PROGRAM         K2 MAXIMUM                        =        25.00000 per day
PROGRAM         HYDRAULIC CALCULATION METHOD      =         2.00000 (widths and depths)
PROGRAM         SETTLING RATE UNITS               =         2.00000 (values entered as per day)
PROGRAM         ALGAE OXYGEN PROD                 =         0.00000 mg O/ug chl a/day
PROGRAM         DISPERSION EQUATION               =         3.00000 (values entered as a function of D,Q,Vmean)
PROGRAM         OCEAN EXCHANGE RATIO              =         0.00000
ENDATA03

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

 CARD TYPE     RATE CODE     THETA VALUE

ENDATA04
```

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

CARD TYPE       DESCRIPTION OF CONSTANT                        VALUE

ENDATA05

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

CARD TYPE       DESCRIPTION OF CONSTANT                        VALUE

ENDATA06

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

CARD TYPE       DESCRIPTION OF CONSTANT                        VALUE

ENDATA07

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

REACH ID      1   BG     BGC1 TO BGC2                    11.20  TO    7.10   0.1000     4.10      41        1     41
REACH ID      2   BG     BGC2 TO BGC3                     7.10  TO    4.20   0.1000     2.90      29       42     70
REACH ID      3   BG     BGC3 TO BGC4                     4.20  TO    2.20   0.1000     2.00      20       71     90
ENDATA08

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

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

HYDR-1        1   BG       0.000       0.000      59.436       0.000       0.000       1.527     0.00000   0.000
HYDR-1        2   BG       0.000       0.000      75.895       0.000       0.000       1.576     0.00000   0.000
HYDR-1        3   BG       0.000       0.000      86.868       0.000       0.000       1.396     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"

HYDR          1   BG      1.00      160.000         0.833          0.000          1.000
HYDR          2   BG      1.00      160.000         0.833          0.000          1.000
HYDR          3   BG      1.00      160.000         0.833          0.000          1.000
ENDATA10

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

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

INITIAL           1   BG       23.14      0.01      5.00      0.00      0.00      0.00     10.00     10.00
INITIAL           2   BG       23.14      0.01      5.00      0.00      0.00      0.00     10.00     10.00
INITIAL           3   BG       23.14      0.01      5.00      0.00      0.00      0.00     10.00     10.00
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

COEF-1     1   BG  11 TEXAS            0.000     0.000     0.000     0.114     0.181     0.200     0.000     0.000     0.034     0.200     0.000     0.000
COEF-1     2   BG  11 TEXAS            0.000     0.000     0.000     0.478     0.191     0.200     0.000     0.000     0.031     0.200     0.000     0.000
COEF-1     3   BG  11 TEXAS            0.000     0.000     0.000     0.803     0.167     0.200     0.000     0.000     0.028     0.200     0.000     0.000
ENDATA12

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

CARD TYPE      REACH  ID        NBOD      NBOD   ORGN CONV       NH3       NH3      PHOS     DENIT
                                DECA      SETT  TO NH3 SRCE     DECA      SRCE      SRCE      RATE

COEF-2           1   BG       0.087     0.100     0.000       0.000     0.000     0.000     0.000
COEF-2           2   BG       0.089     0.100     0.000       0.000     0.000     0.000     0.000
COEF-2           3   BG       0.117     0.100     0.000       0.000     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

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

INCR-1           1   BG       0.00000     0.01250     23.14      0.00      0.00     80.00   0.00305   0.00000
INCR-1           2   BG       0.00000     0.08790     23.14      0.00      2.50     55.00   0.03031   0.00000
INCR-1           3   BG       0.00000     0.00540     23.14      0.00      0.00      0.00   0.00270   0.00000
ENDATA16

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

CARD TYPE      REACH  ID          DO       BOD      NBOD                          BOD#2

INCR-2           1   BG        2.00      0.00      0.00      0.00      0.00      0.00
INCR-2           2   BG        2.00      0.00      0.00      0.00      0.00      0.00
INCR-2           3   BG        2.00      0.00      0.00      0.00      0.00      0.00
ENDATA17

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

 CARD TYPE      REACH  ID        PHOS     CHL A      COLI       NCM

INCR-3           1   BG        0.00      0.00      0.00      0.00
```

```
INCR-3            2   BG        0.00      0.00      0.00      0.00
INCR-3            3   BG        0.00      0.00      0.00      0.00
ENDATA18

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

CARD TYPE      REACH  ID       BOD#1     NBOD       COLI       NCM        DO     BOD#2

NONPOINT          1   BG      530.63    155.40      0.00      0.00      0.00    360.07
NONPOINT          2   BG      606.97     90.13      0.00      0.00      0.00    228.07
NONPOINT          3   BG      389.94     66.90      0.00      0.00      0.00    156.74
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      MG/L      MG/L

HDWTR-1           1     HEADWATER               0   0.02800    0.989   23.14     0.01     4.400    52.700
ENDATA20

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

CARD TYPE     ELEMENT   NAME                        DO     BOD#1     NBOD                          BOD#2
                                                    mg/L      mg/L      mg/L      mg/L      mg/L      mg/L

HDWTR-2           1     HEADWATER                 7.70      6.12      1.52      0.00      0.00      1.46
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

HDWTR-3           1     HEADWATER                  0.00     10.00      0.00      0.00
ENDATA22

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

CARD TYPE   JUNCTION   UPSTRM     RIVER     NAME
             ELEMENT  ELEMENT     KILOM

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      MG/L      MG/L

WSTLD-1       37       7.60  CAINEY BAYOU          0.02800    0.98870    0.639   23.14     0.01     3.700    51.500
ENDATA24

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

WSTLD-2          37     CAINEY BAYOU              5.00      5.96      0.00      1.63      0.00      0.00      0.00      1.53
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ENDATA25

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

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

WSTLD-3          37     CAINEY BAYOU                0.00      0.00      0.00      0.00
ENDATA26

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

CARD TYPE    CONSTITUENT                    CONCENTRATION

LOWER BC     TEMPERATURE                        =     23.140     deg C
LOWER BC     SALINITY                           =      0.010     ppt
LOWER BC     CONSERVATIVE MATERIAL I            =      2.800     MG/L
LOWER BC     CONSERVATIVE MATERIAL II           =     47.700     MG/L
LOWER BC     DISSOLVED OXYGEN                   =      5.000     mg/L
LOWER BC     BOD1 BIOCHEMICAL OXYGEN DEMAND     =      7.837     mg/L
LOWER BC     BOD2 BIOCHEMICAL OXYGEN DEMAND     =      5.031     mg/L
LOWER BC     NBOD                               =      2.418     mg/L
LOWER BC     CHLOROPHYLL A                      =     10.000     µg/L
ENDATA27

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

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

ENDATA28

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

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

ENDATA29

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


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

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


OVERLAY 1 BIGCREEKOVLPROJ.TXT                  :MAINSTEM
ENDATA31



     .....NO ERRORS DETECTED IN INPUT DATA
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
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     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11


FINAL REPORT    HEADWATER                                    BIG CREEK WATERSHED MODEL
REACH NO.  1       BGC1 TO BGC2                              BIG CREEK WINTER 80% REDUCTION IN MAN-MADE RUN
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********** REACH INPUTS **********

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
1	HDWTR	0.02800	23.14	0.01	4.40	52.70	7.70	6.12	1.46	6.12	1.46	1.52	0.00	0.00	0.00	10.00	0.00	0.00
EACH	INCR	0.00030	23.14	0.00	0.00	80.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	
37	WSTLD	0.02800	23.14	0.01	3.70	51.50	5.00	5.96	1.53	5.96	1.53	1.63	0.00	0.00	0.00	0.00	0.00	0.00

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m^3/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m^3	SURFACE AREA m^2	X-SECT AREA m^2	TIDAL PRISM m^3	TIDAL VELO m/s	DISPRSN m^2/s	MEAN VELO m/s
1	11.20	11.10	0.02830	0.0	0.00031	3.71	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.071	0.000
2	11.10	11.00	0.02861	0.0	0.00032	3.67	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.072	0.000
3	11.00	10.90	0.02891	0.0	0.00032	3.63	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.073	0.000
4	10.90	10.80	0.02922	0.0	0.00032	3.60	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.073	0.000
5	10.80	10.70	0.02952	0.0	0.00033	3.56	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.074	0.000
6	10.70	10.60	0.02983	0.0	0.00033	3.52	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.075	0.000
7	10.60	10.50	0.03013	0.0	0.00033	3.49	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.076	0.000
8	10.50	10.40	0.03044	0.0	0.00034	3.45	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.076	0.000
9	10.40	10.30	0.03074	0.0	0.00034	3.42	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.077	0.000
10	10.30	10.20	0.03105	0.0	0.00034	3.38	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.078	0.000
11	10.20	10.10	0.03135	0.0	0.00035	3.35	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.079	0.000
12	10.10	10.00	0.03166	0.0	0.00035	3.32	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.079	0.000
13	10.00	9.90	0.03196	0.0	0.00035	3.29	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.080	0.000
14	9.90	9.80	0.03227	0.0	0.00036	3.26	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.081	0.000
15	9.80	9.70	0.03257	0.0	0.00036	3.22	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.082	0.000
16	9.70	9.60	0.03288	0.0	0.00036	3.19	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.082	0.000
17	9.60	9.50	0.03318	0.0	0.00037	3.17	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.083	0.000
18	9.50	9.40	0.03349	0.0	0.00037	3.14	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.084	0.000
19	9.40	9.30	0.03379	0.0	0.00037	3.11	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.085	0.000
20	9.30	9.20	0.03410	0.0	0.00038	3.08	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.086	0.000
21	9.20	9.10	0.03440	0.0	0.00038	3.05	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.086	0.000
22	9.10	9.00	0.03471	0.0	0.00038	3.03	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.087	0.000
23	9.00	8.90	0.03501	0.0	0.00039	3.00	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.088	0.000
24	8.90	8.80	0.03532	0.0	0.00039	2.97	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.089	0.000
25	8.80	8.70	0.03562	0.0	0.00039	2.95	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.089	0.000
26	8.70	8.60	0.03593	0.0	0.00040	2.92	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.090	0.000
27	8.60	8.50	0.03623	0.0	0.00040	2.90	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.091	0.000
28	8.50	8.40	0.03654	0.0	0.00040	2.88	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.092	0.000
29	8.40	8.30	0.03684	0.0	0.00041	2.85	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.092	0.000
30	8.30	8.20	0.03715	0.0	0.00041	2.83	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.093	0.000
31	8.20	8.10	0.03745	0.0	0.00041	2.80	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.094	0.000
32	8.10	8.00	0.03776	0.0	0.00042	2.78	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.095	0.000
33	8.00	7.90	0.03806	0.0	0.00042	2.76	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.095	0.000
34	7.90	7.80	0.03837	0.0	0.00042	2.74	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.096	0.000
35	7.80	7.70	0.03867	0.0	0.00043	2.72	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.097	0.000

36	7.70	7.60	0.03898	0.0	0.00043	2.70	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.098	0.000
37	7.60	7.50	0.06728	41.6	0.00074	1.56	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.169	0.001
38	7.50	7.40	0.06759	41.4	0.00074	1.55	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.170	0.001
39	7.40	7.30	0.06789	41.2	0.00075	1.55	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.170	0.001
40	7.30	7.20	0.06820	41.1	0.00075	1.54	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.171	0.001
41	7.20	7.10	0.06850	40.9	0.00075	1.53	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.172	0.001
TOT						121.16			372110.91	243687.52					
AVG					0.0004		1.53	59.44			90.76				
CUM						121.16									

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

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
1	11.100	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
2	11.000	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
3	10.900	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
4	10.800	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
5	10.700	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
6	10.600	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
7	10.500	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
8	10.400	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
9	10.300	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
10	10.200	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
11	10.100	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
12	10.000	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
13	9.900	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
14	9.800	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
15	9.700	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
16	9.600	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
17	9.500	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
18	9.400	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
19	9.300	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
20	9.200	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
21	9.100	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
22	9.000	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
23	8.900	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
24	8.800	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
25	8.700	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
26	8.600	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
27	8.500	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
28	8.400	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
29	8.300	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
30	8.200	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
31	8.100	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
32	8.000	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
33	7.900	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
34	7.800	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
35	7.700	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
36	7.600	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
37	7.500	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
38	7.400	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
39	7.300	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
40	7.200	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00

41	7.100	8.55	0.49	0.21	0.22	0.00	0.04	0.22	0.00	0.14	0.14	0.14	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
AVG 20 DEG C RATE			0.46	0.18	0.20	0.00	0.03	0.20	0.00	0.11			0.09	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
1	11.100	23.14	0.01	4.37	52.87	7.43	5.23	2.01	5.23	2.01	1.61	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
2	11.000	23.14	0.01	4.33	53.15	7.29	4.40	2.62	4.40	2.62	1.72	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
3	10.900	23.14	0.01	4.28	53.43	7.27	3.93	3.01	3.93	3.01	1.80	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
4	10.800	23.14	0.01	4.24	53.70	7.29	3.67	3.26	3.67	3.26	1.85	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
5	10.700	23.14	0.01	4.20	53.97	7.32	3.53	3.43	3.53	3.43	1.88	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
6	10.600	23.14	0.01	4.15	54.23	7.34	3.45	3.54	3.45	3.54	1.91	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
7	10.500	23.14	0.01	4.11	54.48	7.35	3.40	3.61	3.40	3.61	1.92	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
8	10.400	23.14	0.01	4.07	54.73	7.36	3.37	3.66	3.37	3.66	1.94	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
9	10.300	23.14	0.01	4.03	54.98	7.37	3.36	3.69	3.36	3.69	1.94	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
10	10.200	23.14	0.01	3.99	55.22	7.37	3.35	3.71	3.35	3.71	1.95	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
11	10.100	23.14	0.01	3.96	55.45	7.37	3.35	3.72	3.35	3.72	1.95	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
12	10.000	23.14	0.01	3.92	55.68	7.37	3.34	3.73	3.34	3.73	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
13	9.900	23.14	0.01	3.88	55.91	7.37	3.34	3.74	3.34	3.74	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
14	9.800	23.14	0.01	3.85	56.13	7.37	3.34	3.74	3.34	3.74	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
15	9.700	23.14	0.01	3.81	56.35	7.37	3.34	3.74	3.34	3.74	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
16	9.600	23.14	0.01	3.78	56.57	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
17	9.500	23.14	0.01	3.74	56.78	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
18	9.400	23.14	0.01	3.71	56.98	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
19	9.300	23.14	0.01	3.68	57.19	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
20	9.200	23.14	0.01	3.64	57.38	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
21	9.100	23.14	0.01	3.61	57.58	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
22	9.000	23.14	0.01	3.58	57.76	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
23	8.900	23.14	0.01	3.55	57.95	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
24	8.800	23.14	0.01	3.52	58.12	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
25	8.700	23.14	0.01	3.49	58.29	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
26	8.600	23.14	0.01	3.47	58.45	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
27	8.500	23.14	0.01	3.44	58.59	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
28	8.400	23.14	0.01	3.41	58.72	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
29	8.300	23.14	0.01	3.39	58.83	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
30	8.200	23.14	0.01	3.37	58.90	7.37	3.34	3.75	3.34	3.75	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
31	8.100	23.14	0.01	3.35	58.93	7.37	3.34	3.74	3.34	3.74	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
32	8.000	23.14	0.01	3.33	58.89	7.37	3.35	3.74	3.35	3.74	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
33	7.900	23.14	0.01	3.32	58.77	7.36	3.36	3.72	3.36	3.72	1.96	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
34	7.800	23.14	0.01	3.32	58.52	7.33	3.38	3.69	3.38	3.69	1.95	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
35	7.700	23.14	0.01	3.33	58.08	7.29	3.42	3.63	3.42	3.63	1.94	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
36	7.600	23.14	0.01	3.35	57.39	7.17	3.53	3.51	3.53	3.51	1.91	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
37	7.500	23.14	0.01	3.38	56.60	6.99	3.72	3.32	3.72	3.32	1.88	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
38	7.400	23.14	0.01	3.36	56.66	7.08	3.62	3.38	3.62	3.38	1.87	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
39	7.300	23.14	0.01	3.34	56.71	7.13	3.56	3.41	3.56	3.41	1.86	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
40	7.200	23.14	0.01	3.32	56.73	7.13	3.54	3.38	3.54	3.38	1.81	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
41	7.100	23.14	0.01	3.29	56.71	7.06	3.56	3.27	3.56	3.27	1.73	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

FINAL REPORT HEADWATER BIG CREEK WATERSHED MODEL
REACH NO. 2 BGC2 TO BGC3 BIG CREEK WINTER 80% REDUCTION IN MAN-MADE RUN

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

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
42	UPR RCH	0.06850	23.14	0.01	3.29	56.71	7.06	3.56	3.27	3.56	3.27	1.73	0.00	0.00	0.00	10.00	0.00	0.00
EACH	INCR	0.00303	23.14	0.00	2.50	55.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
42	7.10	7.00	0.07153	39.1	0.00060	1.94	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.140	0.001
43	7.00	6.90	0.07456	37.6	0.00062	1.86	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.146	0.001
44	6.90	6.80	0.07759	36.1	0.00065	1.78	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.152	0.001
45	6.80	6.70	0.08062	34.7	0.00067	1.72	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.158	0.001
46	6.70	6.60	0.08366	33.5	0.00070	1.65	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.163	0.001
47	6.60	6.50	0.08669	32.3	0.00072	1.60	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.169	0.001
48	6.50	6.40	0.08972	31.2	0.00075	1.54	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.175	0.001
49	6.40	6.30	0.09275	30.2	0.00078	1.49	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.181	0.001
50	6.30	6.20	0.09578	29.2	0.00080	1.45	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.187	0.001
51	6.20	6.10	0.09881	28.3	0.00083	1.40	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.193	0.001
52	6.10	6.00	0.10184	27.5	0.00085	1.36	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.199	0.001
53	6.00	5.90	0.10487	26.7	0.00088	1.32	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.205	0.001
54	5.90	5.80	0.10790	25.9	0.00090	1.28	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.211	0.001
55	5.80	5.70	0.11093	25.2	0.00093	1.25	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.217	0.001
56	5.70	5.60	0.11397	24.6	0.00095	1.21	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.223	0.001
57	5.60	5.50	0.11700	23.9	0.00098	1.18	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.229	0.001
58	5.50	5.40	0.12003	23.3	0.00100	1.15	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.235	0.001
59	5.40	5.30	0.12306	22.8	0.00103	1.12	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.240	0.001
60	5.30	5.20	0.12609	22.2	0.00105	1.10	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.246	0.001
61	5.20	5.10	0.12912	21.7	0.00108	1.07	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.252	0.001
62	5.10	5.00	0.13215	21.2	0.00110	1.05	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.258	0.001
63	5.00	4.90	0.13518	20.7	0.00113	1.02	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.264	0.001
64	4.90	4.80	0.13821	20.3	0.00116	1.00	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.270	0.001
65	4.80	4.70	0.14124	19.8	0.00118	0.98	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.276	0.001
66	4.70	4.60	0.14428	19.4	0.00121	0.96	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.282	0.001
67	4.60	4.50	0.14731	19.0	0.00123	0.94	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.288	0.001
68	4.50	4.40	0.15034	18.6	0.00126	0.92	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.294	0.001
69	4.40	4.30	0.15337	18.3	0.00128	0.90	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.300	0.001
70	4.30	4.20	0.15640	17.9	0.00131	0.89	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.306	0.001
TOT						37.15			346870.50	220095.48					
AVG					0.0009		1.58	75.90			119.61				
CUM						158.31									

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

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
42	7.000	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00

43	6.900	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
44	6.800	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
45	6.700	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
46	6.600	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
47	6.500	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
48	6.400	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
49	6.300	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
50	6.200	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
51	6.100	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
52	6.000	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
53	5.900	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
54	5.800	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
55	5.700	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
56	5.600	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
57	5.500	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
58	5.400	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
59	5.300	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
60	5.200	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
61	5.100	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
62	5.000	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
63	4.900	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
64	4.800	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
65	4.700	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
66	4.600	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
67	4.500	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
68	4.400	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
69	4.300	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
70	4.200	8.55	0.47	0.22	0.22	0.00	0.04	0.22	0.00	0.58	0.58	0.58	0.10	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
AVG 20 DEG C RATE			0.44	0.19	0.20	0.00	0.03	0.20	0.00	0.48			0.09	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
42	7.000	23.14	0.01	3.26	56.65	6.86	3.65	3.05	3.65	3.05	1.59	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
43	6.900	23.14	0.01	3.23	56.58	6.74	3.70	2.89	3.70	2.89	1.48	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
44	6.800	23.14	0.01	3.20	56.53	6.67	3.74	2.77	3.74	2.77	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
45	6.700	23.14	0.01	3.18	56.47	6.62	3.76	2.69	3.76	2.69	1.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
46	6.600	23.14	0.01	3.16	56.42	6.60	3.78	2.62	3.78	2.62	1.29	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
47	6.500	23.14	0.01	3.13	56.38	6.58	3.79	2.57	3.79	2.57	1.25	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
48	6.400	23.14	0.01	3.11	56.33	6.57	3.80	2.54	3.80	2.54	1.22	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
49	6.300	23.14	0.01	3.09	56.29	6.57	3.80	2.51	3.80	2.51	1.20	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
50	6.200	23.14	0.01	3.08	56.25	6.56	3.81	2.49	3.81	2.49	1.19	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
51	6.100	23.14	0.01	3.06	56.22	6.56	3.81	2.47	3.81	2.47	1.17	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
52	6.000	23.14	0.01	3.04	56.18	6.56	3.81	2.46	3.81	2.46	1.16	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
53	5.900	23.14	0.01	3.03	56.15	6.56	3.81	2.45	3.81	2.45	1.15	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
54	5.800	23.14	0.01	3.02	56.12	6.56	3.81	2.44	3.81	2.44	1.15	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
55	5.700	23.14	0.01	3.00	56.09	6.56	3.81	2.44	3.81	2.44	1.14	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
56	5.600	23.14	0.01	2.99	56.06	6.56	3.81	2.43	3.81	2.43	1.14	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
57	5.500	23.14	0.01	2.98	56.04	6.56	3.81	2.43	3.81	2.43	1.13	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
58	5.400	23.14	0.01	2.97	56.01	6.57	3.82	2.42	3.82	2.42	1.13	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
59	5.300	23.14	0.01	2.96	55.99	6.57	3.82	2.42	3.82	2.42	1.13	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
60	5.200	23.14	0.01	2.95	55.96	6.57	3.82	2.42	3.82	2.42	1.13	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

61	5.100	23.14	0.01	2.94	55.94	6.57	3.82	2.42	3.82	2.42	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
62	5.000	23.14	0.01	2.93	55.91	6.57	3.82	2.42	3.82	2.42	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
63	4.900	23.14	0.01	2.92	55.89	6.57	3.82	2.42	3.82	2.42	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
64	4.800	23.14	0.01	2.91	55.86	6.57	3.82	2.42	3.82	2.42	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
65	4.700	23.14	0.01	2.90	55.84	6.57	3.82	2.42	3.82	2.42	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
66	4.600	23.14	0.01	2.89	55.81	6.57	3.82	2.42	3.82	2.42	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
67	4.500	23.14	0.01	2.89	55.77	6.56	3.82	2.42	3.82	2.42	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
68	4.400	23.14	0.01	2.88	55.73	6.56	3.82	2.42	3.82	2.42	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
69	4.300	23.14	0.01	2.87	55.68	6.55	3.83	2.43	3.83	2.43	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
70	4.200	23.14	0.01	2.87	55.62	6.54	3.84	2.44	3.84	2.44	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

FINAL REPORT HEADWATER BIG CREEK WATERSHED MODEL
REACH NO. 3 BGC3 TO BGC4 BIG CREEK WINTER 80% REDUCTION IN MAN-MADE RUN

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

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
71	UPR RCH	0.15640	23.14	0.01	2.87	55.62	6.54	3.84	2.44	3.84	2.44	1.12	0.00	0.00	0.00	10.00	0.00	0.00
EACH	INCR	0.00027	23.14	0.00	0.00	0.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
71	4.20	4.10	0.15667	17.9	0.00129	0.90	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.273	0.001
72	4.10	4.00	0.15694	17.8	0.00129	0.89	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.273	0.001
73	4.00	3.90	0.15721	17.8	0.00130	0.89	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.274	0.001
74	3.90	3.80	0.15748	17.8	0.00130	0.89	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.274	0.001
75	3.80	3.70	0.15775	17.7	0.00130	0.89	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.275	0.001
76	3.70	3.60	0.15802	17.7	0.00130	0.89	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.275	0.001
77	3.60	3.50	0.15829	17.7	0.00131	0.89	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.276	0.001
78	3.50	3.40	0.15856	17.7	0.00131	0.89	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.276	0.001
79	3.40	3.30	0.15883	17.6	0.00131	0.88	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.277	0.001
80	3.30	3.20	0.15910	17.6	0.00131	0.88	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.277	0.001
81	3.20	3.10	0.15937	17.6	0.00131	0.88	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.278	0.001
82	3.10	3.00	0.15964	17.5	0.00132	0.88	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.278	0.001
83	3.00	2.90	0.15991	17.5	0.00132	0.88	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.279	0.001
84	2.90	2.80	0.16018	17.5	0.00132	0.88	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.279	0.001
85	2.80	2.70	0.16045	17.5	0.00132	0.87	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.280	0.001
86	2.70	2.60	0.16072	17.4	0.00133	0.87	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.280	0.001
87	2.60	2.50	0.16099	17.4	0.00133	0.87	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.280	0.001
88	2.50	2.40	0.16126	17.4	0.00133	0.87	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.281	0.001
89	2.40	2.30	0.16153	17.3	0.00133	0.87	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.281	0.001
90	2.30	2.20	0.16180	17.3	0.00133	0.87	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.282	0.001
TOT						17.63			242535.39	173735.97					
AVG					0.0013		1.40	86.87			121.27				
CUM						175.94									

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

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
71	4.100	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
72	4.000	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
73	3.900	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
74	3.800	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
75	3.700	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
76	3.600	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
77	3.500	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
78	3.400	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
79	3.300	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
80	3.200	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
81	3.100	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
82	3.000	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
83	2.900	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
84	2.800	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
85	2.700	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
86	2.600	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
87	2.500	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
88	2.400	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
89	2.300	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
90	2.200	8.55	0.53	0.19	0.22	0.00	0.03	0.22	0.00	0.98	0.98	0.98	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.00
AVG 20 DEG C RATE			0.50	0.17	0.20	0.00	0.03	0.20	0.00	0.80			0.12	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* $g/m^2/d$ ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m^3	COLI #/100mL	NCM
71	4.100	23.14	0.01	2.86	55.52	6.53	3.85	2.46	3.85	2.46	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
72	4.000	23.14	0.01	2.86	55.43	6.51	3.87	2.48	3.87	2.48	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
73	3.900	23.14	0.01	2.85	55.33	6.50	3.88	2.50	3.88	2.50	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
74	3.800	23.14	0.01	2.85	55.24	6.49	3.89	2.51	3.89	2.51	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
75	3.700	23.14	0.01	2.84	55.14	6.48	3.90	2.52	3.90	2.52	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
76	3.600	23.14	0.01	2.84	55.05	6.48	3.90	2.53	3.90	2.53	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
77	3.500	23.14	0.01	2.83	54.96	6.47	3.91	2.54	3.91	2.54	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
78	3.400	23.14	0.01	2.83	54.87	6.47	3.91	2.54	3.91	2.54	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
79	3.300	23.14	0.01	2.82	54.77	6.46	3.91	2.55	3.91	2.55	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
80	3.200	23.14	0.01	2.82	54.68	6.46	3.91	2.55	3.91	2.55	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
81	3.100	23.14	0.01	2.81	54.59	6.46	3.92	2.56	3.92	2.56	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
82	3.000	23.14	0.01	2.81	54.50	6.45	3.92	2.56	3.92	2.56	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
83	2.900	23.14	0.01	2.81	54.41	6.45	3.92	2.57	3.92	2.57	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
84	2.800	23.14	0.01	2.80	54.33	6.45	3.92	2.57	3.92	2.57	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
85	2.700	23.14	0.01	2.80	54.25	6.45	3.92	2.57	3.92	2.57	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
86	2.600	23.14	0.01	2.79	54.17	6.45	3.92	2.57	3.92	2.57	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
87	2.500	23.14	0.01	2.79	54.10	6.45	3.92	2.57	3.92	2.57	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
88	2.400	23.14	0.01	2.79	54.03	6.45	3.92	2.58	3.92	2.58	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
89	2.300	23.14	0.01	2.78	53.99	6.45	3.92	2.58	3.92	2.58	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
90	2.200	23.14	0.01	2.78	53.96	6.45	3.92	2.58	3.92	2.58	1.12	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

```
STREAM SUMMARY                                          BIG CREEK WATERSHED MODEL
HEADWATER                                               BIG CREEK WINTER 80% REDUCTION IN MAN-MADE RUN

 TRAVEL TIME       =         175.94 DAYS

 MAXIMUM EFFLUENT  =          41.62 PERCENT

 FLOW              =   0.02830 TO    0.16180   m³/s
 DISPERSION        =   0.0710  TO    0.3056    m²/s
 VELOCITY          =   0.00031 TO    0.00133   m/s
 DEPTH             =   1.40    TO    1.58      m
 WIDTH             =  59.44    TO   86.87      m

 BOD DECAY         =    0.19   TO    0.22      per day
 NH3 DECAY         =    0.00   TO    0.00      per day
 SOD               =    0.14   TO    0.98      g/m²/d
 NH3 SOURCE        =    0.00   TO    0.00      g/m²/d
 REAERATION        =    0.47   TO    0.53      per day
 BOD SETTLING      =    0.22   TO    0.22      per day
 NBOD DECAY        =    0.10   TO    0.14      per day
 NBOD SETTLING     =    0.11   TO    0.11      per day

 TEMPERATURE       =   23.14   TO   23.14      deg C
 DISSOLVED OXYGEN  =    6.45   TO    7.43      mg/L


     .....EXECUTION COMPLETED
```

Appendix D4 - Winter Justifications

Big Creek 101506 Winter Projection for 80% Reduction Man-Made Justification

DATA TYPE 3 - PROGRAM CONSTANTS			
CONSTANT NAME	**VALUE**	**UNITS**	**DATA SOURCE**
KL MINIMUM	0.7	m/day	The minimum KL of 2.3 ft/day converted to 0.70 m/day.
INHIBITION CONTROL VALUE	3		The water column dissolved oxygen demand is assumed to come primarily from facultative bacteria under anoxic conditions and SOD is not influenced by modeled dissolved oxygen levels in the upper water column.
K2 MAXIMUM	25	1/day at 20 deg C	EPA Policy in the absence of a measured value.
HYDRAULIC CALCULATION METHOD	2		The low slopes in this waterbody cause a substantial amount of water to be present during critical flow conditions. This method allows the model to predict a more accurate depth and width during low flow conditions.
SETTLING RATE UNITS	2		By making the settling rate a velocity the rate becomes dependent upon the depth.
ALGAE OXYGEN PRODUCTION	0		Standard practice for steady state calibration to a wide variation in DO.
DISPERSION EQUATION	3		Equation used to account for advective flows.
OCEAN EXCHANGE RATIO	0		This was done to allow dispersion in the model but not to force the bottom element through the boundary conditions.

Big Creek 101506 Winter Projection For 80% Reduction in Man-Made Justification

DATA TYPE 8 - REACH IDENTIFICATION DATA

Reach	ID	Name	Upstream River Kilometer	Downstream River Kilometer	Element Length, meters	Data Source
1	BGC	BGC01 to BGC02	11.20	7.10	100.0000	ARC MAP Calc.
2	BGC	BGC02 to BGC03	7.10	4.20	100.0000	ARC MAP Calc.
3	BGC	BGC03 to BGC04	4.20	2.20	100.0000	ARC MAP Calc.

Big Creek 101506 Winter Projection For 80% Reduction in Man-Made Justification

DATA TYPE 9 - ADVECTIVE HYDRAULIC COEFFICIENTS

Reach	Name	Width Coeff. "a"	Width Exp. "b"	Width Const. "c"	Data Source	Depth Coeff. "d"	Depth Exp. "e"	Depth Const. "f"	Data Source
1	BGC01 to BGC02	0	0	59.436	BGC02	0	0	1.527	BGC02
2	BGC02 to BGC03	0	0	75.895	BGC03	0	0	1.576	BGC03
3	BGC03 to BGC04	0	0	86.868	BGC04	0	0	1.396	BGC04

Big Creek 101506 Winter Projection for 80% Reduction in Man-Made Justification

DATA TYPE 10 - DISPERSIVE HYDRAULIC COEFFICIENTS

Reach	a	Data Source	b	c	d	Data Source
1	160	Calibration	0.8333	0.0	1.0	Constant values used for advective dispersion
2	160	Calibration	0.8333	0.0	1.0	Constant values used for advective dispersion
3	160	Calibration	0.8333	0.0	1.0	Constant values used for advective dispersion

Big Creek 101506 Winter Projection For 80% Reduction in Man-Made Justification								
DATA TYPE 11-INITIAL CONDITIONS								
Reach	Name	Temp, deg C	Sal, ppt	DO, mg/l	Data Source	Chlorophyll a	Macrophytes	Data Source
1	BGC01 to BGC02	23.14	0.01	5.00	Temp - 90th Percentile Winter Temperature for WQM Site 1227, Salinity - Avg(BGC01,BGC02) Continuous Monitoring, DO - DO standard for Subsegment 120505	10.00	10.00	Best Professional Judgement
2	BGC02 to BGC03	23.14	0.01	5.00	Temp - 90th Percentile Winter Temperature for WQM Site 1227, Salinity - Avg(BGC02,BGC03) Continuous Monitoring, DO - DO standard for Subsegment 120505	10.00	10.00	Best Professional Judgement
3	BGC03 to BGC04	23.14	0.01	5.00	Temp - 90th Percentile Winter Temperature for WQM Site 1227, Salinity - Avg(BGC03,BGC04) Continuous Monitoring, DO - DO standard for Subsegment 120505	10.00	10.00	Best Professional Judgement

Big Creek 101506 Winter Projection For 80% Reduction in Man-Made Justification													
		DATA TYPE 12 - REAERATION, SEDIMENT OXYGEN DEMAND AND BOD COEFFICIENTS				DATA TYPE 12 - REAERATION, SEDIMENT OXYGEN DEMAND AND BOD COEFFICIENTS							
REACH	NAME	K2 OPT	Data Source	BKGRND SOD, gmO2/m2/day at 20 deg C	Data Source	Aerobic BOD1 Dec Rate (1/day)	Data Source	BOD1 SETT RATE (1/day)	Data Source	Aerobic BOD2 Dec Rate (1/day)	Data Source	BOD2 SETT RATE (1/day)	Data Source
1	BGC01 to BGC02	11	Texas Equation	0.114	80% Reduction in Man-Made Loading	0.1806	Average (BGC01,BGC02)	0.2	Calibration	0.0344	Average (BGC01,BGC02)	0.2	Calibration
2	BGC02 to BGC03	11	Texas Equation	0.478	80% Reduction in Man-Made Loading	0.1915	Average (BGC02,BGC03)	0.2	Calibration	0.0306	Average (BGC02,BGC03)	0.2	Calibration
3	BGC03 to BGC04	11	Texas Equation	0.803	80% Reduction in Man-Made Loading	0.1666	Average (BGC03,BGC04)	0.2	Calibration	0.0283	Average (BGC03,BGC04)	0.2	Calibration

Big Creek 101506 Winter Projection For 80% Reduction in Man-Made Justification					
DATA TYPE 13 - NITROGEN AND PHOSPHORUS COEFFICIENTS					
Reach	**Name**	**NBOD decay rate, 1/day**	**Data Source**	**NBOD settling rate, 1/day**	**Data Source**
1	BGC01 to BGC02	0.0868	Average (BGC01,BGC02)	0.10	Calibration
2	BGC02 to BGC03	0.0886	Average (BGC02,BGC03)	0.10	Calibration
3	BGC03 to BGC04	0.1173	Average (BGC03,BGC04)	0.10	Calibration

Big Creek 101506 Winter Projection For 80% Reduction in Man-Made Justification

DATA TYPES 16 - INCREMENTAL DATA FOR TEMP AND CONS

Reach	Reach Name	Incr. Inflow, m3	Data Source	Temp	Data Source	Salinity ppt	Data Source	Chl	Cond	Data Source
1	BGC1 to BGC2	0.0125	BGC2 Minimal Flow - (BGC1 Minimal Flow + Cainey Bayou)	23.14	Temp - 90th Percentile Temperature for WQM Site 1227 Winter Season	0.01	Average(BGC01,BGC02)		80.0	Calibration
2	BGC2 to BGC3	0.0879	BGC3 - BGC2 Minimal Flow	23.14	Temp - 90th Percentile Temperature for WQM Site 1227 Winter Season	0.01	Average(BGC02,BGC03)	2.5	55.0	Calibration
3	BGC3 to BGC4	0.0054	BGC4 - BGC3 Minimal Flow	23.14	Temp - 90th Percentile Temperature for WQM Site 1227 Winter Season	0.01	Average(BGC03,BGC04)			Calibration

Big Creek 101506 Winter Projection For 80% Reduction in Man-Made Justification

DATA TYPES 17 - INCREMENTAL DATA FOR DO, BOD, AND NITROGEN

Reach	Reach Name	DO, mg/l	Data Source
1	BDL1 to BDL2	2.0	Normal Groundwater DO
2	BDL2 to BDL3	2.0	Normal Groundwater DO
3	BDL3 to BDL4	2.0	Normal Groundwater DO

Big Creek 101506 Winter Projection For 80% Reduction in Man-Made Justification						
DATA TYPE 19 - NONPOINT SOURCES						
Reach	Reach Name	Length of Reach, km	UCBOD1, kg/day	UCBOD2, kg/day	NBOD, kg/day	Data Source
1	BGC01 to BGC02	4.10	530.630	360.070	155.399	80% Reduction in Man-Made Loading
2	BGC02 to BGC03	2.90	606.971	228.074	90.126	80% Reduction in Man-Made Loading
3	BGC03 to BGC04	2.00	389.943	156.742	66.902	80% Reduction in Man-Made Loading

Big Creek 101506 Winter Projection For 80% Reduction in Man-Made Justification								
DATA TYPES 20 - HEADWATER DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES								
Headwater Name	Element No.	Logical Unit Number	Headwater Flow, cms	Temp, deg C	Salinity	Chlorides	Conductivity	Data Source
Headwater 1	1	1	0.0280	23.14	0.01	4.4	52.70	BGC01 = LTP Winter Projection Default, Temp - 90th Percentile Winter Temp for WQN 1227, Salinity and Conductivity - BGC01 Insitu, Chlorides - BGC01 Lab Data

Big Creek 101506 Winter Projection For 80% Reduction in Man-Made Justification

DATA TYPES 21 - HEADWATER DATA FOR DO, BOD, AND NITROGEN

Headwater Name	Dissolved Oxygen, mg/L	UCBOD1, mg/l	UCBOD2, mg/l	NBOD, mg/l	Data Source
Headwater 1	7.7	6.12	1.46	1.52	DO - 90% DO Sat for WQN Site 1227 UCBOD1, UCBOD2, AND NBOD - 80% Reduction in Man-Made Loading

Big Creek 101506 Winter Projection For 80% Reduction in Man-Made Justification

DATA TYPES 22 - HEADWATER DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES

Headwater Name	Chlorophyll a, ug/L	Date Source			
Headwater 1	10	Best Professional Judgement			

Big Creek 101506 Winter Projection For 80% Reduction in Man-Made Justification

	DATA TYPES 24 - WASTELOAD DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES								
Wasteload / Withdrawal Name	EL #	Flow, cms	Temperature, deg C	Data Source	Chlorides	Data Source	Salinity	Conductivity	Data Source
Cainey Bayou	37	0.0280	23.14	Flow - LTP Winter Default Temp - 90th Percentile Temp for WQN Site 1227 Winter Season	3.7	CAB01 Lab Data	0.01	51.5	CAB01 Insitu - Conductivity and Salinity

Big Creek 101506 Winter Projection For 80% Reduction in Man-Made Justification

DATA TYPES 25 - WASTELOAD DATA FOR DO, BOD, AND NITROGEN

Wasteload / Withdrawal Name	EL #	DO, mg/l	Data Source	UCBOD1, mg/l	UCBOD2, mg/l	UNBOD, mg/l	Data Source
Cainey Bayou	37	5.00	DO Standard for Subsegment 101506 Winter Season	5.96	1.53	1.63	80% Reduction in Man Made Loading

Big Creek 101506 Winter Projection For 80% Reduction in Man-Made Justification

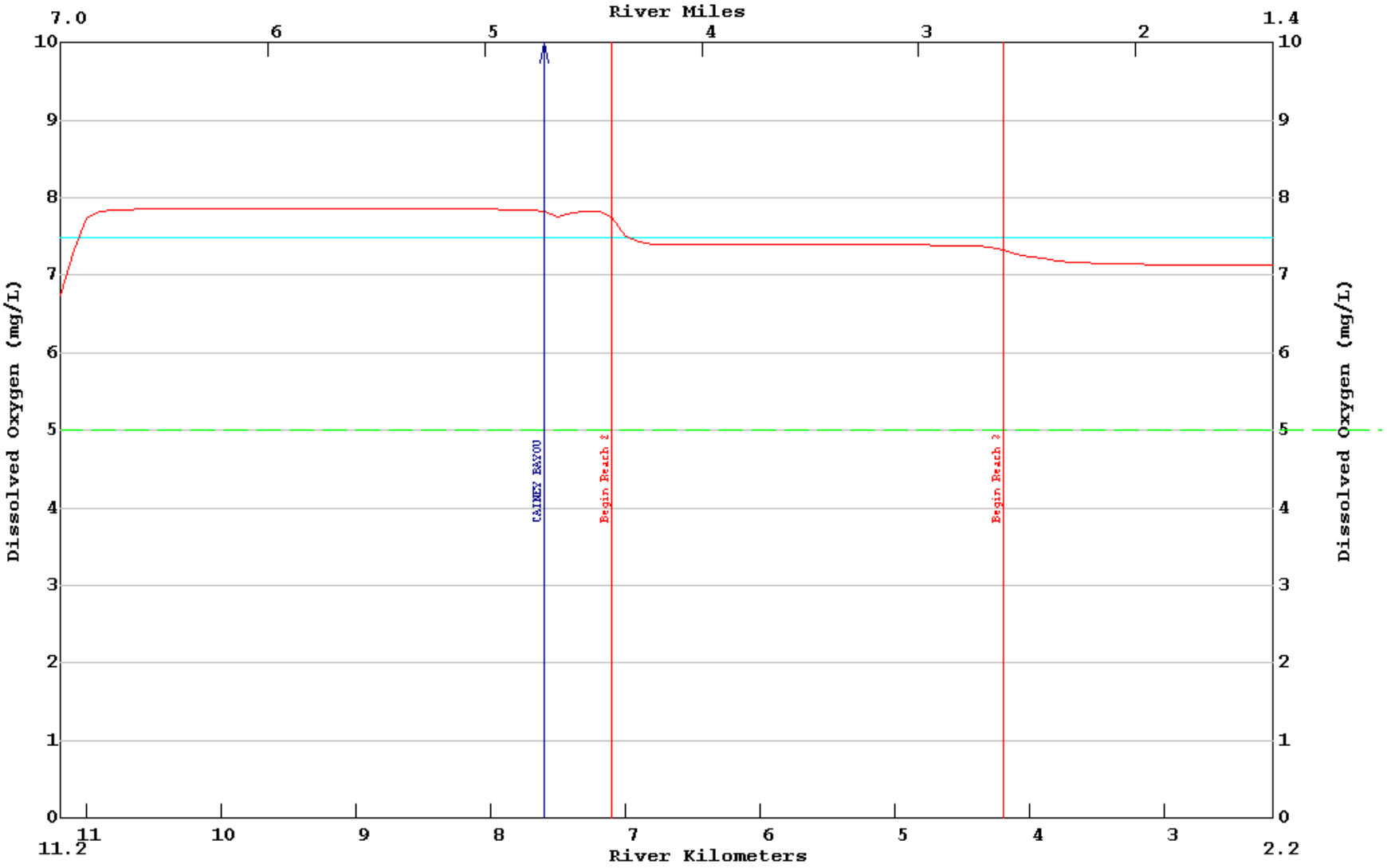
DATA TYPES 27 - LOWER BOUNDARY CONDITIONS

Parameter	Value	Units	Data Source
TEMPERATURE	23.14	^{O}C	90th Percentile Temperature for WQN Site 1227 Winter Season
SALINITY	0.01	ppt	BGC05 Continuous Monitoring
CHLORIDES	2.8	ppm	BGC05 Lab Data
CONDUCTIVITY	47.70	umhos/cm	BGC05 Insitu
DISSOLVED OXYGEN	5.00	mg/L	DO Standard for 101506 Winter Season
CBOD1	7.8370	mg/L	BGC05 Lab Data
CBOD2	5.0311	mg/L	BGC05 Lab Data
CHLOROPHYLL A	10.0	ug/L	Seasonal Projection Standard
NBOD	2.4180	mg/L	BGC05 Lab Data

Appendix D5 – Summer No Man-Made Loading Input, Overlay, and Output Files

FINAL REPORT
Big Creek Watershed TMDL
Subsegment 101506
Originated: February 1, 2007
Revised: January 18, 2008

LA-QUAL Version 8.00 Run at 11:45 on 01/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKSUMM
BIG CREEK SUMMER NO LOAD RUN min= 6.74 max= 7.85
:MAINSTEM



BIG CREEK 101506 SUMMER NO MAN-MADE LOADING PROJECTION INPUT DATA SET

```
CNTROL01     BIG CREEK WATERSHED MODEL
CNTROL02     BIG CREEK SUMMER NO LOAD RUN
CNTROL04 YES METRIC UNITS
ENDATA01
MODOPT01  NO TEMPERATURE
MODOPT02  NO SALINITY
MODOPT03 YES CONSERVATIVE MATERIAL  I = CHLORIDES                  IN MG/L
MODOPT04 YES CONSERVATIVE MATERIAL II = CONDUCTIVITY               IN MG/L
MODOPT05 YES DISSOLVED OXYGEN
MODOPT06 YES BOD1 BIOCHEMICAL OXYGEN DEMAND
MODOPT06 YES BOD2 BIOCHEMICAL OXYGEN DEMAND
MODOPT08 YES NBOD OXYGEN DEMAND
MODOPT10  NO PHOSPHORUS
MODOPT11  NO CHLOROPHYLL A
MODOPT12  NO MACROPHYTES
MODOPT13  NO COLIFORM
ENDATA02
PROGRAM  KL MINIMUM                        =     0.7
PROGRAM  INHIBITION CONTROL VALUE          =     3.
PROGRAM  K2 MAXIMUM                        =     25.0
PROGRAM  HYDRAULIC CALCULATION METHOD      =     2.
PROGRAM  SETTLING RATE UNITS               =     2.
PROGRAM  ALGAE OXYGEN PROD                 =     0.
PROGRAM  DISPERSION EQUATION               =     3.
PROGRAM  OCEAN EXCHANGE RATIO              =     0.0
ENDATA03
!Temperature Correction Constants
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!        ******** ********
ENDATA04
ENDATA05
ENDATA06
ENDATA07
!Reach Identification Data
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  -- ******************************----------*********----------
```

```
!          R#  ID   SITE NAME                          RKM        RKM    LENGTH
REACH ID    1  BGC   BGC1 TO BGC2                     11.2        7.1      0.1
REACH ID    2  BGC   BGC2 TO BGC3                      7.1        4.2      0.1
REACH ID    3  BGC   BGC3 TO BGC4                      4.2        2.2      0.1
ENDATA08
!Advective Hydraulic Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  -------*******-------*******-------*******-------*******
!               a      b       c     d      e        f
!              WIDTH  WIDTH   WIDTH DEPTH  DEPTH   DEPTH
!          R#   COEFF   EXP    CONST COEFF   EXP    CONST SLOPE MANNING
HYDR-1      1   0.00   0.00   59.436  0.00   0.00   1.527
HYDR-1      2   0.00   0.00   75.895  0.00   0.00   1.576
HYDR-1      3   0.00   0.00   86.868  0.00   0.00   1.396
ENDATA09
!Dispersive Hydraulic Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  -----**********----------**********----------
!              TIDAL
!          R#  RANGE    a          b         c         d
HYDR-2      1   1.0     160.0    0.8333      0.0       1.0
HYDR-2      2   1.0     160.0    0.8333      0.0       1.0
HYDR-2      3   1.0     160.0    0.8333      0.0       1.0
ENDATA10
!Initial Conditions
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  --------********--------********--------********--------********
!          R#    TEMP  SALINITY   DO     NH3 N  NIT NIT  PHOS   CHL A   MACROPHYTES
INITIAL     1    30.50  0.01     5.00                             10.0      10
INITIAL     2    30.50  0.01     5.00                             10.0      10
INITIAL     3    30.50  0.01     5.00                             10.0      10
ENDATA11
!Reaeration, Sediment Oxygen Demand and BOD Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8---------9
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  -----******----- ******-------*******-------*******-------*******-------***
!               REA    KL                     CBOD1   CBOD1              CBOD2  CBOD2
```

```
!          R#   EQ    MIN              SOD    DECAY   SETT               DECAY   SETT
COEF-1      1  11.00                   0.052  0.1806  0.20               0.0344  0.20
COEF-1      2  11.00                   0.204  0.1915  0.20               0.0306  0.20
COEF-1      3  11.00                   0.370  0.1666  0.20               0.0283  0.20
ENDATA12
!Nitrogen and Phosphorus Coefficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  -------*******-------*******-------*******-------
!              NBOD     NBOD
!          R#  DECAY    SETT
COEF-2      1  0.0868   0.10
COEF-2      2  0.0886   0.10
COEF-2      3  0.1173   0.10
ENDATA13
ENDATA14
!Coliform and Nonconservative Cofficients
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  -------*******-------*******
ENDATA15
!Incremental Data for Flow, Temperature, Salinity, and Conservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  ---------********---------********---------********
!          R#   OUTFLOW   INFLOW  TEMP     SALINITY CHLORIDE  COND
INCR-1      1              0.0125  30.50                        80
INCR-1      2              0.0879  30.50                2.5     55
INCR-1      3              0.0054  30.50
ENDATA16
!Incremental Data for DO, BOD, and Nitrogen
!--------1---------2---------3---------4---------5---------6---------7---------8
!23456789012345678901234567890123456789012345678901234567890123456789012345678901234567890
!         ***  ---------********---------********---------********
!          R#      DO
INCR-2      1     2.00
INCR-2      2     2.00
INCR-2      3     2.00
ENDATA17
!Incremental Data for Phosphorus, Chlorophyll, Coliform and Nonconservatives
```

```
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!         ***  ---------********---------********
!          R#
INCR-3      1
INCR-3      2
INCR-3      3
ENDATA18
!Nonpoint Source Data
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!         ***  ---------********---------********---------********
!          R#    CBOD1     NBOD                                CBOD2
NONPOINT    1   240.840    70.532                              163.427
NONPOINT    2   259.295    38.501                               97.432
NONPOINT    3   179.923    30.869                               72.322
ENDATA19
!Headwater Data for Flow, Temperature, Salinity, and Conservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  -------------------- *** --------********--------********--------
!         E#    NAME                      FLOW    TEMP  SALIN   CHLORIDE   COND
HDWTR-1     1  HEADWATER                 0.0028   30.50  0.01    4.4       52.7
ENDATA20
!Headwater Data for DO, BOD, and Nitrogen
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  ---------********---------********---------********
!          E#      DO      CBOD1    NBOD                        CB0D2
HDWTR-2     1      6.74   4.9000    0.980                       0.0000
ENDATA21
!Headwater Data for Phosphorus, Chlorophyll, Coliform, and Nonconservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  ---------********---------********
!          E#  PHOSPHOR   CHL A   COLIFORM  NONCONSERVATIVE
HDWTR-3     1              10.0
ENDATA22
ENDATA23
!Wasteload Data for Flow, Temperature, Salinity, and Conservatives
```

```
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  --------------------*********---------*********---------*********
!          E#     NAME               FLOW      TEMP   SALINITY CHLORIDE  COND
WSTLD-1    37  CAINEY BAYOU          0.0028    30.50     0.01     3.7    51.5
ENDATA24
!Wasteload Data for DO, BOD, and Nitrogen
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  ---------*********-----*********---------*****---------*********
!          E#     DO       CBOD1         NBOD                           CBOD2
WSTLD-2    37    5.00      4.8300        1.0500                         0.0000
ENDATA25
!Wasteload Data for Phosphorus, Chlorophyll, Coliform, and Nonconservatives
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  ---------*********---------*********
!          E#  PHOSPHOR  CHL A    COLIFORM NONCONSERVATIVE
WSTLD-3    37
ENDATA26
LOWER BC TEMPERATURE                        =  30.50
LOWER BC SALINITY                           =   0.01
LOWER BC CONSERVATIVE MATERIAL I            =   2.8
LOWER BC CONSERVATIVE MATERIAL II           =  47.7
LOWER BC DISSOLVED OXYGEN                   =   5.00
LOWER BC BOD1 BIOCHEMICAL OXYGEN DEMAND     =   7.8370
LOWER BC BOD2 BIOCHEMICAL OXYGEN DEMAND     =   5.0311
LOWER BC NBOD                               =   2.4180
LOWER BC CHLOROPHYLL A                      =  10.0
ENDATA27
!Dam Data
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ****  ******************* ** ******** ******** ********
ENDATA28
ENDATA29
!--------1---------2---------3---------4---------5---------6---------7---------8
!234567890123456789012345678901234567890123456789012345678901234567890123456789 0
!        ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** **
NUMBER OF PLOTS = 1
```

```
NUMBER OF REACHES IN PLOT 1 =  3                          INCREMENT = 0.1
PLOT RCH  1  2  3
ENDATA30
OVERLAY 1 BIGCREEKOVLPROJ.TXT                   :MAINSTEM
ENDATA31
```

BIG CREEK 101506 SUMMER NO MAN-MADE LOADING PROJECTION OVERLAY DATA SET

```
MRK  7.10      Begin Reach 2
MRK  4.20      Begin Reach 3
MRK  2.20      Begin Reach 4
STD  5   5.00       0.01      11.19
END
```

BIG CREEK 101506 SUMMER NO MAN-MADE LOADING PROJECTION OVERLAY DATA SET

```
LA-QUAL Version 8.00
Louisiana Department of Environmental Quality

Input file is O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKSUMNOLOAD.txt
Output produced at 11:45 on 01/18/2007

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

CARD TYPE       CONTROL TITLES

TITLE01         BIG CREEK WATERSHED MODEL
TITLE02         BIG CREEK SUMMER NO LOAD RUN
CNTROL04  YES   METRIC UNITS
ENDATA01

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

CARD TYPE       MODEL OPTION

MODOPT01   NO   TEMPERATURE
MODOPT02   NO   SALINITY
MODOPT03  YES   CONSERVATIVE MATERIAL  I = CHLORIDES                 IN MG/L
MODOPT04  YES   CONSERVATIVE MATERIAL II = CONDUCTIVITY              IN MG/L
MODOPT05  YES   DISSOLVED OXYGEN
MODOPT06  YES   BOD1 BIOCHEMICAL OXYGEN DEMAND
MODOPT06  YES   BOD2 BIOCHEMICAL OXYGEN DEMAND
MODOPT08  YES   NBOD OXYGEN DEMAND
MODOPT10   NO   PHOSPHORUS
MODOPT11   NO   CHLOROPHYLL A
MODOPT12   NO   MACROPHYTES
MODOPT13   NO   COLIFORM
ENDATA02

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

CARD TYPE       DESCRIPTION OF CONSTANT                       VALUE

PROGRAM         KL MINIMUM                        =         0.70000 meters/day
PROGRAM         INHIBITION CONTROL VALUE          =         3.00000 (inhibit all rates but SOD)
PROGRAM         K2 MAXIMUM                        =        25.00000 per day
```

```
PROGRAM         HYDRAULIC CALCULATION METHOD       =         2.00000 (widths and depths)
PROGRAM         SETTLING RATE UNITS                =         2.00000 (values entered as per day)
PROGRAM         ALGAE OXYGEN PROD                  =         0.00000 mg O/ug chl a/day
PROGRAM         DISPERSION EQUATION                =         3.00000 (values entered as a function of D,Q,Vmean)
PROGRAM         OCEAN EXCHANGE RATIO               =         0.00000
ENDATA03

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

 CARD TYPE     RATE CODE     THETA VALUE

ENDATA04

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

CARD TYPE       DESCRIPTION OF CONSTANT                        VALUE

ENDATA05

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

CARD TYPE       DESCRIPTION OF CONSTANT                        VALUE

ENDATA06

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

CARD TYPE       DESCRIPTION OF CONSTANT                        VALUE

ENDATA07

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

REACH ID      1   BG     BGC1 TO BGC2                    11.20  TO    7.10   0.1000     4.10      41        1     41
REACH ID      2   BG     BGC2 TO BGC3                     7.10  TO    4.20   0.1000     2.90      29       42     70
REACH ID      3   BG     BGC3 TO BGC4                     4.20  TO    2.20   0.1000     2.00      20       71     90
ENDATA08

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

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

HYDR-1        1   BG       0.000       0.000      59.436       0.000       0.000       1.527     0.00000   0.000
HYDR-1        2   BG       0.000       0.000      75.895       0.000       0.000       1.576     0.00000   0.000
HYDR-1        3   BG       0.000       0.000      86.868       0.000       0.000       1.396     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"

HYDR          1   BG      1.00      160.000          0.833          0.000          1.000
HYDR          2   BG      1.00      160.000          0.833          0.000          1.000
```

```
HYDR          3   BG      1.00      160.000          0.833          0.000          1.000
ENDATA10

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

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

INITIAL          1   BG       30.50      0.01      5.00      0.00      0.00      0.00     10.00     10.00
INITIAL          2   BG       30.50      0.01      5.00      0.00      0.00      0.00     10.00     10.00
INITIAL          3   BG       30.50      0.01      5.00      0.00      0.00      0.00     10.00     10.00
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

COEF-1     1   BG  11 TEXAS            0.000     0.000     0.000     0.052     0.181     0.200     0.000     0.000     0.034     0.200     0.000     0.000
COEF-1     2   BG  11 TEXAS            0.000     0.000     0.000     0.204     0.191     0.200     0.000     0.000     0.031     0.200     0.000     0.000
COEF-1     3   BG  11 TEXAS            0.000     0.000     0.000     0.370     0.167     0.200     0.000     0.000     0.028     0.200     0.000     0.000
ENDATA12

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

CARD TYPE      REACH  ID        NBOD      NBOD   ORGN CONV       NH3       NH3      PHOS     DENIT
                                DECA      SETT  TO NH3 SRCE     DECA      SRCE      SRCE      RATE

COEF-2           1   BG       0.087     0.100     0.000       0.000     0.000     0.000     0.000
COEF-2           2   BG       0.089     0.100     0.000       0.000     0.000     0.000     0.000
COEF-2           3   BG       0.117     0.100     0.000       0.000     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

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

INCR-1           1   BG       0.00000     0.01250     30.50      0.00      0.00     80.00   0.00305   0.00000
INCR-1           2   BG       0.00000     0.08790     30.50      0.00      2.50     55.00   0.03031   0.00000
INCR-1           3   BG       0.00000     0.00540     30.50      0.00      0.00      0.00   0.00270   0.00000
ENDATA16

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

```
CARD TYPE      REACH  ID          DO       BOD      NBOD                          BOD#2

INCR-2           1   BG        2.00      0.00      0.00      0.00      0.00      0.00
INCR-2           2   BG        2.00      0.00      0.00      0.00      0.00      0.00
INCR-2           3   BG        2.00      0.00      0.00      0.00      0.00      0.00
ENDATA17

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

 CARD TYPE      REACH  ID        PHOS     CHL A      COLI       NCM

INCR-3           1   BG        0.00      0.00      0.00      0.00
INCR-3           2   BG        0.00      0.00      0.00      0.00
INCR-3           3   BG        0.00      0.00      0.00      0.00
ENDATA18

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

CARD TYPE      REACH  ID       BOD#1     NBOD       COLI       NCM        DO     BOD#2

NONPOINT         1   BG      240.84     70.53      0.00      0.00      0.00    163.43
NONPOINT         2   BG      259.30     38.50      0.00      0.00      0.00     97.43
NONPOINT         3   BG      179.92     30.87      0.00      0.00      0.00     72.32
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      MG/L      MG/L

HDWTR-1          1     HEADWATER               0   0.00280    0.099   30.50     0.01     4.400    52.700
ENDATA20

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

CARD TYPE     ELEMENT   NAME                          DO     BOD#1     NBOD                          BOD#2
                                                    mg/L      mg/L      mg/L      mg/L      mg/L      mg/L

HDWTR-2          1     HEADWATER                   6.74      4.90      0.98      0.00      0.00      0.00
ENDATA21

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

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

HDWTR-3          1     HEADWATER                    0.00     10.00      0.00      0.00
ENDATA22

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

CARD TYPE   JUNCTION   UPSTRM     RIVER     NAME
             ELEMENT  ELEMENT     KILOM

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      MG/L      MG/L

WSTLD-1       37       7.60  CAINEY BAYOU           0.00280    0.09887    0.064   30.50     0.01     3.700    51.500
ENDATA24

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

WSTLD-2          37     CAINEY BAYOU                5.00      4.83      0.00      1.05      0.00      0.00      0.00      0.00
ENDATA25

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

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

WSTLD-3          37     CAINEY BAYOU                0.00      0.00      0.00      0.00
ENDATA26

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

CARD TYPE    CONSTITUENT                    CONCENTRATION

LOWER BC     TEMPERATURE                       =     30.500     deg C
LOWER BC     SALINITY                          =      0.010     ppt
LOWER BC     CONSERVATIVE MATERIAL I           =      2.800     MG/L
LOWER BC     CONSERVATIVE MATERIAL II          =     47.700     MG/L
LOWER BC     DISSOLVED OXYGEN                  =      5.000     mg/L
LOWER BC     BOD1 BIOCHEMICAL OXYGEN DEMAND    =      7.837     mg/L
LOWER BC     BOD2 BIOCHEMICAL OXYGEN DEMAND    =      5.031     mg/L
LOWER BC     NBOD                              =      2.418     mg/L
LOWER BC     CHLOROPHYLL A                     =     10.000     µg/L
ENDATA27

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

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

ENDATA28

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

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

ENDATA29

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


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

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

```
OVERLAY 1 BIGCREEKOVLPROJ.TXT                  :MAINSTEM
ENDATA31


     .....NO ERRORS DETECTED IN INPUT DATA
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN   6 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11


FINAL REPORT    HEADWATER                                       BIG CREEK WATERSHED MODEL
REACH NO.  1       BGC1 TO BGC2                                 BIG CREEK SUMMER NO LOAD RUN
```

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

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
1	HDWTR	0.00280	30.50	0.01	4.40	52.70	6.74	4.90	0.00	4.90	0.00	0.98	0.00	0.00	0.00	10.00	0.00	0.00
EACH	INCR	0.00030	30.50	0.00	0.00	80.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	
37	WSTLD	0.00280	30.50	0.01	3.70	51.50	5.00	4.83	0.00	4.83	0.00	1.05	0.00	0.00	0.00	0.00	0.00	0.00

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m^3/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m^3	SURFACE AREA m^2	X-SECT AREA m^2	TIDAL PRISM m^3	TIDAL VELO m/s	DISPRSN m^2/s	MEAN VELO m/s
1	11.20	11.10	0.00310	0.0	0.00003	33.83	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.008	0.000
2	11.10	11.00	0.00341	0.0	0.00004	30.81	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.009	0.000
3	11.00	10.90	0.00371	0.0	0.00004	28.28	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.009	0.000
4	10.90	10.80	0.00402	0.0	0.00004	26.13	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.010	0.000
5	10.80	10.70	0.00432	0.0	0.00005	24.29	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.011	0.000
6	10.70	10.60	0.00463	0.0	0.00005	22.69	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.012	0.000
7	10.60	10.50	0.00493	0.0	0.00005	21.29	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.012	0.000
8	10.50	10.40	0.00524	0.0	0.00006	20.05	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.013	0.000
9	10.40	10.30	0.00554	0.0	0.00006	18.95	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.014	0.000
10	10.30	10.20	0.00585	0.0	0.00006	17.96	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.015	0.000
11	10.20	10.10	0.00615	0.0	0.00007	17.07	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.015	0.000
12	10.10	10.00	0.00646	0.0	0.00007	16.26	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.016	0.000
13	10.00	9.90	0.00676	0.0	0.00007	15.53	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.017	0.000
14	9.90	9.80	0.00707	0.0	0.00008	14.86	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.018	0.000
15	9.80	9.70	0.00737	0.0	0.00008	14.25	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.018	0.000
16	9.70	9.60	0.00768	0.0	0.00008	13.68	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.019	0.000
17	9.60	9.50	0.00798	0.0	0.00009	13.16	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.020	0.000
18	9.50	9.40	0.00829	0.0	0.00009	12.67	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.021	0.000
19	9.40	9.30	0.00859	0.0	0.00009	12.22	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.022	0.000
20	9.30	9.20	0.00890	0.0	0.00010	11.81	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.022	0.000
21	9.20	9.10	0.00920	0.0	0.00010	11.41	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.023	0.000
22	9.10	9.00	0.00951	0.0	0.00010	11.05	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.024	0.000
23	9.00	8.90	0.00981	0.0	0.00011	10.71	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.025	0.000

24	8.90	8.80	0.01012	0.0	0.00011	10.38	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.025	0.000
25	8.80	8.70	0.01042	0.0	0.00011	10.08	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.026	0.000
26	8.70	8.60	0.01073	0.0	0.00012	9.79	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.027	0.000
27	8.60	8.50	0.01103	0.0	0.00012	9.52	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.028	0.000
28	8.50	8.40	0.01134	0.0	0.00012	9.27	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.028	0.000
29	8.40	8.30	0.01164	0.0	0.00013	9.02	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.029	0.000
30	8.30	8.20	0.01195	0.0	0.00013	8.79	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.030	0.000
31	8.20	8.10	0.01225	0.0	0.00013	8.57	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.031	0.000
32	8.10	8.00	0.01256	0.0	0.00014	8.37	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.031	0.000
33	8.00	7.90	0.01286	0.0	0.00014	8.17	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.032	0.000
34	7.90	7.80	0.01317	0.0	0.00015	7.98	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.033	0.000
35	7.80	7.70	0.01347	0.0	0.00015	7.80	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.034	0.000
36	7.70	7.60	0.01378	0.0	0.00015	7.63	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.035	0.000
37	7.60	7.50	0.01688	16.6	0.00019	6.22	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.042	0.000
38	7.50	7.40	0.01719	16.3	0.00019	6.11	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.043	0.000
39	7.40	7.30	0.01749	16.0	0.00019	6.01	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.044	0.000
40	7.30	7.20	0.01780	15.7	0.00020	5.90	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.045	0.000
41	7.20	7.10	0.01810	15.5	0.00020	5.80	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.045	0.000
TOT						564.39			372110.91	243687.52					
AVG					0.0001		1.53	59.44			90.76				
CUM						564.39									

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

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
1	11.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
2	11.000	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
3	10.900	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
4	10.800	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
5	10.700	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
6	10.600	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
7	10.500	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
8	10.400	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
9	10.300	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
10	10.200	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
11	10.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
12	10.000	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
13	9.900	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
14	9.800	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
15	9.700	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
16	9.600	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
17	9.500	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
18	9.400	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
19	9.300	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
20	9.200	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
21	9.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
22	9.000	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
23	8.900	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
24	8.800	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
25	8.700	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
26	8.600	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
27	8.500	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
28	8.400	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00

29	8.300	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
30	8.200	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
31	8.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
32	8.000	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
33	7.900	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
34	7.800	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
35	7.700	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
36	7.600	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
37	7.500	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
38	7.400	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
39	7.300	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
40	7.200	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
41	7.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.10	0.10	0.10	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
AVG 20 DEG C RATE			0.46	0.18	0.20	0.00	0.03	0.20	0.00	0.05			0.09	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
1	11.100	30.50	0.01	4.18	54.05	7.33	1.95	0.97	1.95	0.97	0.74	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
2	11.000	30.50	0.01	3.86	56.08	7.74	1.28	1.30	1.28	1.30	0.65	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
3	10.900	30.50	0.01	3.58	57.81	7.83	1.19	1.37	1.19	1.37	0.63	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
4	10.800	30.50	0.01	3.34	59.30	7.85	1.18	1.39	1.18	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
5	10.700	30.50	0.01	3.13	60.60	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
6	10.600	30.50	0.01	2.94	61.75	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
7	10.500	30.50	0.01	2.78	62.76	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
8	10.400	30.50	0.01	2.63	63.67	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
9	10.300	30.50	0.01	2.50	64.49	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
10	10.200	30.50	0.01	2.38	65.23	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
11	10.100	30.50	0.01	2.27	65.90	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
12	10.000	30.50	0.01	2.17	66.51	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
13	9.900	30.50	0.01	2.08	67.07	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
14	9.800	30.50	0.01	2.00	67.58	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
15	9.700	30.50	0.01	1.92	68.06	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
16	9.600	30.50	0.01	1.85	68.50	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
17	9.500	30.50	0.01	1.79	68.91	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
18	9.400	30.50	0.01	1.73	69.29	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
19	9.300	30.50	0.01	1.67	69.64	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
20	9.200	30.50	0.01	1.62	69.97	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
21	9.100	30.50	0.01	1.57	70.28	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
22	9.000	30.50	0.01	1.52	70.56	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
23	8.900	30.50	0.01	1.48	70.83	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
24	8.800	30.50	0.01	1.44	71.08	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
25	8.700	30.50	0.01	1.40	71.31	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
26	8.600	30.50	0.01	1.36	71.51	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
27	8.500	30.50	0.01	1.33	71.69	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
28	8.400	30.50	0.01	1.30	71.85	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
29	8.300	30.50	0.01	1.28	71.97	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
30	8.200	30.50	0.01	1.26	72.05	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
31	8.100	30.50	0.01	1.25	72.07	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
32	8.000	30.50	0.01	1.25	72.02	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
33	7.900	30.50	0.01	1.26	71.86	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
34	7.800	30.50	0.01	1.29	71.55	7.85	1.17	1.39	1.17	1.39	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

35	7.700	30.50	0.01	1.34	71.03	7.84	1.18	1.39	1.18	1.39	0.63	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
36	7.600	30.50	0.01	1.42	70.22	7.82	1.20	1.38	1.20	1.38	0.63	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
37	7.500	30.50	0.01	1.54	69.09	7.76	1.26	1.35	1.26	1.35	0.64	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
38	7.400	30.50	0.01	1.54	68.87	7.80	1.21	1.36	1.21	1.36	0.63	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
39	7.300	30.50	0.01	1.56	68.46	7.82	1.19	1.36	1.19	1.36	0.62	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
40	7.200	30.50	0.01	1.60	67.80	7.82	1.18	1.34	1.18	1.34	0.60	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
41	7.100	30.50	0.01	1.67	66.78	7.75	1.20	1.25	1.20	1.25	0.55	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

FINAL REPORT HEADWATER BIG CREEK WATERSHED MODEL
REACH NO. 2 BGC2 TO BGC3 BIG CREEK SUMMER NO LOAD RUN

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

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
42	UPR RCH	0.01810	30.50	0.01	1.67	66.78	7.75	1.20	1.25	1.20	1.25	0.55	0.00	0.00	0.00	10.00	0.00	0.00
EACH	INCR	0.00303	30.50	0.00	2.50	55.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
42	7.10	7.00	0.02113	13.3	0.00018	6.55	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.041	0.000
43	7.00	6.90	0.02416	11.6	0.00020	5.73	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.047	0.000
44	6.90	6.80	0.02719	10.3	0.00023	5.09	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.053	0.000
45	6.80	6.70	0.03022	9.3	0.00025	4.58	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.059	0.000
46	6.70	6.60	0.03326	8.4	0.00028	4.16	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.065	0.000
47	6.60	6.50	0.03629	7.7	0.00030	3.82	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.071	0.000
48	6.50	6.40	0.03932	7.1	0.00033	3.52	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.077	0.000
49	6.40	6.30	0.04235	6.6	0.00035	3.27	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.083	0.000
50	6.30	6.20	0.04538	6.2	0.00038	3.05	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.089	0.000
51	6.20	6.10	0.04841	5.8	0.00040	2.86	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.095	0.000
52	6.10	6.00	0.05144	5.4	0.00043	2.69	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.101	0.000
53	6.00	5.90	0.05447	5.1	0.00046	2.54	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.106	0.000
54	5.90	5.80	0.05750	4.9	0.00048	2.41	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.112	0.000
55	5.80	5.70	0.06053	4.6	0.00051	2.29	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.118	0.001
56	5.70	5.60	0.06357	4.4	0.00053	2.18	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.124	0.001
57	5.60	5.50	0.06660	4.2	0.00056	2.08	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.130	0.001
58	5.50	5.40	0.06963	4.0	0.00058	1.99	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.136	0.001
59	5.40	5.30	0.07266	3.9	0.00061	1.91	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.142	0.001
60	5.30	5.20	0.07569	3.7	0.00063	1.83	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.148	0.001
61	5.20	5.10	0.07872	3.6	0.00066	1.76	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.154	0.001
62	5.10	5.00	0.08175	3.4	0.00068	1.69	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.160	0.001
63	5.00	4.90	0.08478	3.3	0.00071	1.63	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.166	0.001
64	4.90	4.80	0.08781	3.2	0.00073	1.58	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.172	0.001
65	4.80	4.70	0.09084	3.1	0.00076	1.52	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.178	0.001
66	4.70	4.60	0.09388	3.0	0.00078	1.47	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.183	0.001
67	4.60	4.50	0.09691	2.9	0.00081	1.43	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.189	0.001
68	4.50	4.40	0.09994	2.8	0.00084	1.39	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.195	0.001
69	4.40	4.30	0.10297	2.7	0.00086	1.34	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.201	0.001
70	4.30	4.20	0.10600	2.6	0.00089	1.31	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.207	0.001

TOT								77.66						346870.50	220095.48									
AVG						0.0004				1.58	75.90					119.61								
CUM								642.05																

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

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
42	7.000	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
43	6.900	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
44	6.800	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
45	6.700	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
46	6.600	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
47	6.500	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
48	6.400	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
49	6.300	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
50	6.200	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
51	6.100	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
52	6.000	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
53	5.900	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
54	5.800	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
55	5.700	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
56	5.600	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
57	5.500	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
58	5.400	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
59	5.300	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
60	5.200	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
61	5.100	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
62	5.000	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
63	4.900	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
64	4.800	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
65	4.700	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
66	4.600	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
67	4.500	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
68	4.400	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
69	4.300	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
70	4.200	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.40	0.40	0.40	0.18	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
AVG 20 DEG C RATE			0.44	0.19	0.20	0.00	0.03	0.20	0.00	0.20			0.09	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
42	7.000	30.50	0.01	1.77	65.38	7.51	1.24	1.04	1.24	1.04	0.44	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
43	6.900	30.50	0.01	1.85	64.28	7.43	1.26	0.95	1.26	0.95	0.39	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
44	6.800	30.50	0.01	1.91	63.40	7.40	1.27	0.91	1.27	0.91	0.37	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
45	6.700	30.50	0.01	1.96	62.68	7.39	1.27	0.88	1.27	0.88	0.36	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
46	6.600	30.50	0.01	2.00	62.07	7.39	1.27	0.87	1.27	0.87	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
47	6.500	30.50	0.01	2.04	61.55	7.39	1.27	0.87	1.27	0.87	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
48	6.400	30.50	0.01	2.07	61.11	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

49	6.300	30.50	0.01	2.10	60.72	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
50	6.200	30.50	0.01	2.12	60.38	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
51	6.100	30.50	0.01	2.14	60.07	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
52	6.000	30.50	0.01	2.16	59.80	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
53	5.900	30.50	0.01	2.18	59.56	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
54	5.800	30.50	0.01	2.19	59.34	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
55	5.700	30.50	0.01	2.21	59.14	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
56	5.600	30.50	0.01	2.22	58.96	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
57	5.500	30.50	0.01	2.23	58.80	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
58	5.400	30.50	0.01	2.24	58.64	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
59	5.300	30.50	0.01	2.25	58.50	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
60	5.200	30.50	0.01	2.26	58.37	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
61	5.100	30.50	0.01	2.27	58.25	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
62	5.000	30.50	0.01	2.28	58.13	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
63	4.900	30.50	0.01	2.28	58.02	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
64	4.800	30.50	0.01	2.29	57.92	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
65	4.700	30.50	0.01	2.30	57.82	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
66	4.600	30.50	0.01	2.30	57.72	7.39	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
67	4.500	30.50	0.01	2.30	57.62	7.38	1.27	0.86	1.27	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
68	4.400	30.50	0.01	2.31	57.52	7.37	1.28	0.86	1.28	0.86	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
69	4.300	30.50	0.01	2.31	57.42	7.36	1.28	0.87	1.28	0.87	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
70	4.200	30.50	0.01	2.30	57.30	7.33	1.30	0.88	1.30	0.88	0.34	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

FINAL REPORT HEADWATER BIG CREEK WATERSHED MODEL
REACH NO. 3 BGC3 TO BGC4 BIG CREEK SUMMER NO LOAD RUN

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

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
71	UPR RCH	0.10600	30.50	0.01	2.30	57.30	7.33	1.30	0.88	1.30	0.88	0.34	0.00	0.00	0.00	10.00	0.00	0.00
EACH	INCR	0.00027	30.50	0.00	0.00	0.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m^3/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m^3	SURFACE AREA m^2	X-SECT AREA m^2	TIDAL PRISM m^3	TIDAL VELO m/s	DISPRSN m^2/s	MEAN VELO m/s
71	4.20	4.10	0.10627	2.6	0.00088	1.32	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.185	0.001
72	4.10	4.00	0.10654	2.6	0.00088	1.32	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.186	0.001
73	4.00	3.90	0.10681	2.6	0.00088	1.31	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.186	0.001
74	3.90	3.80	0.10708	2.6	0.00088	1.31	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.187	0.001
75	3.80	3.70	0.10735	2.6	0.00089	1.31	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.187	0.001
76	3.70	3.60	0.10762	2.6	0.00089	1.30	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.187	0.001
77	3.60	3.50	0.10789	2.6	0.00089	1.30	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.188	0.001
78	3.50	3.40	0.10816	2.6	0.00089	1.30	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.188	0.001
79	3.40	3.30	0.10843	2.6	0.00089	1.29	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.189	0.001
80	3.30	3.20	0.10870	2.6	0.00090	1.29	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.189	0.001
81	3.20	3.10	0.10897	2.6	0.00090	1.29	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.190	0.001
82	3.10	3.00	0.10924	2.6	0.00090	1.28	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.190	0.001
83	3.00	2.90	0.10951	2.6	0.00090	1.28	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.191	0.001
84	2.90	2.80	0.10978	2.6	0.00091	1.28	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.191	0.001
85	2.80	2.70	0.11005	2.5	0.00091	1.28	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.192	0.001

86	2.70	2.60	0.11032	2.5	0.00091	1.27	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.192	0.001
87	2.60	2.50	0.11059	2.5	0.00091	1.27	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.193	0.001
88	2.50	2.40	0.11086	2.5	0.00091	1.27	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.193	0.001
89	2.40	2.30	0.11113	2.5	0.00092	1.26	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.194	0.001
90	2.30	2.20	0.11140	2.5	0.00092	1.26	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.194	0.001
TOT						25.80			242535.39	173735.97					
AVG					0.0009		1.40	86.87			121.27				
CUM						667.85									

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

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
71	4.100	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
72	4.000	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
73	3.900	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
74	3.800	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
75	3.700	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
76	3.600	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
77	3.500	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
78	3.400	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
79	3.300	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
80	3.200	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
81	3.100	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
82	3.000	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
83	2.900	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
84	2.800	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
85	2.700	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
86	2.600	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
87	2.500	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
88	2.400	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
89	2.300	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
90	2.200	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	0.72	0.72	0.72	0.23	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
AVG 20 DEG C RATE			0.50	0.17	0.20	0.00	0.03	0.20	0.00	0.37			0.12	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
71	4.100	30.50	0.01	2.30	57.16	7.28	1.33	0.90	1.33	0.90	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
72	4.000	30.50	0.01	2.29	57.02	7.24	1.35	0.92	1.35	0.92	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
73	3.900	30.50	0.01	2.29	56.88	7.21	1.37	0.93	1.37	0.93	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
74	3.800	30.50	0.01	2.28	56.73	7.19	1.38	0.94	1.38	0.94	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
75	3.700	30.50	0.01	2.28	56.59	7.18	1.39	0.95	1.39	0.95	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
76	3.600	30.50	0.01	2.27	56.45	7.16	1.39	0.96	1.39	0.96	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
77	3.500	30.50	0.01	2.26	56.31	7.16	1.40	0.96	1.40	0.96	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
78	3.400	30.50	0.01	2.26	56.17	7.15	1.40	0.97	1.40	0.97	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
79	3.300	30.50	0.01	2.25	56.03	7.15	1.40	0.97	1.40	0.97	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
80	3.200	30.50	0.01	2.25	55.90	7.14	1.40	0.97	1.40	0.97	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

81	3.100	30.50	0.01	2.24	55.76	7.14	1.40	0.97	1.40	0.97	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
82	3.000	30.50	0.01	2.24	55.63	7.14	1.40	0.97	1.40	0.97	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
83	2.900	30.50	0.01	2.23	55.50	7.14	1.40	0.98	1.40	0.98	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
84	2.800	30.50	0.01	2.23	55.37	7.14	1.40	0.98	1.40	0.98	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
85	2.700	30.50	0.01	2.22	55.25	7.14	1.40	0.98	1.40	0.98	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
86	2.600	30.50	0.01	2.22	55.13	7.14	1.40	0.98	1.40	0.98	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
87	2.500	30.50	0.01	2.21	55.03	7.13	1.40	0.98	1.40	0.98	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
88	2.400	30.50	0.01	2.21	54.94	7.13	1.40	0.98	1.40	0.98	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
89	2.300	30.50	0.01	2.21	54.86	7.13	1.40	0.98	1.40	0.98	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
90	2.200	30.50	0.01	2.20	54.82	7.13	1.40	0.98	1.40	0.98	0.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

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STREAM SUMMARY                                          BIG CREEK WATERSHED MODEL
HEADWATER                                               BIG CREEK SUMMER NO LOAD RUN

 TRAVEL TIME       =         667.85 DAYS

 MAXIMUM EFFLUENT  =          16.59 PERCENT

 FLOW              =   0.00310 TO    0.11140   m³/s
 DISPERSION        =   0.0078  TO    0.2071    m²/s
 VELOCITY          =   0.00003 TO    0.00092   m/s
 DEPTH             =   1.40    TO    1.58      m
 WIDTH             =  59.44    TO   86.87      m

 BOD DECAY         =    0.27   TO    0.31      per day
 NH3 DECAY         =    0.00   TO    0.00      per day
 SOD               =    0.10   TO    0.72      g/m²/d
 NH3 SOURCE        =    0.00   TO    0.00      g/m²/d
 REAERATION        =    0.54   TO    0.61      per day
 BOD SETTLING      =    0.26   TO    0.26      per day
 NBOD DECAY        =    0.17   TO    0.23      per day
 NBOD SETTLING     =    0.13   TO    0.13      per day

 TEMPERATURE       =   30.50   TO   30.50      deg C
 DISSOLVED OXYGEN  =    7.13   TO    7.85      mg/L


     .....EXECUTION COMPLETED
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Appendix D6 - Summer No-Man Made Load Justifications

Big Creek 101506 Summer Projection for No Man-Made Justification

DATA TYPE 3 - PROGRAM CONSTANTS			
CONSTANT NAME	**VALUE**	**UNITS**	**DATA SOURCE**
KL MINIMUM	0.7	m/day	The minimum KL of 2.3 ft/day converted to 0.70 m/day.
INHIBITION CONTROL VALUE	3		The water column dissolved oxygen demand is assumed to come primarily from facultative bacteria under anoxic conditions and SOD is not influenced by modeled dissolved oxygen levels in the upper water column.
K2 MAXIMUM	25	1/day at 20 deg C	EPA Policy in the absence of a measured value.
HYDRAULIC CALCULATION METHOD	2		The low slopes in this waterbody cause a substantial amount of water to be present during critical flow conditions. This method allows the model to predict a more accurate depth and width during low flow conditions.
SETTLING RATE UNITS	2		By making the settling rate a velocity the rate becomes dependent upon the depth.
ALGAE OXYGEN PRODUCTION	0		Standard practice for steady state calibration to a wide variation in DO.
DISPERSION EQUATION	3		Equation used to account for advective flows.
OCEAN EXCHANGE RATIO	0		This was done to allow dispersion in the model but not to force the bottom element through the boundary conditions.

Big Creek 101506 Summer Projection For No in Man-Made Justification

DATA TYPE 8 - REACH IDENTIFICATION DATA						
Reach	**ID**	**Name**	**Upstream River Kilometer**	**Downstream River Kilometer**	**Element Length, meters**	**Data Source**
1	BGC	BGC01 to BGC02	11.20	7.10	100.0000	ARC MAP Calc.
2	BGC	BGC02 to BGC03	7.10	4.20	100.0000	ARC MAP Calc.
3	BGC	BGC03 to BGC04	4.20	2.20	100.0000	ARC MAP Calc.

Big Creek 101506 Summer Projection For No in Man-Made Justification									
		DATA TYPE 9 - ADVECTIVE HYDRAULIC COEFFICIENTS							
Reach	Name	Width Coeff. "a"	Width Exp. "b"	Width Const. "c"	Data Source	Depth Coeff. "d"	Depth Exp. "e"	Depth Const. "f"	Data Source
1	BGC01 to BGC02	0	0	59.436	BGC02	0	0	1.527	BGC02
2	BGC02 to BGC03	0	0	75.895	BGC03	0	0	1.576	BGC03
3	BGC03 to BGC04	0	0	86.868	BGC04	0	0	1.396	BGC04

Big Creek 101506 Summer Projection for No in Man-Made Justification						
DATA TYPE 10 - DISPERSIVE HYDRAULIC COEFFICIENTS						
Reach	a	Data Source	b	c	d	Data Source
1	160	Calibration	0.8333	0.0	1.0	Constant values used for advective dispersion
2	160	Calibration	0.8333	0.0	1.0	Constant values used for advective dispersion
3	160	Calibration	0.8333	0.0	1.0	Constant values used for advective dispersion

Big Creek 101506 Summer Projection For No in Man-Made Justification								
DATA TYPE 11-INITIAL CONDITIONS								
Reach	Name	Temp, deg C	Sal, ppt	DO, mg/l	Data Source	Chlorophyll a	Macrophytes	Data Source
1	BGC01 to BGC02	30.50	0.01	5.00	Temp - 90th Percentile Summer Temperature for WQM Site 1227, Salinity - Avg(BGC01,BGC02) Continuous Monitoring, DO - DO standard for Subsegment 120505	10.00	10.00	Best Professional Judgement
2	BGC02 to BGC03	30.50	0.01	5.00	Temp - 90th Percentile Summer Temperature for WQM Site 1227, Salinity - Avg(BGC02,BGC03) Continuous Monitoring, DO - DO standard for Subsegment 120505	10.00	10.00	Best Professional Judgement
3	BGC03 to BGC04	30.50	0.01	5.00	Temp - 90th Percentile Summer Temperature for WQM Site 1227, Salinity - Avg(BGC03,BGC04) Continuous Monitoring, DO - DO standard for Subsegment 120505	10.00	10.00	Best Professional Judgement

Big Creek 101506 Summer Projection For No in Man-Made Justification

		DATA TYPE 12 - REAERATION, SEDIMENT OXYGEN DEMAND AND BOD COEFFICIENTS				DATA TYPE 12 - REAERATION, SEDIMENT OXYGEN DEMAND AND BOD COEFFICIENTS							
REACH	NAME	K2 OPT	Data Source	BKGRND SOD, gmO2/m2/day at 20 deg C	Data Source	Aerobic BOD1 Dec Rate (1/day)	Data Source	BOD1 SETT RATE (1/day)	Data Source	Aerobic BOD2 Dec Rate (1/day)	Data Source	BOD2 SETT RATE (1/day)	Data Source
1	BGC01 to BGC02	11	Texas Equation	0.052	No Man-Made Loading	0.1806	Average (BGC01,BGC02)	0.2	Calibration	0.0344	Average (BGC01,BGC02)	0.2	Calibration
2	BGC02 to BGC03	11	Texas Equation	0.204	No Man-Made Loading	0.1915	Average (BGC02,BGC03)	0.2	Calibration	0.0306	Average (BGC02,BGC03)	0.2	Calibration
3	BGC03 to BGC04	11	Texas Equation	0.370	No Man-Made Loading	0.1666	Average (BGC03,BGC04)	0.2	Calibration	0.0283	Average (BGC03,BGC04)	0.2	Calibration

Big Creek 101506 Summer Projection For No in Man-Made Justification

DATA TYPE 13 - NITROGEN AND PHOSPHORUS COEFFICIENTS

Reach	Name	NBOD decay rate, 1/day	Data Source	NBOD settling rate, 1/day	Data Source
1	BGC01 to BGC02	0.0868	Average (BGC01,BGC02)	0.10	Calibration
2	BGC02 to BGC03	0.0886	Average (BGC02,BGC03)	0.10	Calibration
3	BGC03 to BGC04	0.1173	Average (BGC03,BGC04)	0.10	Calibration

Big Creek 101506 Summer Projection For No in Man-Made Justification										
DATA TYPES 16 - INCREMENTAL DATA FOR TEMP AND CONS										
Reach	Reach Name	Incr. Inflow, m3	Data Source	Temp	Data Source	Salinity ppt	Data Source	Chl	Cond	Data Source
1	BGC1 to BGC2	0.0125	BGC2 Minimal Flow - (BGC1 Minimal Flow + Cainey Bayou)	30.50	Temp - 90th Percentile Temperature for WQM Site 1227 Summer Season	0.01	Average(BGC01,BGC02)		80.0	Calibration
2	BGC2 to BGC3	0.0879	BGC3 - BGC2 Minimal Flow	30.50	Temp - 90th Percentile Temperature for WQM Site 1227 Summer Season	0.01	Average(BGC02,BGC03)	2.5	55.0	Calibration
3	BGC3 to BGC4	0.0054	BGC4 - BGC3 Minimal Flow	30.50	Temp - 90th Percentile Temperature for WQM Site 1227 Summer Season	0.01	Average(BGC03,BGC04)			Calibration

Big Creek 101506 Summer Projection For No in Man-Made Justification			
DATA TYPES 17 - INCREMENTAL DATA FOR DO, BOD, AND NITROGEN			
Reach	Reach Name	DO, mg/l	Data Source
1	BDL1 to BDL2	2.0	Normal Groundwater DO
2	BDL2 to BDL3	2.0	Normal Groundwater DO
3	BDL3 to BDL4	2.0	Normal Groundwater DO

Big Creek 101506 Summer Projection For No in Man-Made Justification

DATA TYPE 19 - NONPOINT SOURCES

Reach	Reach Name	Length of Reach, km	UCBOD1, kg/day	UCBOD2, kg/day	NBOD, kg/day	Data Source
1	BGC01 to BGC02	4.10	240.840	163.427	70.532	No Man-Made Loading
2	BGC02 to BGC03	2.90	259.295	97.432	38.501	No Man-Made Loading
3	BGC03 to BGC04	2.00	179.923	72.322	30.869	No Man-Made Loading

Big Creek 101506 Summer Projection For No in Man-Made Justification

DATA TYPES 20 - HEADWATER DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES

Headwater Name	Element No.	Logical Unit Number	Headwater Flow, cms	Temp, deg C	Salinity	Chlorides	Conductivity	Data Source
Headwater 1	1	1	0.0028	30.5	0.01	4.4	52.70	BGC01 = LTP Summer Projection Default, Temp - 90th Percentile Summer Temp for WQN 1227, Salinity and Conductivity - BGC01 Insitu, Chlorides - BGC01 Lab Data

Big Creek 101506 Summer Projection For No in Man-Made Justification

DATA TYPES 21 - HEADWATER DATA FOR DO, BOD, AND NITROGEN

Headwater Name	Dissolved Oxygen, mg/L	UCBOD1, mg/l	UCBOD2, mg/l	NBOD, mg/l	Data Source
Headwater 1	6.74	4.93	0	0.98	DO - 90% DO Sat for WQN Site 1227 UCBOD1, UCBOD2, AND NBOD - No Man-Made Loading

Big Creek 101506 Summer Projection For No in Man-Made Justification

DATA TYPES 22 - HEADWATER DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES

Headwater Name	Chlorophyll a, ug/L	Date Source			
Headwater 1	10	Best Professional Judgement			

Big Creek 101506 Summer Projection For No in Man-Made Justification

	DATA TYPES 24 - WASTELOAD DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES								
Wasteload / Withdrawal Name	EL #	Flow, cms	Temperature, deg C	Data Source	Chlorides	Data Source	Salinity	Conductivity	Data Source
Cainey Bayou	37	0.0028	30.50	Flow - LTP Summer Default Temp - 90th Percentile Temp for WQN Site 1227 Summer Season	3.7	CAB01 Lab Data	0.01	51.5	CAB01 Insitu - Conductivity and Salinity

Big Creek 101506 Summer Projection For No in Man-Made Justification

DATA TYPES 25 - WASTELOAD DATA FOR DO, BOD, AND NITROGEN

Wasteload / Withdrawal Name	EL #	DO, mg/l	Data Source	UCBOD1, mg/l	UCBOD2, mg/l	UNBOD, mg/l	Data Source
Cainey Bayou	37	5.00	DO Standard for Subsegment 101506 Summer Season	4.83	0	1.05	No Man-Made Loading

Big Creek 101506 Summer Projection For No in Man-Made Justification

DATA TYPES 27 - LOWER BOUNDARY CONDITIONS

Parameter	Value	Units	Data Source
TEMPERATURE	30.50	^{O}C	90th Percentile Temperature for WQN Site 1227 Summer Season
SALINITY	0.01	ppt	BGC05 Continuous Monitoring
CHLORIDES	2.8	ppm	BGC05 Lab Data
CONDUCTIVITY	47.70	umhos/cm	BGC05 Insitu
DISSOLVED OXYGEN	5.00	mg/L	DO Standard for 101506 Summer Season
CBOD1	7.8370	mg/L	BGC05 Lab Data
CBOD2	5.0311	mg/L	BGC05 Lab Data
CHLOROPHYLL A	10.0	ug/L	Seasonal Projection Standard
NBOD	2.4180	mg/L	BGC05 Lab Data

Appendix E - Projection Model Development

Appendix E1 – Summer Loading

FINAL REPORT
Big Creek Watershed TMDL
Subsegment 101506
Originated: February 1, 2007
Revised: January 18, 2008

Summer Projection, Non-Point Benthic Load Input and TMDL Calculations:

Modeled stream or water body: **BIG CREEK (SUBSEGMENT 101506)**

Shaded cells are input values for calculations. MARGIN OF SAFETY (MOS) (%) = [MOG + MOU] = **20%**
Values to be used in the projection models.

	Calibration Model Values																		Reduced Man-Made Loads					Projected Model Loads							
Reach Number and Description	Non-Point UCBOD1	Non-Point UCBOD2	Total Non-Point UNBOD	SOD @ 20°C	Total Calb. Benthic Load (TCBL)	Reach Length	Proj. Model Avg. Reach Width	Proj. Temp.	Background Benthic Load	Effective Background Benthic Load	Man-Made Benthic Load	Effective Background Benthic Phosphorus	Man-Made Benthic Phosphorus	Background percentage reduction	Percentage Reduction of man-made sources	Reduced Background Benthic Load	Reduced Man-Made Benthic Load	Reduced TCBL adjusted for MOS	Reduced UCBOD1 Load	Reduced UCBOD2 Load	Reduced UNBOD Load	Reduced SOD Load at Projection Temp.	SOD @ 20°C	Non-Point UCBOD1 INPUTS	Non-Point UCBOD2 INPUTS	Non-Point UNBOD INPUTS	**Total MOS at Projection Temp.**	**Non-Point UCBOD1 LA**	**Non-Point UCBOD2 LA**	**Non-Point UNBOD LA**	**SOD LA at Projection Temp.**
	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	Kilo-meters	Meters	(deg Celcius)	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g / [(m2)(day)]	g / [(m2)(day)]	%	%	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	g O_2 / [(m^2)(day)]	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day
BGC01 - BGC02	5.745	3.898	1.682	0.30	11.626	4.10	59.44	30.50	2.00	2.00	9.63	0.00	0.00	0%	80%	2.00	1.93	4.41	231.83	157.31	67.89	23.45	0.114	530.630	360.070	155.399	120.12	472.67	320.74	138.43	47.81
BGC02 - BGC03	7.497	2.817	1.113	1.30	12.727	2.90	75.90	30.50	2.00	2.00	10.73	0.00	0.00	0%	80%	2.00	2.15	4.68	278.14	104.51	41.30	93.43	0.478	606.971	228.074	90.126	129.35	537.44	201.95	79.80	180.54
BGC03 - BGC04	5.871	2.360	1.007	2.10	11.338	2.00	86.87	30.50	2.00	2.00	9.34	0.00	0.00	0%	80%	2.00	1.87	4.33	168.02	67.54	28.83	116.42	0.803	389.943	156.742	66.902	95.20	347.94	139.86	59.70	241.09
Sub-Total										6.00	29.69	0.00	0.00			6.00	5.94	13.42	677.99	329.36	138.02	233.31		1527.54	744.89	312.43	344.67	**1358.05**	**662.55**	**277.92**	**469.44**

Summer TMDL calculations and Projection model calculations for Headwater / Tributary loads:

BIG CREEK (SUBSEGMENT 101506)

Shaded cells are input values for calculations. MARGIN OF SAFETY (MOS) (%) = **20%**
Values to be used in the projection models. If modeling the nitrogen series, be sure that columns "H" & "R" are c

Headwater / Tributary Load Determinations

	FROM CALIBRATION						BACKGROUND VALUES							Reduced Background Loads			Reduced Man-Made Loads			PROJECTION VALUES						
Headwater / Tributary Description and Reach #	Seasonal Critical flow (cms)	UCBOD1 (mg O_2/L)	UCBOD2 (mg O_2/L)	Total UCBOD (mg O_2/L)	UNBOD (mg O_2/L)	Total UNBOD (mg O_2/L)	Background UCBOD1 conc. (mg O_2/L)	Background UCBOD2 conc. (mg O_2/L)	Background UCBOD conc. (mg O_2/L)	Background UNBOD conc. (mg O_2/L)	Background UNBOD conc. (mg O_2/L)	Background % Reduction	Percent reduction of Man-Made loads	Reduced Background UCBOD1 load (kg O_2/day)	Reduced Background UCBOD2 load (kg O_2/day)	Reduced Background UNBOD load (kg O_2/day)	Reduced UCBOD1 load (kg O_2/day)	Reduced UCBOD2 load (kg O_2/day)	Reduced UNBOD load (kg O_2/day)	Projection UCBOD1 input conc. (mg O_2/L)	Projection UCBOD2 input conc. (mg O_2/L)	Projection UNBOD input conc. (mg O_2/L)	**Total MOS (kg O_2/day)**	**Total CBOD1 LA (kg O_2/day)**	**Total CBOD2 LA (kg O_2/day)**	**Total NBOD LA (kg O_2/day)**
Headwater	0.00280	9.78	5.83	15.61	3.13	3.13	4.90	0.00	4.90	0.98	0.98	0%	80%	1.19	0.00	0.24	0.24	0.28	0.10	6.12	1.46	1.52	**0.16**	**1.42**	**0.28**	**0.34**
Cainey Bayou	0.00280	9.32	6.10	15.43	3.35	3.35	4.83	0.00	4.83	1.05	1.05	0%	80%	1.17	0.00	0.25	0.22	0.30	0.11	5.96	1.53	1.63	**0.16**	**1.39**	**0.30**	**0.37**
SUB-TOTAL TMDL LOADING														**2.36**	**0.00**	**0.49**	**0.45**	**0.58**	**0.22**				**0.31**	**2.81**	**0.58**	**0.71**

Appendix E2 – Winter Loading

Winter Projection, Non-Point Benthic Load Input and TMDL Calculations:

Modeled stream or water body: **BIG CREEK (SUBSEGMENT 101506)**

Shaded cells are input values for calculations. ARGIN OF SAFETY (MOS) (%) = [MOG + MOU] = **20%**
Values to be used in the projection models.

	Calibration Model Values																Reduced Man-Made Loads					Projected Model Loads							
Reach Number and Description	Non-Point UCBOD1	Non-Point UCBOD2	Total Non-Point UNBOD	SOD @ 20°C	Total Calb. Benthic Load (TCBL)	Reach Length	Proj. Model Avg. Reach Width	Proj. Temp.	Background Benthic Load	Effective Background Benthic Load	Man-Made Benthic Load	Background percentage reduction	Percentage Reduction of man-made sources	Reduced Background Benthic Load	Reduced Man-Made Benthic Load	Reduced TCBL adjusted for MOS	Reduced UCBOD1 Load	Reduced UCBOD2 Load	Reduced UNBOD Load	Reduced SOD Load at Projection Temp.	SOD @ 20°C	Non-Point UCBOD1 INPUTS	Non-Point UCBOD2 INPUTS	Non-Point UNBOD INPUTS	**Total MOS at Projection Temp.**	**Non-Point UCBOD1 LA**	**Non-Point UCBOD2 LA**	**Non-Point UNBOD LA**	**SOD LA at Projection Temp.**
	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	Kilo-meters	Meters	(deg Celcius)	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	%	%	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	g O_2 / [(m^2)(day)]	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day
BGC01 - BGC02	5.745	3.898	1.682	0.30	11.626	4.10	59.44	23.14	2.00	2.00	9.63	0%	80%	2.00	1.93	4.41	231.83	157.31	67.89	14.75	0.114	530.630	360.070	155.399	117.95	472.67	320.74	138.43	30.08
BGC02 - BGC03	7.497	2.817	1.113	1.30	12.727	2.90	75.90	23.14	2.00	2.00	10.73	0%	80%	2.00	2.15	4.68	278.14	104.51	41.30	58.78	0.478	606.971	228.074	90.126	120.68	537.44	201.95	79.80	113.57
BGC03 - BGC04	5.871	2.360	1.007	2.10	11.338	2.00	86.87	23.14	2.00	2.00	9.34	0%	80%	2.00	1.87	4.33	168.02	67.54	28.83	73.24	0.803	389.943	156.742	66.902	84.40	347.94	139.86	59.70	151.67
Sub-Total										6.00	29.69			6.00	5.94	13.42	677.99	329.36	138.02	146.77		1527.54	744.89	312.43	323.04	**1358.05**	**662.55**	**277.92**	**295.32**

Winter TMDL calculations and Projection model calculations for Headwater / Tributary loads:

BIG CREEK (SUBSEGMENT 101506)

Shaded cells are input values for calculations. MARGIN OF SAFETY (MOS) (%) =
Values to be used in the projection models. If modeling the nitrogen series, be sure that (

Headwater / Tributary Load Determinations

	FROM CALIBRATION					BACKGROUND VALUES						Reduced Background Loads			Reduced Man-Made Loads			PROJECTION VALUES						
Headwater / Tributary Description and Reach #	Seasonal Critical flow (cms)	UCBOD1 (mg O_2/L)	UCBOD2 (mg O_2/L)	UNBOD (mg O_2/L)	Total UNBOD (mg O_2/L)	Background UCBOD1 conc. (mg O_2/L)	Background UCBOD2 conc. (mg O_2/L)	Background UNBOD conc. (mg O_2/L)	Background UNBOD conc. (mg O_2/L)	Background % Reduction	Percent reduction of Man-Made loads	Reduced Background UCBOD1 load (kg O_2/day)	Reduced Background UCBOD2 load (kg O_2/day)	Reduced Background UNBOD load (kg O_2/day)	Reduced UCBOD1 load (kg O_2/day)	Reduced UCBOD2 load (kg O_2/day)	Reduced UNBOD load (kg O_2/day)	Projection UCBOD1 input conc. (mg O_2/L)	Projection UCBOD2 input conc. (mg O_2/L)	Projection UNBOD input conc. (mg O_2/L)	**Total MOS (kg O_2/day)**	**Total CBOD1 LA (kg O_2/day)**	**Total CBOD2 LA (kg O_2/day)**	**Total NBOD LA (kg O_2/day)**
Headwater	0.02800	9.78	5.83	3.13	3.13	4.90	0.00	0.98	0.98	0%	80%	11.86	0.00	2.38	2.36	2.82	1.04	6.12	1.46	1.52	**1.56**	**14.22**	**2.82**	**3.41**
Cainey Bayou	0.02800	9.32	6.10	3.35	3.35	4.83	0.00	1.05	1.05	0%	80%	11.69	0.00	2.54	2.17	2.95	1.11	5.96	1.53	1.63	**1.56**	**13.86**	**2.95**	**3.65**
SUB-TOTAL TMDL LOADING												**23.55**	**0.00**	**4.92**	**5**	**6**	**2.15**				**3.11**	**28.08**	**5.77**	**7.07**

Appendix E3 – Summer No Man-Made Loading

Summer No Man-Made Loading Projection, Non-Point Benthic Load Input and TMDL Calculations:

Modeled stream or water body: **BIG CREEK (SUBSEGMENT 101506)**

Shaded cells are input values for calculations. MARGIN OF SAFETY (MOS) (%) = [MOG + MOU] = **20%**
Values to be used in the projection models.

	Calibration Model Values																Reduced Man-Made Loads					Projected Model Loads							
Reach Number and Description	Non-Point UCBOD1	Non-Point UCBOD2	Total Non-Point UNBOD	SOD @ 20°C	Total Calb. Benthic Load (TCBL)	Reach Length	Proj. Model Avg. Reach Width	Proj. Temp.	Background Benthic Load	Effective Background Benthic Load	Man-Made Benthic Load	Background percentage reduction	Percentage Reduction of man-made sources	Reduced Background Benthic Load	Reduced Man-Made Benthic Load	Reduced TCBL adjusted for MOS	Reduced UCBOD1 Load	Reduced UCBOD2 Load	Reduced UNBOD Load	Reduced SOD Load at Projection Temp.	SOD @ 20°C	Non-Point UCBOD1 INPUTS	Non-Point UCBOD2 INPUTS	Non-Point UNBOD INPUTS	**Total MOS at Projection Temp.**	**Non-Point UCBOD1 LA**	**Non-Point UCBOD2 LA**	**Non-Point UNBOD LA**	**SOD LA at Projection Temp.**
	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	Kilo-meters	Meters	(deg Celcius)	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	%	%	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	g O_2 / [(m^2)(day)]	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	g O_2 / [(m^2)(day)]	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day	kg O_2/day
BGC01 - BGC02	5.745	3.898	1.682	0.30	11.626	4.10	59.44	30.50	2.00	2.00	9.63	0%	100%	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.052	240.840	163.427	70.532	0.00	240.84	163.43	70.53	24.36
BGC02 - BGC03	7.497	2.817	1.113	1.30	12.727	2.90	75.90	30.50	2.00	2.00	10.73	0%	100%	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.204	259.295	97.432	38.501	0.00	259.29	97.43	38.50	87.10
BGC03 - BGC04	5.871	2.360	1.007	2.10	11.338	2.00	86.87	30.50	2.00	2.00	9.34	0%	100%	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.370	179.923	72.322	30.869	0.00	179.92	72.32	30.87	124.67
Sub-Total										6.00	29.69			6.00	0.00	6.00	0.00	0.00	0.00	0.00		680.06	333.18	139.90	0.00	**680.06**	**333.18**	**139.90**	**236.14**

Summer No Man-Made Loading TMDL calculations and Projection model calculations for Headwater / Tributary loads:

BIG CREEK (SUBSEGMENT 101506)

Shaded cells are input values for calculations. MARGIN OF SAFETY (MOS) (%) =
Values to be used in the projection models. If modeling the nitrogen series, be sure that c

Headwater / Tributary Load Determinations

	FROM CALIBRATION					BACKGROUND VALUES						Reduced Background Loads			Reduced Man-Made Loads			PROJECTION VALUES						
Headwater / Tributary Description and Reach #	Seasonal Critical flow (cms)	UCBOD1 (mg O_2/L)	UCBOD2 (mg O_2/L)	UNBOD (mg O_2/L)	Total UNBOD (mg O_2/L)	Background UCBOD1 conc. (mg O_2/L)	Background UCBOD2 conc. (mg O_2/L)	Background UNBOD conc. (mg O_2/L)	Background UNBOD conc. (mg O_2/L)	Background % Reduction	Percent reduction of Man-Made loads	Reduced Background UCBOD1 load (kg O_2/day)	Reduced Background UCBOD2 load (kg O_2/day)	Reduced Background UNBOD load (kg O_2/day)	Reduced UCBOD1 load (kg O_2/day)	Reduced UCBOD2 load (kg O_2/day)	Reduced UNBOD load (kg O_2/day)	Projection UCBOD1 input conc. (mg O_2/L)	Projection UCBOD2 input conc. (mg O_2/L)	Projection UNBOD input conc. (mg O_2/L)	**Total MOS (kg O_2/day)**	**Total CBOD1 LA (kg O_2/day)**	**Total CBOD2 LA (kg O_2/day)**	**Total NBOD LA (kg O_2/day)**
Headwater	0.00280	9.78	5.83	3.13	3.13	4.90	0.00	0.98	0.98	0%	100%	1.19	0.00	0.24	0.00	0.00	0.00	4.90	0.00	0.98	**0.00**	**1.19**	**0.00**	**0.24**
Cainey Bayou	0.00280	9.32	6.10	3.35	3.35	4.83	0.00	1.05	1.05	0%	100%	1.17	0.00	0.25	0.00	0.00	0.00	4.83	0.00	1.05	**0.00**	**1.17**	**0.00**	**0.25**
SUB-TOTAL TMDL LOADING												**2.36**	**0.00**	**0.49**	**0**	**0**	**0.00**				**0.00**	**2.36**	**0.00**	**0.49**

Appendix F – Survey Data Measurements and Analysis Results

Appendix F1 – Water Quality Data

Big Creek 101506 Lab Data Summary

Site	Date Sample Taken	Time Sample Taken	TSS	TDS	Alkalinity	Turbidity	Specific Conductance	True Color	Chloride by IC	Sulfate	Sodium	Hardness	Nitrate+Nitrite Nitrogen	TP	TKN	Ammonia-Nitrogen	TOC	pH, Ultimate BOD survey	Chlorophyll A (Calculated)
BGC01	6/7/2006	9:00 AM	11.0	70.7	20.1	19	62.0	110	4.4	2.1	5.0	20.8	ND	0.12	1.15	ND	15.2	6.58	16.5
BGC02	6/7/2006	9:50 AM	15.5	67.3	20.7	10	59.0	90	3.8	1.9	4.3	22.5	ND	0.16	1.19	ND	14.7	6.68	14.1
BGC03	6/7/2006	10:00 AM	8.0	62.0	17.1	6.3	53.9	100	3.6	1.7	3.9	19.9	ND	0.14	1.06	ND	13.7	6.77	25.5
BGC04	6/7/2006	9:30 AM	9.0	57.3	16.5	5.9	52.4	65	3.3	1.7	3.8	19.8	ND	0.13	1.07	ND	13.2	6.76	50.7
BGC05	6/7/2006	8:40 AM	7.5	56.7	14.4	4.9	48.0	80	2.8	1.7	3.6	17.7	ND	0.11	1.07	ND	12.9	6.62	49.1
CAB01	6/7/2006	10:15 AM	22.0	64.7	20.7	8.6	57.3	110	3.7	1.6	4.2	21.8	ND	0.16	1.21	ND	14.5	6.71	

Big Creek 101506 Water Quality Lab Data

Site	Lab_ID	Type	Analysis_Name	Result	Units	Set Up	Read	Nitrates Sampled	Collect Date	Collect Time
BGC01	AJ17240	TRG	TSS	11.0	ppm	6/8/2006	6/9/2006		6/7/2006	9:00
BGC01	AJ17240	TRG	TDS	70.7	ppm	6/8/2006	6/9/2006		6/7/2006	9:00
BGC01	AJ17240	TRG	Alkalinity	20.1	ppm	6/12/2006	6/12/2006		6/7/2006	9:00
BGC01	AJ17240	TRG	Turbidity	19	NTU	6/8/2006	6/8/2006		6/7/2006	9:00
BGC01	AJ17240	TRG	Specific Conductance	62.0	umhos/cm	6/12/2006	6/12/2006		6/7/2006	9:00
BGC01	AJ17240	TRG	True Color	110	PCU	6/8/2006	6/8/2006		6/7/2006	9:00
BGC01	AJ17240	TRG	Chloride by IC	4.4	ppm	6/15/2006	6/15/2006		6/7/2006	9:00
BGC01	AJ17240	TRG	Sulfate	2.1	ppm	6/15/2006	6/15/2006		6/7/2006	9:00
BGC01	AJ17241	TRG	Sodium	5.0	ppm	7/14/2006	7/14/2006		6/7/2006	9:00
BGC01	AJ17242	TRG	Hardness	20.8	ppm	6/21/2006	6/21/2006		6/7/2006	9:00
BGC01	AJ17242	TRG	Nitrate+Nitrite Nitrogen	ND	ppm	6/22/2006	6/22/2006		6/7/2006	9:00
BGC01	AJ17242	TRG	TP	0.12	ppm	6/20/2006	6/20/2006		6/7/2006	9:00
BGC01	AJ17242	TRG	TKN	1.15	ppm	6/20/2006	6/20/2006		6/7/2006	9:00
BGC01	AJ17242	TRG	Ammonia-Nitrogen	ND	ppm	6/15/2006	6/15/2006		6/7/2006	9:00
BGC01	AJ17243	TRG	TOC	15.2	ppm	6/12/2006	6/12/2006		6/7/2006	9:00
BGC01	AJ17244	TRG	pH, Ultimate BOD survey	6.58	pH units	8/7/2006	8/7/2006		6/7/2006	9:00
BGC01	AJ17244	TRG	TOC (60 Day BOD)	11.7	ppm	8/16/2006	8/16/2006		6/7/2006	9:00
BGC01	AJ17244	TRG	TKN (60 Day BOD)	0.67	ppm	8/18/2006	8/18/2006		6/7/2006	9:00
BGC01	AJ17244	TRG	NO2NO3 - Initial Reading	ND	ppm	6/15/2006	6/15/2006	6/8/2006	6/7/2006	9:00
BGC01	AJ17244	TRG	NO2NO3 - Reading 1	ND	ppm	6/15/2006	6/15/2006	6/9/2006	6/7/2006	9:00
BGC01	AJ17244	TRG	NO2NO3 - Reading 2	ND	ppm	6/15/2006	6/15/2006	6/12/2006	6/7/2006	9:00
BGC01	AJ17244	TRG	NO2NO3 - Reading 3	ND	ppm	6/15/2006	6/15/2006	6/14/2006	6/7/2006	9:00
BGC01	AJ17244	TRG	NO2NO3 - Reading 4	ND	ppm	7/7/2006	7/7/2006	6/16/2006	6/7/2006	9:00
BGC01	AJ17244	TRG	NO2NO3 - Reading 5	ND	ppm	7/7/2006	7/7/2006	6/19/2006	6/7/2006	9:00
BGC01	AJ17244	TRG	NO2NO3 - Reading 6	0.06	ppm	7/7/2006	7/7/2006	6/23/2006	6/7/2006	9:00
BGC01	AJ17244	TRG	NO2NO3 - Reading 7	0.31	ppm	7/7/2006	7/7/2006	6/28/2006	6/7/2006	9:00
BGC01	AJ17244	TRG	NO2NO3 - Reading 8	0.54	ppm	7/7/2006	7/7/2006	7/7/2006	6/7/2006	9:00
BGC01	AJ17244	TRG	NO2NO3 - Reading 9	0.63	ppm	8/8/2006	8/8/2006	7/18/2006	6/7/2006	9:00
BGC01	AJ17244	TRG	NO2NO3 - Reading 10	0.66	ppm	8/8/2006	8/8/2006	7/28/2006	6/7/2006	9:00
BGC01	AJ17244	TRG	NO2NO3 - Final	0.69	ppm	8/8/2006	8/8/2006	8/7/2006	6/7/2006	9:00
BGC01	AJ17244	TRG	Non-Filtered BOD 60 - Reading 1	1.5	ppm	6/8/2006	6/9/2006		6/7/2006	9:00
BGC01	AJ17244	TRG	Non-Filtered BOD 60 - Reading 2	4.6	ppm	6/8/2006	6/12/2006		6/7/2006	9:00
BGC01	AJ17244	TRG	Non-Filtered BOD 60 - Reading 3	5.8	ppm	6/8/2006	6/14/2006		6/7/2006	9:00

BGC01	AJ17244	TRG	Non-Filtered BOD 60 - Reading 4	6.7	ppm	6/8/2006	6/16/2006		6/7/2006	9:00
BGC01	AJ17244	TRG	Non-Filtered BOD 60 - Reading 5	7.6	ppm	6/8/2006	6/19/2006		6/7/2006	9:00
BGC01	AJ17244	TRG	Non-Filtered BOD 60 - Reading 6	8.8	ppm	6/8/2006	6/23/2006		6/7/2006	9:00
BGC01	AJ17244	TRG	Non-Filtered BOD 60 - Reading 7	11	ppm	6/8/2006	6/28/2006		6/7/2006	9:00
BGC01	AJ17244	TRG	Non-Filtered BOD 60 - Reading 8	13	ppm	6/8/2006	7/7/2006		6/7/2006	9:00
BGC01	AJ17244	TRG	Non-Filtered BOD 60 - Reading 9	15	ppm	6/8/2006	7/18/2006		6/7/2006	9:00
BGC01	AJ17244	TRG	Non-Filtered BOD 60 - Reading 10	16	ppm	6/8/2006	7/28/2006		6/7/2006	9:00
BGC01	AJ17244	TRG	Non-Filtered BOD 60 - Final	18	ppm	6/8/2006	8/7/2006		6/7/2006	9:00
BGC02	AJ17245	TRG	TSS	15.5	ppm	6/8/2006	6/9/2006		6/7/2006	9:50
BGC02	AJ17245	TRG	TDS	67.3	ppm	6/8/2006	6/9/2006		6/7/2006	9:50
BGC02	AJ17245	TRG	Alkalinity	20.7	ppm	6/12/2006	6/12/2006		6/7/2006	9:50
BGC02	AJ17245	TRG	Turbidity	10	NTU	6/8/2006	6/8/2006		6/7/2006	9:50
BGC02	AJ17245	TRG	Specific Conductance	59.0	umhos/cm	6/12/2006	6/12/2006		6/7/2006	9:50
BGC02	AJ17245	TRG	True Color	90	PCU	6/8/2006	6/8/2006		6/7/2006	9:50
BGC02	AJ17245	TRG	Chloride by IC	3.8	ppm	6/15/2006	6/15/2006		6/7/2006	9:50
BGC02	AJ17245	TRG	Sulfate	1.9	ppm	6/15/2006	6/15/2006		6/7/2006	9:50
BGC02	AJ17246	TRG	Sodium	4.3	ppm	7/14/2006	7/14/2006		6/7/2006	9:50
BGC02	AJ17247	TRG	Hardness	22.5	ppm	6/21/2006	6/21/2006		6/7/2006	9:50
BGC02	AJ17247	TRG	Nitrate+Nitrite Nitrogen	ND	ppm	6/22/2006	6/22/2006		6/7/2006	9:50
BGC02	AJ17247	TRG	TP	0.16	ppm	6/20/2006	6/20/2006		6/7/2006	9:50
BGC02	AJ17247	TRG	TKN	1.19	ppm	6/20/2006	6/20/2006		6/7/2006	9:50
BGC02	AJ17247	TRG	Ammonia-Nitrogen	ND	ppm	6/15/2006	6/15/2006		6/7/2006	9:50
BGC02	AJ17248	TRG	TOC	14.7	ppm	6/12/2006	6/12/2006		6/7/2006	9:50
BGC02	AJ17249	TRG	pH, Ultimate BOD survey	6.68	pH units	8/7/2006	8/7/2006		6/7/2006	9:50
BGC02	AJ17249	TRG	TOC (60 Day BOD)	10.6	ppm	8/16/2006	8/16/2006		6/7/2006	9:50
BGC02	AJ17249	TRG	TKN (60 Day BOD)	0.66	ppm	8/18/2006	8/18/2006		6/7/2006	9:50
BGC02	AJ17249	TRG	NO2NO3 - Initial Reading	ND	ppm	6/15/2006	6/15/2006	6/8/2006	6/7/2006	9:50
BGC02	AJ17249	TRG	NO2NO3 - Reading 1	ND	ppm	6/15/2006	6/15/2006	6/9/2006	6/7/2006	9:50
BGC02	AJ17249	TRG	NO2NO3 - Reading 2	ND	ppm	6/15/2006	6/15/2006	6/12/2006	6/7/2006	9:50
BGC02	AJ17249	TRG	NO2NO3 - Reading 3	ND	ppm	6/15/2006	6/15/2006	6/14/2006	6/7/2006	9:50
BGC02	AJ17249	TRG	NO2NO3 - Reading 4	ND	ppm	7/7/2006	7/7/2006	6/16/2006	6/7/2006	9:50
BGC02	AJ17249	TRG	NO2NO3 - Reading 5	ND	ppm	7/7/2006	7/7/2006	6/19/2006	6/7/2006	9:50
BGC02	AJ17249	TRG	NO2NO3 - Reading 6	0.19	ppm	7/7/2006	7/7/2006	6/23/2006	6/7/2006	9:50
BGC02	AJ17249	TRG	NO2NO3 - Reading 7	0.44	ppm	7/7/2006	7/7/2006	6/28/2006	6/7/2006	9:50
BGC02	AJ17249	TRG	NO2NO3 - Reading 8	0.55	ppm	7/7/2006	7/7/2006	7/7/2006	6/7/2006	9:50
BGC02	AJ17249	TRG	NO2NO3 - Reading 9	0.65	ppm	8/8/2006	8/8/2006	7/18/2006	6/7/2006	9:50
BGC02	AJ17249	TRG	NO2NO3 - Reading 10	0.69	ppm	8/8/2006	8/8/2006	7/28/2006	6/7/2006	9:50

BGC02	AJ17249	TRG	NO2NO3 - Final	0.83	ppm	8/8/2006	8/8/2006	8/7/2006	6/7/2006	9:50
BGC02	AJ17249	TRG	Non-Filtered BOD 60 - Reading 1	1.4	ppm	6/8/2006	6/9/2006		6/7/2006	9:50
BGC02	AJ17249	TRG	Non-Filtered BOD 60 - Reading 2	4.4	ppm	6/8/2006	6/12/2006		6/7/2006	9:50
BGC02	AJ17249	TRG	Non-Filtered BOD 60 - Reading 3	5.5	ppm	6/8/2006	6/14/2006		6/7/2006	9:50
BGC02	AJ17249	TRG	Non-Filtered BOD 60 - Reading 4	6.3	ppm	6/8/2006	6/16/2006		6/7/2006	9:50
BGC02	AJ17249	TRG	Non-Filtered BOD 60 - Reading 5	7.2	ppm	6/8/2006	6/19/2006		6/7/2006	9:50
BGC02	AJ17249	TRG	Non-Filtered BOD 60 - Reading 6	9.0	ppm	6/8/2006	6/23/2006		6/7/2006	9:50
BGC02	AJ17249	TRG	Non-Filtered BOD 60 - Reading 7	11	ppm	6/8/2006	6/28/2006		6/7/2006	9:50
BGC02	AJ17249	TRG	Non-Filtered BOD 60 - Reading 8	13	ppm	6/8/2006	7/7/2006		6/7/2006	9:50
BGC02	AJ17249	TRG	Non-Filtered BOD 60 - Reading 9	15	ppm	6/8/2006	7/18/2006		6/7/2006	9:50
BGC02	AJ17249	TRG	Non-Filtered BOD 60 - Reading 10	16	ppm	6/8/2006	7/28/2006		6/7/2006	9:50
BGC02	AJ17249	TRG	Non-Filtered BOD 60 - Final	17	ppm	6/8/2006	8/7/2006		6/7/2006	9:50
BGC03	AJ17250	TRG	TSS	8.0	ppm	6/8/2006	6/9/2006		6/7/2006	10:00
BGC03	AJ17250	TRG	TDS	62.0	ppm	6/8/2006	6/9/2006		6/7/2006	10:00
BGC03	AJ17250	TRG	Alkalinity	17.1	ppm	6/12/2006	6/12/2006		6/7/2006	10:00
BGC03	AJ17250	TRG	Turbidity	6.3	NTU	6/8/2006	6/8/2006		6/7/2006	10:00
BGC03	AJ17250	TRG	Specific Conductance	53.9	umhos/cm	6/12/2006	6/12/2006		6/7/2006	10:00
BGC03	AJ17250	TRG	True Color	100	PCU	6/8/2006	6/8/2006		6/7/2006	10:00
BGC03	AJ17250	TRG	Chloride by IC	3.6	ppm	6/15/2006	6/15/2006		6/7/2006	10:00
BGC03	AJ17250	TRG	Sulfate	1.7	ppm	6/15/2006	6/15/2006		6/7/2006	10:00
BGC03	AJ17251	TRG	Sodium	3.9	ppm	7/14/2006	7/14/2006		6/7/2006	10:00
BGC03	AJ17252	TRG	Hardness	19.9	ppm	6/21/2006	6/21/2006		6/7/2006	10:00
BGC03	AJ17252	TRG	Nitrate+Nitrite Nitrogen	ND	ppm	6/22/2006	6/22/2006		6/7/2006	10:00
BGC03	AJ17252	TRG	TP	0.14	ppm	6/20/2006	6/20/2006		6/7/2006	10:00
BGC03	AJ17252	TRG	TKN	1.06	ppm	6/20/2006	6/20/2006		6/7/2006	10:00
BGC03	AJ17252	TRG	Ammonia-Nitrogen	ND	ppm	6/15/2006	6/15/2006		6/7/2006	10:00
BGC03	AJ17253	TRG	TOC	13.7	ppm	6/12/2006	6/12/2006		6/7/2006	10:00
BGC03	AJ17254	TRG	pH, Ultimate BOD survey	6.77	pH units	8/7/2006	8/7/2006		6/7/2006	10:00
BGC03	AJ17254	TRG	TOC (60 Day BOD)	10.5	ppm	8/16/2006	8/16/2006		6/7/2006	10:00
BGC03	AJ17254	TRG	TKN (60 Day BOD)	0.63	ppm	8/18/2006	8/18/2006		6/7/2006	10:00
BGC03	AJ17254	TRG	NO2NO3 - Initial Reading	ND	ppm	6/15/2006	6/15/2006	6/8/2006	6/7/2006	10:00
BGC03	AJ17254	TRG	NO2NO3 - Reading 1	ND	ppm	6/15/2006	6/15/2006	6/9/2006	6/7/2006	10:00
BGC03	AJ17254	TRG	NO2NO3 - Reading 2	ND	ppm	6/15/2006	6/15/2006	6/12/2006	6/7/2006	10:00
BGC03	AJ17254	TRG	NO2NO3 - Reading 3	ND	ppm	6/15/2006	6/15/2006	6/14/2006	6/7/2006	10:00
BGC03	AJ17254	TRG	NO2NO3 - Reading 4	ND	ppm	7/7/2006	7/7/2006	6/16/2006	6/7/2006	10:00
BGC03	AJ17254	TRG	NO2NO3 - Reading 5	ND	ppm	7/7/2006	7/7/2006	6/19/2006	6/7/2006	10:00
BGC03	AJ17254	TRG	NO2NO3 - Reading 6	0.08	ppm	7/7/2006	7/7/2006	6/23/2006	6/7/2006	10:00

BGC03	AJ17254	TRG	NO2NO3 - Reading 7	0.31	ppm	7/7/2006	7/7/2006	6/28/2006	6/7/2006	10:00
BGC03	AJ17254	TRG	NO2NO3 - Reading 8	0.46	ppm	7/7/2006	7/7/2006	7/7/2006	6/7/2006	10:00
BGC03	AJ17254	TRG	NO2NO3 - Reading 9	0.50	ppm	8/8/2006	8/8/2006	7/18/2006	6/7/2006	10:00
BGC03	AJ17254	TRG	NO2NO3 - Reading 10	0.55	ppm	8/8/2006	8/8/2006	7/28/2006	6/7/2006	10:00
BGC03	AJ17254	TRG	NO2NO3 - Final	0.60	ppm	8/8/2006	8/8/2006	8/7/2006	6/7/2006	10:00
BGC03	AJ17254	TRG	Non-Filtered BOD 60 - Reading 1	1.1	ppm	6/8/2006	6/9/2006		6/7/2006	10:00
BGC03	AJ17254	TRG	Non-Filtered BOD 60 - Reading 2	4.2	ppm	6/8/2006	6/12/2006		6/7/2006	10:00
BGC03	AJ17254	TRG	Non-Filtered BOD 60 - Reading 3	5.3	ppm	6/8/2006	6/14/2006		6/7/2006	10:00
BGC03	AJ17254	TRG	Non-Filtered BOD 60 - Reading 4	6.2	ppm	6/8/2006	6/16/2006		6/7/2006	10:00
BGC03	AJ17254	TRG	Non-Filtered BOD 60 - Reading 5	7.2	ppm	6/8/2006	6/19/2006		6/7/2006	10:00
BGC03	AJ17254	TRG	Non-Filtered BOD 60 - Reading 6	8.7	ppm	6/8/2006	6/23/2006		6/7/2006	10:00
BGC03	AJ17254	TRG	Non-Filtered BOD 60 - Reading 7	11	ppm	6/8/2006	6/28/2006		6/7/2006	10:00
BGC03	AJ17254	TRG	Non-Filtered BOD 60 - Reading 8	13	ppm	6/8/2006	7/7/2006		6/7/2006	10:00
BGC03	AJ17254	TRG	Non-Filtered BOD 60 - Reading 9	14	ppm	6/8/2006	7/18/2006		6/7/2006	10:00
BGC03	AJ17254	TRG	Non-Filtered BOD 60 - Reading 10	15	ppm	6/8/2006	7/28/2006		6/7/2006	10:00
BGC03	AJ17254	TRG	Non-Filtered BOD 60 - Final	16	ppm	6/8/2006	8/7/2006		6/7/2006	10:00
BGC04	AJ17255	TRG	TSS	9.0	ppm	6/8/2006	6/9/2006		6/7/2006	9:30
BGC04	AJ17255	TRG	TDS	57.3	ppm	6/8/2006	6/9/2006		6/7/2006	9:30
BGC04	AJ17255	TRG	Alkalinity	16.5	ppm	6/12/2006	6/12/2006		6/7/2006	9:30
BGC04	AJ17255	TRG	Turbidity	5.9	NTU	6/8/2006	6/8/2006		6/7/2006	9:30
BGC04	AJ17255	TRG	Specific Conductance	52.4	umhos/cm	6/12/2006	6/12/2006		6/7/2006	9:30
BGC04	AJ17255	TRG	True Color	65	PCU	6/8/2006	6/8/2006		6/7/2006	9:30
BGC04	AJ17255	TRG	Chloride by IC	3.3	ppm	6/15/2006	6/15/2006		6/7/2006	9:30
BGC04	AJ17255	TRG	Sulfate	1.7	ppm	6/15/2006	6/15/2006		6/7/2006	9:30
BGC04	AJ17256	TRG	Sodium	3.8	ppm	7/14/2006	7/14/2006		6/7/2006	9:30
BGC04	AJ17257	TRG	Hardness	19.8	ppm	6/21/2006	6/21/2006		6/7/2006	9:30
BGC04	AJ17257	TRG	Nitrate+Nitrite Nitrogen	ND	ppm	6/22/2006	6/22/2006		6/7/2006	9:30
BGC04	AJ17257	TRG	TP	0.13	ppm	6/20/2006	6/20/2006		6/7/2006	9:30
BGC04	AJ17257	TRG	TKN	1.07	ppm	6/20/2006	6/20/2006		6/7/2006	9:30
BGC04	AJ17257	TRG	Ammonia-Nitrogen	ND	ppm	6/15/2006	6/15/2006		6/7/2006	9:30
BGC04	AJ17258	TRG	TOC	13.2	ppm	6/12/2006	6/12/2006		6/7/2006	9:30
BGC04	AJ17259	TRG	pH, Ultimate BOD survey	6.76	pH units	8/7/2006	8/7/2006		6/7/2006	9:30
BGC04	AJ17259	TRG	TOC (60 Day BOD)	10.1	ppm	8/16/2006	8/16/2006		6/7/2006	9:30
BGC04	AJ17259	TRG	TKN (60 Day BOD)	0.73	ppm	8/18/2006	8/18/2006		6/7/2006	9:30
BGC04	AJ17259	TRG	NO2NO3 - Initial Reading	ND	ppm	6/15/2006	6/15/2006	6/8/2006	6/7/2006	9:30
BGC04	AJ17259	TRG	NO2NO3 - Reading 1	ND	ppm	6/15/2006	6/15/2006	6/9/2006	6/7/2006	9:30
BGC04	AJ17259	TRG	NO2NO3 - Reading 2	ND	ppm	6/15/2006	6/15/2006	6/12/2006	6/7/2006	9:30

BGC04	AJ17259	TRG	NO2NO3 - Reading 3	ND	ppm	6/15/2006	6/15/2006	6/14/2006	6/7/2006	9:30
BGC04	AJ17259	TRG	NO2NO3 - Reading 4	ND	ppm	7/7/2006	7/7/2006	6/16/2006	6/7/2006	9:30
BGC04	AJ17259	TRG	NO2NO3 - Reading 5	ND	ppm	7/7/2006	7/7/2006	6/19/2006	6/7/2006	9:30
BGC04	AJ17259	TRG	NO2NO3 - Reading 6	0.11	ppm	7/7/2006	7/7/2006	6/23/2006	6/7/2006	9:30
BGC04	AJ17259	TRG	NO2NO3 - Reading 7	0.38	ppm	7/7/2006	7/7/2006	6/28/2006	6/7/2006	9:30
BGC04	AJ17259	TRG	NO2NO3 - Reading 8	0.45	ppm	7/7/2006	7/7/2006	7/7/2006	6/7/2006	9:30
BGC04	AJ17259	TRG	NO2NO3 - Reading 9	0.50	ppm	8/8/2006	8/8/2006	7/18/2006	6/7/2006	9:30
BGC04	AJ17259	TRG	NO2NO3 - Reading 10	0.54	ppm	8/8/2006	8/8/2006	7/28/2006	6/7/2006	9:30
BGC04	AJ17259	TRG	NO2NO3 - Final	0.61	ppm	8/8/2006	8/8/2006	8/7/2006	6/7/2006	9:30
BGC04	AJ17259	TRG	Non-Filtered BOD 60 - Reading 1	1.0	ppm	6/8/2006	6/9/2006		6/7/2006	9:30
BGC04	AJ17259	TRG	Non-Filtered BOD 60 - Reading 2	3.9	ppm	6/8/2006	6/12/2006		6/7/2006	9:30
BGC04	AJ17259	TRG	Non-Filtered BOD 60 - Reading 3	5.2	ppm	6/8/2006	6/14/2006		6/7/2006	9:30
BGC04	AJ17259	TRG	Non-Filtered BOD 60 - Reading 4	6.0	ppm	6/8/2006	6/16/2006		6/7/2006	9:30
BGC04	AJ17259	TRG	Non-Filtered BOD 60 - Reading 5	6.9	ppm	6/8/2006	6/19/2006		6/7/2006	9:30
BGC04	AJ17259	TRG	Non-Filtered BOD 60 - Reading 6	8.3	ppm	6/8/2006	6/23/2006		6/7/2006	9:30
BGC04	AJ17259	TRG	Non-Filtered BOD 60 - Reading 7	10	ppm	6/8/2006	6/28/2006		6/7/2006	9:30
BGC04	AJ17259	TRG	Non-Filtered BOD 60 - Reading 8	12	ppm	6/8/2006	7/7/2006		6/7/2006	9:30
BGC04	AJ17259	TRG	Non-Filtered BOD 60 - Reading 9	13	ppm	6/8/2006	7/18/2006		6/7/2006	9:30
BGC04	AJ17259	TRG	Non-Filtered BOD 60 - Reading 10	14	ppm	6/8/2006	7/28/2006		6/7/2006	9:30
BGC04	AJ17259	TRG	Non-Filtered BOD 60 - Final	15	ppm	6/8/2006	8/7/2006		6/7/2006	9:30
BGC05	AJ17260	FB	TSS	ND	ppm	6/8/2006	6/9/2006		6/7/2006	8:40
BGC05	AJ17260	FB	TDS	ND	ppm	6/8/2006	6/9/2006		6/7/2006	8:40
BGC05	AJ17260	FB	Alkalinity	ND	ppm	6/12/2006	6/12/2006		6/7/2006	8:40
BGC05	AJ17260	FB	Turbidity	ND	NTU	6/8/2006	6/8/2006		6/7/2006	8:40
BGC05	AJ17260	FB	Specific Conductance	ND	umhos/cm	6/12/2006	6/12/2006		6/7/2006	8:40
BGC05	AJ17260	FB	True Color	ND	PCU	6/8/2006	6/8/2006		6/7/2006	8:40
BGC05	AJ17260	FB	Chloride by IC	ND	ppm	6/15/2006	6/15/2006		6/7/2006	8:40
BGC05	AJ17260	FB	Sulfate	ND	ppm	6/15/2006	6/15/2006		6/7/2006	8:40
BGC05	AJ17261	FB	Sodium	ND	ppm	7/14/2006	7/14/2006		6/7/2006	8:40
BGC05	AJ17262	FB	Hardness	ND	ppm	6/21/2006	6/21/2006		6/7/2006	8:40
BGC05	AJ17262	FB	Nitrate+Nitrite Nitrogen	ND	ppm	6/22/2006	6/22/2006		6/7/2006	8:40
BGC05	AJ17262	FB	TP	ND	ppm	6/20/2006	6/20/2006		6/7/2006	8:40
BGC05	AJ17262	FB	TKN	ND	ppm	6/20/2006	6/20/2006		6/7/2006	8:40
BGC05	AJ17262	FB	Ammonia-Nitrogen	ND	ppm	6/15/2006	6/15/2006		6/7/2006	8:40
BGC05	AJ17263	FB	TOC	ND	ppm	6/12/2006	6/12/2006		6/7/2006	8:40
BGC05	AJ17264	FB	pH, Ultimate BOD survey	7.37	pH units	8/7/2006	8/7/2006		6/7/2006	8:40
BGC05	AJ17264	FB	TOC (60 Day BOD)	ND	ppm	8/16/2006	8/16/2006		6/7/2006	8:40

BGC05	AJ17264	FB	TKN (60 Day BOD)	ND	ppm	8/18/2006	8/18/2006		6/7/2006	8:40
BGC05	AJ17264	FB	NO2NO3 - Initial Reading	ND	ppm	6/15/2006	6/15/2006	6/8/2006	6/7/2006	8:40
BGC05	AJ17264	FB	NO2NO3 - Reading 1	ND	ppm	6/15/2006	6/15/2006	6/9/2006	6/7/2006	8:40
BGC05	AJ17264	FB	NO2NO3 - Reading 2	ND	ppm	6/15/2006	6/15/2006	6/12/2006	6/7/2006	8:40
BGC05	AJ17264	FB	NO2NO3 - Reading 3	ND	ppm	6/15/2006	6/15/2006	6/14/2006	6/7/2006	8:40
BGC05	AJ17264	FB	NO2NO3 - Reading 4	ND	ppm	7/7/2006	7/7/2006	6/16/2006	6/7/2006	8:40
BGC05	AJ17264	FB	NO2NO3 - Reading 5	ND	ppm	7/7/2006	7/7/2006	6/19/2006	6/7/2006	8:40
BGC05	AJ17264	FB	NO2NO3 - Reading 6	ND	ppm	7/7/2006	7/7/2006	6/23/2006	6/7/2006	8:40
BGC05	AJ17264	FB	NO2NO3 - Reading 7	ND	ppm	7/7/2006	7/7/2006	6/28/2006	6/7/2006	8:40
BGC05	AJ17264	FB	NO2NO3 - Reading 8	ND	ppm	7/7/2006	7/7/2006	7/7/2006	6/7/2006	8:40
BGC05	AJ17264	FB	NO2NO3 - Reading 9	ND	ppm	8/8/2006	8/8/2006	7/18/2006	6/7/2006	8:40
BGC05	AJ17264	FB	NO2NO3 - Reading 10	ND	ppm	8/8/2006	8/8/2006	7/28/2006	6/7/2006	8:40
BGC05	AJ17264	FB	NO2NO3 - Final	ND	ppm	8/8/2006	8/8/2006	8/7/2006	6/7/2006	8:40
BGC05	AJ17264	FB	Non-Filtered BOD 60 - Reading 1	0.0	ppm	6/8/2006	6/9/2006		6/7/2006	8:40
BGC05	AJ17264	FB	Non-Filtered BOD 60 - Reading 2	0.0	ppm	6/8/2006	6/12/2006		6/7/2006	8:40
BGC05	AJ17264	FB	Non-Filtered BOD 60 - Reading 3	0.0	ppm	6/8/2006	6/14/2006		6/7/2006	8:40
BGC05	AJ17264	FB	Non-Filtered BOD 60 - Reading 4	0.1	ppm	6/8/2006	6/16/2006		6/7/2006	8:40
BGC05	AJ17264	FB	Non-Filtered BOD 60 - Reading 5	0.1	ppm	6/8/2006	6/19/2006		6/7/2006	8:40
BGC05	AJ17264	FB	Non-Filtered BOD 60 - Reading 6	0.1	ppm	6/8/2006	6/23/2006		6/7/2006	8:40
BGC05	AJ17264	FB	Non-Filtered BOD 60 - Reading 7	0.1	ppm	6/8/2006	6/28/2006		6/7/2006	8:40
BGC05	AJ17264	FB	Non-Filtered BOD 60 - Reading 8	0.1	ppm	6/8/2006	7/7/2006		6/7/2006	8:40
BGC05	AJ17264	FB	Non-Filtered BOD 60 - Reading 9	0.2	ppm	6/8/2006	7/18/2006		6/7/2006	8:40
BGC05	AJ17264	FB	Non-Filtered BOD 60 - Reading 10	0.1	ppm	6/8/2006	7/28/2006		6/7/2006	8:40
BGC05	AJ17264	FB	Non-Filtered BOD 60 - Final	0.3	ppm	6/8/2006	8/7/2006		6/7/2006	8:40
BGC05	AJ17265	TRG	TSS	7.5	ppm	6/8/2006	6/9/2006		6/7/2006	8:40
BGC05	AJ17265	TRG	TDS	56.7	ppm	6/8/2006	6/9/2006		6/7/2006	8:40
BGC05	AJ17265	TRG	Alkalinity	14.4	ppm	6/12/2006	6/12/2006		6/7/2006	8:40
BGC05	AJ17265	TRG	Turbidity	4.9	NTU	6/8/2006	6/8/2006		6/7/2006	8:40
BGC05	AJ17265	TRG	Specific Conductance	48.0	umhos/cm	6/12/2006	6/12/2006		6/7/2006	8:40
BGC05	AJ17265	TRG	True Color	80	PCU	6/8/2006	6/8/2006		6/7/2006	8:40
BGC05	AJ17265	TRG	Chloride by IC	2.8	ppm	6/20/2006	6/20/2006		6/7/2006	8:40
BGC05	AJ17265	TRG	Sulfate	1.7	ppm	6/15/2006	6/15/2006		6/7/2006	8:40
BGC05	AJ17266	TRG	Sodium	3.6	ppm	7/14/2006	7/14/2006		6/7/2006	8:40
BGC05	AJ17267	TRG	Hardness	17.7	ppm	6/21/2006	6/21/2006		6/7/2006	8:40
BGC05	AJ17267	TRG	Nitrate+Nitrite Nitrogen	ND	ppm	6/22/2006	6/22/2006		6/7/2006	8:40
BGC05	AJ17267	TRG	TP	0.11	ppm	6/20/2006	6/20/2006		6/7/2006	8:40
BGC05	AJ17267	TRG	TKN	1.07	ppm	6/20/2006	6/20/2006		6/7/2006	8:40

BGC05	AJ17267	TRG	Ammonia-Nitrogen	ND	ppm	6/15/2006	6/15/2006		6/7/2006	8:40
BGC05	AJ17268	TRG	TOC	12.9	ppm	6/12/2006	6/12/2006		6/7/2006	8:40
BGC05	AJ17269	TRG	pH, Ultimate BOD survey	6.62	pH units	8/7/2006	8/7/2006		6/7/2006	8:40
BGC05	AJ17269	TRG	TOC (60 Day BOD)	10.3	ppm	8/16/2006	8/16/2006		6/7/2006	8:40
BGC05	AJ17269	TRG	TKN (60 Day BOD)	0.51	ppm	8/18/2006	8/18/2006		6/7/2006	8:40
BGC05	AJ17269	TRG	NO2NO3 - Initial Reading	ND	ppm	6/15/2006	6/15/2006	6/8/2006	6/7/2006	8:40
BGC05	AJ17269	TRG	NO2NO3 - Reading 1	ND	ppm	6/15/2006	6/15/2006	6/9/2006	6/7/2006	8:40
BGC05	AJ17269	TRG	NO2NO3 - Reading 2	ND	ppm	6/15/2006	6/15/2006	6/12/2006	6/7/2006	8:40
BGC05	AJ17269	TRG	NO2NO3 - Reading 3	ND	ppm	6/15/2006	6/15/2006	6/14/2006	6/7/2006	8:40
BGC05	AJ17269	TRG	NO2NO3 - Reading 4	ND	ppm	7/7/2006	7/7/2006	6/16/2006	6/7/2006	8:40
BGC05	AJ17269	TRG	NO2NO3 - Reading 5	ND	ppm	7/7/2006	7/7/2006	6/19/2006	6/7/2006	8:40
BGC05	AJ17269	TRG	NO2NO3 - Reading 6	0.06	ppm	7/7/2006	7/7/2006	6/23/2006	6/7/2006	8:40
BGC05	AJ17269	TRG	NO2NO3 - Reading 7	0.40	ppm	7/7/2006	7/7/2006	6/28/2006	6/7/2006	8:40
BGC05	AJ17269	TRG	NO2NO3 - Reading 8	0.45	ppm	7/7/2006	7/7/2006	7/7/2006	6/7/2006	8:40
BGC05	AJ17269	TRG	NO2NO3 - Reading 9	0.50	ppm	8/8/2006	8/8/2006	7/18/2006	6/7/2006	8:40
BGC05	AJ17269	TRG	NO2NO3 - Reading 10	0.55	ppm	8/8/2006	8/8/2006	7/28/2006	6/7/2006	8:40
BGC05	AJ17269	TRG	NO2NO3 - Final	0.57	ppm	8/8/2006	8/8/2006	8/7/2006	6/7/2006	8:40
BGC05	AJ17269	TRG	Non-Filtered BOD 60 - Reading 1	0.9	ppm	6/8/2006	6/9/2006		6/7/2006	8:40
BGC05	AJ17269	TRG	Non-Filtered BOD 60 - Reading 2	3.4	ppm	6/8/2006	6/12/2006		6/7/2006	8:40
BGC05	AJ17269	TRG	Non-Filtered BOD 60 - Reading 3	4.3	ppm	6/8/2006	6/14/2006		6/7/2006	8:40
BGC05	AJ17269	TRG	Non-Filtered BOD 60 - Reading 4	5.1	ppm	6/8/2006	6/16/2006		6/7/2006	8:40
BGC05	AJ17269	TRG	Non-Filtered BOD 60 - Reading 5	5.9	ppm	6/8/2006	6/19/2006		6/7/2006	8:40
BGC05	AJ17269	TRG	Non-Filtered BOD 60 - Reading 6	7.2	ppm	6/8/2006	6/23/2006		6/7/2006	8:40
BGC05	AJ17269	TRG	Non-Filtered BOD 60 - Reading 7	9.2	ppm	6/8/2006	6/28/2006		6/7/2006	8:40
BGC05	AJ17269	TRG	Non-Filtered BOD 60 - Reading 8	11	ppm	6/8/2006	7/7/2006		6/7/2006	8:40
BGC05	AJ17269	TRG	Non-Filtered BOD 60 - Reading 9	12	ppm	6/8/2006	7/18/2006		6/7/2006	8:40
BGC05	AJ17269	TRG	Non-Filtered BOD 60 - Reading 10	13	ppm	6/8/2006	7/28/2006		6/7/2006	8:40
BGC05	AJ17269	TRG	Non-Filtered BOD 60 - Final	14	ppm	6/8/2006	8/7/2006		6/7/2006	8:40
BGC05	AJ17270	FD	TSS	7.5	ppm	6/8/2006	6/9/2006		6/7/2006	8:40
BGC05	AJ17270	FD	TDS	55.3	ppm	6/8/2006	6/9/2006		6/7/2006	8:40
BGC05	AJ17270	FD	Alkalinity	14.7	ppm	6/12/2006	6/12/2006		6/7/2006	8:40
BGC05	AJ17270	FD	Turbidity	5.0	NTU	6/8/2006	6/8/2006		6/7/2006	8:40
BGC05	AJ17270	FD	Specific Conductance	48.4	umhos/cm	6/12/2006	6/12/2006		6/7/2006	8:40
BGC05	AJ17270	FD	True Color	80	PCU	6/8/2006	6/8/2006		6/7/2006	8:40
BGC05	AJ17270	FD	Chloride by IC	2.8	ppm	6/20/2006	6/20/2006		6/7/2006	8:40
BGC05	AJ17270	FD	Sulfate	1.8	ppm	6/16/2006	6/16/2006		6/7/2006	8:40
BGC05	AJ17271	FD	Sodium	3.6	ppm	7/14/2006	7/14/2006		6/7/2006	8:40

BGC05	AJ17272	FD	Hardness	17.2	ppm	6/21/2006	6/21/2006		6/7/2006	8:40
BGC05	AJ17272	FD	Nitrate+Nitrite Nitrogen	ND	ppm	6/22/2006	6/22/2006		6/7/2006	8:40
BGC05	AJ17272	FD	TP	0.11	ppm	6/20/2006	6/20/2006		6/7/2006	8:40
BGC05	AJ17272	FD	TKN	1.13	ppm	6/20/2006	6/20/2006		6/7/2006	8:40
BGC05	AJ17272	FD	Ammonia-Nitrogen	ND	ppm	6/15/2006	6/15/2006		6/7/2006	8:40
BGC05	AJ17273	FD	TOC	13.0	ppm	6/12/2006	6/12/2006		6/7/2006	8:40
BGC05	AJ17274	FD	pH, Ultimate BOD survey	6.65	pH units	8/7/2006	8/7/2006		6/7/2006	8:40
BGC05	AJ17274	FD	TOC (60 Day BOD)	10.7	ppm	8/16/2006	8/16/2006		6/7/2006	8:40
BGC05	AJ17274	FD	TKN (60 Day BOD)	0.64	ppm	8/18/2006	8/18/2006		6/7/2006	8:40
BGC05	AJ17274	FD	NO2NO3 - Initial Reading	ND	ppm	6/15/2006	6/15/2006	6/8/2006	6/7/2006	8:40
BGC05	AJ17274	FD	NO2NO3 - Reading 1	ND	ppm	6/15/2006	6/15/2006	6/9/2006	6/7/2006	8:40
BGC05	AJ17274	FD	NO2NO3 - Reading 2	ND	ppm	6/15/2006	6/15/2006	6/12/2006	6/7/2006	8:40
BGC05	AJ17274	FD	NO2NO3 - Reading 3	ND	ppm	6/15/2006	6/15/2006	6/14/2006	6/7/2006	8:40
BGC05	AJ17274	FD	NO2NO3 - Reading 4	ND	ppm	7/7/2006	7/7/2006	6/16/2006	6/7/2006	8:40
BGC05	AJ17274	FD	NO2NO3 - Reading 5	ND	ppm	7/7/2006	7/7/2006	6/19/2006	6/7/2006	8:40
BGC05	AJ17274	FD	NO2NO3 - Reading 6	0.09	ppm	7/7/2006	7/7/2006	6/23/2006	6/7/2006	8:40
BGC05	AJ17274	FD	NO2NO3 - Reading 7	0.46	ppm	7/7/2006	7/7/2006	6/28/2006	6/7/2006	8:40
BGC05	AJ17274	FD	NO2NO3 - Reading 8	0.53	ppm	7/7/2006	7/7/2006	7/7/2006	6/7/2006	8:40
BGC05	AJ17274	FD	NO2NO3 - Reading 9	0.59	ppm	8/8/2006	8/8/2006	7/18/2006	6/7/2006	8:40
BGC05	AJ17274	FD	NO2NO3 - Reading 10	0.63	ppm	8/8/2006	8/8/2006	7/28/2006	6/7/2006	8:40
BGC05	AJ17274	FD	NO2NO3 - Final	0.67	ppm	8/8/2006	8/8/2006	8/7/2006	6/7/2006	8:40
BGC05	AJ17274	FD	Non-Filtered BOD 60 - Reading 1	1.1	ppm	6/8/2006	6/9/2006		6/7/2006	8:40
BGC05	AJ17274	FD	Non-Filtered BOD 60 - Reading 2	4.0	ppm	6/8/2006	6/12/2006		6/7/2006	8:40
BGC05	AJ17274	FD	Non-Filtered BOD 60 - Reading 3	5.1	ppm	6/8/2006	6/14/2006		6/7/2006	8:40
BGC05	AJ17274	FD	Non-Filtered BOD 60 - Reading 4	5.9	ppm	6/8/2006	6/16/2006		6/7/2006	8:40
BGC05	AJ17274	FD	Non-Filtered BOD 60 - Reading 5	6.9	ppm	6/8/2006	6/19/2006		6/7/2006	8:40
BGC05	AJ17274	FD	Non-Filtered BOD 60 - Reading 6	8.1	ppm	6/8/2006	6/23/2006		6/7/2006	8:40
BGC05	AJ17274	FD	Non-Filtered BOD 60 - Reading 7	10	ppm	6/8/2006	6/28/2006		6/7/2006	8:40
BGC05	AJ17274	FD	Non-Filtered BOD 60 - Reading 8	12	ppm	6/8/2006	7/7/2006		6/7/2006	8:40
BGC05	AJ17274	FD	Non-Filtered BOD 60 - Reading 9	14	ppm	6/8/2006	7/18/2006		6/7/2006	8:40
BGC05	AJ17274	FD	Non-Filtered BOD 60 - Reading 10	15	ppm	6/8/2006	7/28/2006		6/7/2006	8:40
BGC05	AJ17274	FD	Non-Filtered BOD 60 - Final	16	ppm	6/8/2006	8/7/2006		6/7/2006	8:40
CAB01	AJ17275	TRG	TSS	22.0	ppm	6/8/2006	6/9/2006		6/7/2006	10:15
CAB01	AJ17275	TRG	TDS	64.7	ppm	6/8/2006	6/9/2006		6/7/2006	10:15
CAB01	AJ17275	TRG	Alkalinity	20.7	ppm	6/15/2006	6/15/2006		6/7/2006	10:15
CAB01	AJ17275	TRG	Turbidity	8.6	NTU	6/8/2006	6/8/2006		6/7/2006	10:15
CAB01	AJ17275	TRG	Specific Conductance	57.3	umhos/cm	6/15/2006	6/15/2006		6/7/2006	10:15

CAB01	AJ17275	TRG	True Color	110	PCU	6/8/2006	6/8/2006		6/7/2006	10:15
CAB01	AJ17275	TRG	Chloride by IC	3.7	ppm	6/16/2006	6/16/2006		6/7/2006	10:15
CAB01	AJ17275	TRG	Sulfate	1.6	ppm	6/16/2006	6/16/2006		6/7/2006	10:15
CAB01	AJ17276	TRG	Sodium	4.2	ppm	7/14/2006	7/14/2006		6/7/2006	10:15
CAB01	AJ17277	TRG	Hardness	21.8	ppm	7/10/2006	7/10/2006		6/7/2006	10:15
CAB01	AJ17277	TRG	Nitrate+Nitrite Nitrogen	ND	ppm	6/22/2006	6/22/2006		6/7/2006	10:15
CAB01	AJ17277	TRG	TP	0.16	ppm	6/20/2006	6/20/2006		6/7/2006	10:15
CAB01	AJ17277	TRG	TKN	1.21	ppm	6/20/2006	6/20/2006		6/7/2006	10:15
CAB01	AJ17277	TRG	Ammonia-Nitrogen	ND	ppm	6/15/2006	6/15/2006		6/7/2006	10:15
CAB01	AJ17278	TRG	TOC	14.5	ppm	6/12/2006	6/12/2006		6/7/2006	10:15
CAB01	AJ17279	TRG	pH, Ultimate BOD survey	6.71	pH units	8/7/2006	8/7/2006		6/7/2006	10:15
CAB01	AJ17279	TRG	TOC (60 Day BOD)	11.8	ppm	8/16/2006	8/16/2006		6/7/2006	10:15
CAB01	AJ17279	TRG	TKN (60 Day BOD)	0.80	ppm	8/18/2006	8/18/2006		6/7/2006	10:15
CAB01	AJ17279	TRG	NO2NO3 - Initial Reading	ND	ppm	6/15/2006	6/15/2006	6/8/2006	6/7/2006	10:15
CAB01	AJ17279	TRG	NO2NO3 - Reading 1	ND	ppm	6/15/2006	6/15/2006	6/9/2006	6/7/2006	10:15
CAB01	AJ17279	TRG	NO2NO3 - Reading 2	ND	ppm	6/15/2006	6/15/2006	6/12/2006	6/7/2006	10:15
CAB01	AJ17279	TRG	NO2NO3 - Reading 3	ND	ppm	6/15/2006	6/15/2006	6/14/2006	6/7/2006	10:15
CAB01	AJ17279	TRG	NO2NO3 - Reading 4	ND	ppm	7/7/2006	7/7/2006	6/16/2006	6/7/2006	10:15
CAB01	AJ17279	TRG	NO2NO3 - Reading 5	ND	ppm	7/7/2006	7/7/2006	6/19/2006	6/7/2006	10:15
CAB01	AJ17279	TRG	NO2NO3 - Reading 6	0.33	ppm	7/7/2006	7/7/2006	6/23/2006	6/7/2006	10:15
CAB01	AJ17279	TRG	NO2NO3 - Reading 7	0.47	ppm	7/7/2006	7/7/2006	6/28/2006	6/7/2006	10:15
CAB01	AJ17279	TRG	NO2NO3 - Reading 8	0.56	ppm	7/7/2006	7/7/2006	7/7/2006	6/7/2006	10:15
CAB01	AJ17279	TRG	NO2NO3 - Reading 9	0.65	ppm	8/8/2006	8/8/2006	7/18/2006	6/7/2006	10:15
CAB01	AJ17279	TRG	NO2NO3 - Reading 10	0.71	ppm	8/8/2006	8/8/2006	7/28/2006	6/7/2006	10:15
CAB01	AJ17279	TRG	NO2NO3 - Final	0.80	ppm	8/8/2006	8/8/2006	8/7/2006	6/7/2006	10:15
CAB01	AJ17279	TRG	Non-Filtered BOD 60 - Reading 1	1.4	ppm	6/8/2006	6/9/2006		6/7/2006	10:15
CAB01	AJ17279	TRG	Non-Filtered BOD 60 - Reading 2	4.4	ppm	6/8/2006	6/12/2006		6/7/2006	10:15
CAB01	AJ17279	TRG	Non-Filtered BOD 60 - Reading 3	5.4	ppm	6/8/2006	6/14/2006		6/7/2006	10:15
CAB01	AJ17279	TRG	Non-Filtered BOD 60 - Reading 4	6.3	ppm	6/8/2006	6/16/2006		6/7/2006	10:15
CAB01	AJ17279	TRG	Non-Filtered BOD 60 - Reading 5	7.3	ppm	6/8/2006	6/19/2006		6/7/2006	10:15
CAB01	AJ17279	TRG	Non-Filtered BOD 60 - Reading 6	9.6	ppm	6/8/2006	6/23/2006		6/7/2006	10:15
CAB01	AJ17279	TRG	Non-Filtered BOD 60 - Reading 7	11	ppm	6/8/2006	6/28/2006		6/7/2006	10:15
CAB01	AJ17279	TRG	Non-Filtered BOD 60 - Reading 8	13	ppm	6/8/2006	7/7/2006		6/7/2006	10:15
CAB01	AJ17279	TRG	Non-Filtered BOD 60 - Reading 9	15	ppm	6/8/2006	7/18/2006		6/7/2006	10:15
CAB01	AJ17279	TRG	Non-Filtered BOD 60 - Reading 10	16	ppm	6/8/2006	7/28/2006		6/7/2006	10:15
CAB01	AJ17279	TRG	Non-Filtered BOD 60 - Final	17	ppm	6/8/2006	8/7/2006		6/7/2006	10:15

BGC01CH	AJ17374	TRG	Chlorophyll A (calculated)	16.5	ug/L	6/29/2006	6/30/2006	6/7/2006	9:00
BGC01CH	AJ17374	TRG	Chlorophyll A (raw)	248	ug/L	6/29/2006	6/30/2006	6/7/2006	9:00
BGC02CH	AJ17375	TRG	Chlorophyll A (calculated)	14.1	ug/L	6/29/2006	6/30/2006	6/7/2006	9:50
BGC02CH	AJ17375	TRG	Chlorophyll A (raw)	212	ug/L	6/29/2006	6/30/2006	6/7/2006	9:50
BGC03CH	AJ17376	TRG	Chlorophyll A (calculated)	25.5	ug/L	6/29/2006	6/30/2006	6/7/2006	10:00
BGC03CH	AJ17376	TRG	Chlorophyll A (raw)	382	ug/L	6/29/2006	6/30/2006	6/7/2006	10:00
BGC04CH	AJ17377	TRG	Chlorophyll A (calculated)	50.7	ug/L	6/29/2006	6/30/2006	6/7/2006	9:30
BGC04CH	AJ17377	TRG	Chlorophyll A (raw)	761	ug/L	6/29/2006	6/30/2006	6/7/2006	9:30
BGC05CH	AJ17378	TRG	Chlorophyll A (calculated)	49.1	ug/L	6/29/2006	6/30/2006	6/7/2006	8:40
BGC05CH	AJ17378	TRG	Chlorophyll A (raw)	736	ug/L	6/29/2006	6/30/2006	6/7/2006	8:40

Appendix F2 – Cross Sections and Discharge Measurements

Big Creek 101506

Field Data Summary -- Cross Sections

Site #	Width (ft)	Width (m)	Depth (ft)	Depth (m)
BGC01	100	30.48	4.96	1.512
BGC02	195	59.436	5.01	1.527
BGC03	249	75.895	5.17	1.576
BGC04	285	86.868	4.58	1.396
CAB01	125	38.100	3.49	1.064

STREAM CROSS-SECTION SPREADSHEET

Site Number: BGC 1 **Subsegment:** 101506 **Waterbody:** Big Creek
Site Description: Just Upstream of HWY. 115
Type of Equipment: ☑ Fathometer ☐ Hydrotrac ☐ Manual
Initial Bank: ☑ RDB ☐ LDB
Tapedown:
Guage Height:
Date: 6/7/2006

WIDTH[1] (ft):	100.00
AREA[2] (ft^2):	495.57
AVG. DEPTH[3](ft):	4.96

Subsection	Distance from initial point (ft)	Width[4] (ft)	Depth (ft)	Area[5] (sq.ft.)	Area of element as % of Total Area[6 & 7]
1	0.0	2.50	0.00	0.00	
2	5.0	6.05	3.00	18.15	3.66%
3	12.1	7.10	3.20	22.72	4.58%
4	19.2	7.10	5.10	36.21	7.31%
5	26.3	7.10	6.20	44.02	8.88%
6	33.4	7.10	6.70	47.57	9.60%
7	40.5	7.10	7.00	49.70	10.03%
8	47.6	7.10	7.20	51.12	10.32%
9	54.7	7.10	7.40	52.54	10.60%
10	61.8	7.10	6.90	48.99	9.89%
11	68.9	7.10	5.10	36.21	7.31%
12	76.0	7.10	5.00	35.50	7.16%
13	83.1	7.10	3.70	26.27	5.30%
14	90.2	7.10	2.50	17.75	3.58%
15	97.3	4.90	1.80	8.82	1.78%
16	100.0	1.35	0.00	0.00	0.00%
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
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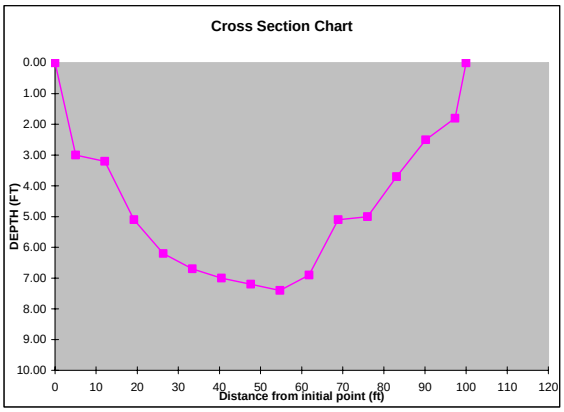
33					
34					
35					
36					
37					
38					
39					
40					
	Total	100.00		495.57	100.00%



Data Collection Crew		Office Data Work	
Measurement made by:	Mike Reed	Data Inputed by / Date:	6/14/2006
Notetaker/Recorder:	Kevin Masden	Data Input Checked by / Date:	6/14/2006
Other:			

Note 1: WIDTH (ft) = sum of the width column
Note 2: AREA (sq.ft.) = sum of the area column
Note 3: AVG. DEPTH (ft) = area/width (using the values from this table)
Note 4: Width of element
Note 5: Area=Width*Depth for element
Note 6: Percent area = element area/total area x 100%
Note 7: Percent area should be less than 10% as per USGS standard.
Note 8: Blank fields are cleared from all calculations.
Note 9: The cross sections are taken at areas representative of the stream.

STREAM CROSS-SECTION SPREADSHEET

Site Number: BGC 2 **Subsegment:** 101506 **Waterbody:** Big Creek

Site Description: Just Downstream from Confluence with Cainey Bayou

Type of Equipment: ☑ Fathometer ☐ Hydrotrac ☐ Manual

Initial Bank: ☑ RDB ☐ LDB

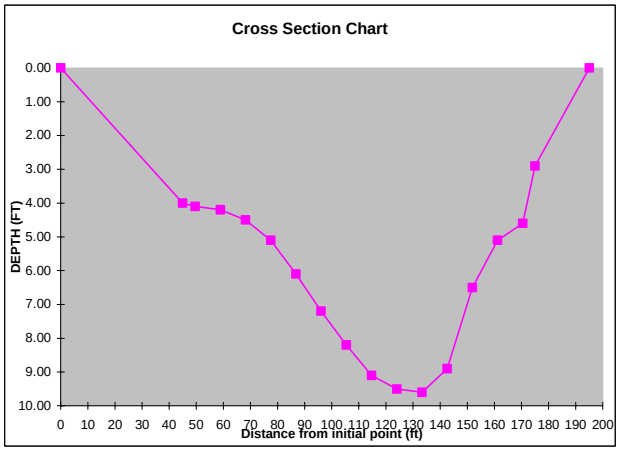
Tapedown:

Guage Height:

Date: 7/6/2006

WIDTH[1] (ft):	195.00
AREA[2] (ft^2):	976.16
AVG. DEPTH[3](ft):	5.01

Distance from initial point (ft)	Width[4] (ft)	Depth (ft)	Area[5] (sq.ft.)	Area of element as % of Total Area[6 & 7]
0.0	22.50	0.00	0.00	
45.0	24.80	4.00	99.20	10.16%
49.6	6.95	4.10	28.50	2.92%
58.9	9.30	4.20	39.06	4.00%
68.2	9.30	4.50	41.85	4.29%
77.5	9.30	5.10	47.43	4.86%
86.8	9.30	6.10	56.73	5.81%
96.1	9.30	7.20	66.96	6.86%
105.4	9.30	8.20	76.26	7.81%
114.7	9.30	9.10	84.63	8.67%
124.0	9.30	9.50	88.35	9.05%
133.3	9.30	9.60	89.28	9.15%
142.6	9.30	8.90	82.77	8.48%
151.9	9.30	6.50	60.45	6.19%
161.2	9.30	5.10	47.43	4.86%
170.5	6.90	4.60	31.74	3.25%
175.0	12.25	2.90	35.53	3.64%
195.0	10.00	0.00	0.00	0.00%
Total	195.00		976.16	100.00%



Data Collection Crew		Office Data Work	
Measurement made by:	Mike Reed	Data Inputed by / Date:	6/14/2006
Notetaker/Recorder:	Kevin Masden	Data Input Checked by / Date:	06/14/206
Other:			

Note 1: WIDTH (ft) = sum of the width column
Note 2: AREA (sq.ft.) = sum of the area column
Note 3: AVG. DEPTH (ft) = area/width (using the values from this table)
Note 4: Width of element
Note 5: Area=Width*Depth for element
Note 6: Percent area = element area/total area x 100%
Note 7: Percent area should be less than 10% as per USGS standard.
Note 8: Blank fields are cleared from all calculations.
Note 9: The cross sections are taken at areas representative of the stream.

STREAM CROSS-SECTION SPREADSHEET

Site Number: BGC03 **Subsegment:** 101506 **Waterbody:** Big Creek

Site Description: Near pump station on RDB

Type of Equipment: ☑ Fathometer ☐ Hydrotrac ☐ Manual

Initial Bank: ☐ RDB ☑ LDB

Tapedown:

Guage Height:

Date: 6/6/2006

WIDTH[1] (ft):	249.00
AREA[2] (ft^2):	1286.47
AVG. DEPTH[3] (ft):	5.17

Subsection	Distance from initial point (ft)	Width[4] (ft)	Depth (ft)	Area[5] (sq.ft.)	Area of element as % of Total Area[6 & 7]
1	0.0	30.00	0.00	0.00	
2	60.0	33.84	4.50	152.28	11.84%
3	67.7	7.68	5.10	39.17	3.04%
4	75.4	7.68	5.90	45.31	3.52%
5	83.0	7.68	6.30	48.38	3.76%
6	90.7	7.68	6.60	50.69	3.94%
7	98.4	7.68	7.00	53.76	4.18%
8	106.1	7.68	7.50	57.60	4.48%
9	113.8	7.68	8.00	61.44	4.78%
10	121.4	7.68	8.70	66.82	5.19%
11	129.1	7.68	9.10	69.89	5.43%
12	136.8	7.68	9.50	72.96	5.67%
13	144.5	7.68	9.60	73.73	5.73%
14	152.2	7.68	9.30	71.42	5.55%
15	159.8	7.68	8.80	67.58	5.25%
16	167.5	7.68	7.90	60.67	4.72%
17	175.2	7.68	6.60	50.69	3.94%
18	182.9	7.68	5.90	45.31	3.52%
19	190.6	7.68	5.00	38.40	2.98%
20	198.2	7.68	4.20	32.26	2.51%
21	205.9	7.67	4.60	35.28	2.74%
22	213.6	11.54	3.90	45.01	3.50%
23	229.0	17.71	2.70	47.82	3.72%
24	249.0	10.00	0.00	0.00	0.00%
25					
26					
27					
28					
29					
30					
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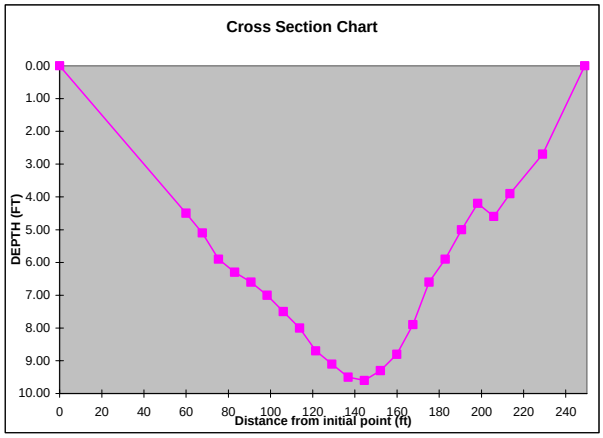
34					
35					
36					
37					
38					
39					
40					
	Total	249.00		1286.47	100.00%



Data Collection Crew		Office Data Work	
Measurement made by:	Chuck Fontenot	Data Inputed by / Date:	6/12/2006
Notetaker/Recorder:	Jeremy Griffith	Data Input Checked by / Date:	6/12/2006
Other:			

Note 1: WIDTH (ft) = sum of the width column
Note 2: AREA (sq.ft.) = sum of the area column
Note 3: AVG. DEPTH (ft) = area/width (using the values from this table)
Note 4: Width of element
Note 5: Area=Width*Depth for element
Note 6: Percent area = element area/total area x 100%
Note 7: Percent area should be less than 10% as per USGS standard.
Note 8: Blank fields are cleared from all calculations.
Note 9: The cross sections are taken at areas representative of the stream.

STREAM CROSS-SECTION SPREADSHEET

Site Number: BGC04 **Subsegment:** 101506 **Waterbody:** Big Creek

Site Description: Just downstream of confluence with Camels slough

Type of Equipment: ☐ Fathometer ☐ Hydrotrac ☑ Manual

Initial Bank: ☑ RDB ☐ LDB

Tapedown:

Guage Height:

Date: 6/6/2006

WIDTH[1] (ft):	285.00
AREA[2] (ft^2):	1305.62
AVG. DEPTH[3](ft):	4.58

Subsection	Distance from initial point (ft)	Width[4] (ft)	Depth (ft)	Area[5] (sq.ft.)	Area of element as % of Total Area[6 & 7]
1	0.0	10.00	0.00	0.00	
2	20.0	15.15	2.80	42.42	3.25%
3	30.3	10.30	3.80	39.14	3.00%
4	40.6	10.30	4.80	49.44	3.79%
5	50.9	10.30	5.80	59.74	4.58%
6	61.2	10.30	7.00	72.10	5.52%
7	71.5	10.30	8.10	83.43	6.39%
8	81.8	10.30	8.90	91.67	7.02%
9	92.1	10.30	9.30	95.79	7.34%
10	102.4	10.30	9.20	94.76	7.26%
11	112.7	10.30	8.90	91.67	7.02%
12	123.0	10.30	8.10	83.43	6.39%
13	133.3	10.30	7.30	75.19	5.76%
14	143.6	10.30	6.80	70.04	5.36%
15	153.9	10.30	5.90	60.77	4.65%
16	164.2	20.55	5.00	102.75	7.87%
17	195.0	60.40	3.20	193.28	14.80%
18	285.0	45.00	0.00	0.00	0.00%
19					
20					
21					
22					
23					
24					
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26					
27					
28					
29					
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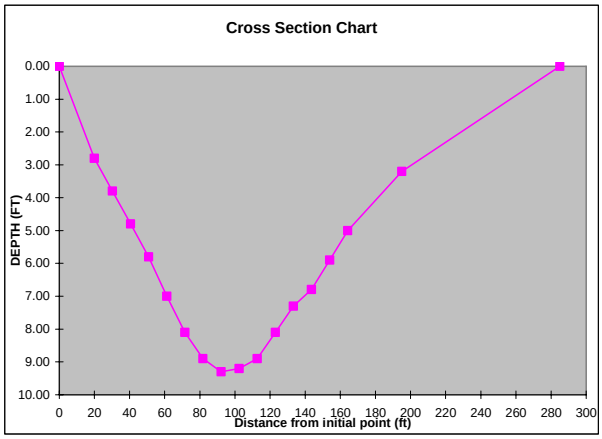
36					
37					
38					
39					
40					
	Total	285.00		1305.62	100.00%



Data Collection Crew		Office Data Work	
Measurement made by:	Chuck Fontenot	Data Inputed by / Date:	6/12/2006
Notetaker/Recorder:	Jeremy Griffith	Data Input Checked by / Date:	6/12/2006
Other:			

Note 1: WIDTH (ft) = sum of the width column
Note 2: AREA (sq.ft.) = sum of the area column
Note 3: AVG. DEPTH (ft) = area/width (using the values from this table)
Note 4: Width of element
Note 5: Area=Width*Depth for element
Note 6: Percent area = element area/total area x 100%
Note 7: Percent area should be less than 10% as per USGS standard.
Note 8: Blank fields are cleared from all calculations.
Note 9: The cross sections are taken at areas representative of the stream.

STREAM CROSS-SECTION SPREADSHEET

Site Number: CAB 1 **Subsegment:** 101506 **Waterbody:** Cainey Bayou

Site Description: Just Upstream of Confluence with Big Creek

Type of Equipment: ☑ Fathometer ☐ Hydrotrac ☐ Manual

Initial Bank: ☑ RDB ☐ LDB

Tapedown:

Guage Height:

Date: 6/7/2006

WIDTH[1] (ft):	125.00
AREA[2] (ft^2):	436.53
AVG. DEPTH[3](ft):	3.49

Subsection	Distance from initial point (ft)	Width[4] (ft)	Depth (ft)	Area[5] (sq.ft.)	Area of element as % of Total Area[6 & 7]
1	0.0	2.50	0.00	0.00	
2	5.0	5.75	4.20	24.15	5.53%
3	11.5	6.50	4.30	27.95	6.40%
4	18.0	6.50	4.00	26.00	5.96%
5	24.5	6.50	4.10	26.65	6.11%
6	31.0	6.50	4.30	27.95	6.40%
7	37.5	6.50	4.20	27.30	6.25%
8	44.0	6.50	4.40	28.60	6.55%
9	50.5	6.50	4.40	28.60	6.55%
10	57.0	6.50	4.20	27.30	6.25%
11	63.5	6.50	3.70	24.05	5.51%
12	70.0	6.50	4.20	27.30	6.25%
13	76.5	6.50	4.10	26.65	6.11%
14	83.0	6.50	4.00	26.00	5.96%
15	89.5	6.50	3.80	24.70	5.66%
16	96.0	5.25	3.50	18.38	4.21%
17	100.0	14.50	3.10	44.95	10.30%
18	125.0	12.50	0.00	0.00	0.00%
19					
20					
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29					
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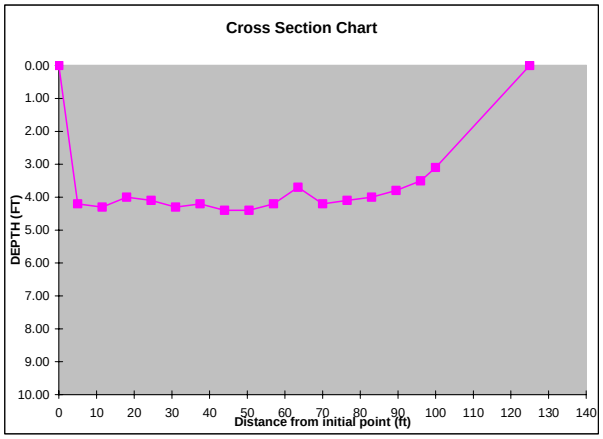
37					
38					
39					
40					
	Total	125.00		436.53	100.00%



Data Collection Crew		Office Data Work	
Measurement made by:	Mike Reed	Data Inputed by / Date:	6/14/2006
Notetaker/Recorder:	Kevin Masden	Data Input Checked by / Date:	6/14/2006
Other:			

Note 1: WIDTH (ft) = sum of the width column
Note 2: AREA (sq.ft.) = sum of the area column
Note 3: AVG. DEPTH (ft) = area/width (using the values from this table)
Note 4: Width of element
Note 5: Area=Width*Depth for element
Note 6: Percent area = element area/total area x 100%
Note 7: Percent area should be less than 10% as per USGS standard.
Note 8: Blank fields are cleared from all calculations.
Note 9: The cross sections are taken at areas representative of the stream.

Appendix F3 – Field Notes

BIG CREEK Survey Report

BIG CREEK (Subsegment 101506) is located in the Terrebone Basin and is approximately 12 miles long. The survey started at Elysian Road and ended at the confluence of Bayou Pelton and BIG CREEK. It was conducted on August 19 through August 21, 2003. The land along the bayou is 50 % urban and 50% agriculture.

The Watershed Survey Group took water quality samples throughout the length of the bayou along with In-Situ readings. There was some measurable flow taken with the boat boards and drogues. Five continuous monitors were set out for approximately a 48hour period during the survey. One continuous monitor located at site number GC 7 malfunctioned and only recorded data through August 20, 2003 until 2:00 p.m. All field notes are included with this report along with all cross-sectional sheets, water quality, and continuous monitor data and log reports.

The Watershed Survey crew encountered some problems while conducting the survey due to the amount of vegetation in the stream. This made it difficult to get accurate flow measurements using the flow meters. The survey crew took the best possible measurements that were available.

The area received some rain on the afternoon of August 19 and 20, 2003, which caused the pumping station to be turned on. The pump station records have been included in the file.

Big Creek 101506 Insitu										
SITE ID NUMBER	Date	Time	DEPTH (meters)	TEMPERATURE, deg C	pH, Standard Units	SPECIFIC CONDUCTANCE, umhos/cm	DISSOLVED OXYGEN PERCENT SATURATION (100% = 1)	DISSOLVED OXYGEN CONCENTRATION, mg/L	SALINITY, ug/L	SECCHI DISK DEPTH, inches
BGC01	6/7/2006	9:00 AM	1.00	28.17	7.16	52.7	59.2	4.66	0.01	13
BGC02	6/7/2006	9:50 AM	1.50	28.32	7.20	53.5	51.7	4.01	0.01	18
BGC03	6/7/2006	10:00 AM	1.00	28.70	6.63	53.5	64.8	5.01	0.01	30
BGC04	6/7/2006	9:30 AM	1.00	28.00	6.50	52.6	64.0	5.00	0.01	30
BGC05	6/7/2006	8:40 AM	1.00	28.00	6.44	47.7	58.7	4.60	0.01	30
CAB01	6/7/2006	10:15 AM	0.33	27.42	6.96	51.5	34.3	2.70	0.01	12

Site Information

Site #: [illegible] Subsegment: 101506 Date: [illegible] Time: [illegible]

Waterbody: Big Creek

Tapedown 1: _____ Staff Gauge 1: _____ Gauge Height 1: _____

Site Location: Just upstream of Hwy 115 Bridge

Personnel: [illegible]

Type of Work: Recon ☐ Data Collection ☑

Weather Conditions:
- Clear ☑
- Drizzle/Light Rain ☐
- Showers ☐

Cloud Cover:
- 0 – 10% ☑
- 11 – 40% ☐
- 41 – 70% ☐
- 71 – 100% ☐

Temperature (°F):
- Hot >85° ☐
- Warm > 75° ☑
- Mild > 65° ☐
- Cool > 60° ☐
- Cold < 60° ☐

Wind (mph):
- <1 ☑
- 1-5 ☐
- 6-10 ☐
- 11-15 ☐
- >16 ☐

Wind Direction:
NW ☐ N ☐ NE ☐
SW ☐ S ☐ SE ☐
E ☐ W ☐
Variable ☐

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☐ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: _____ Temp.(°C): _____ pH: _____ SpCond(µmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____ Secchi (in): _____

InSitu Probe S/N: _____ Surveyor 4a S/N: _____

Continuous Monitor Deployed: ☑ Continuous Monitor S/N: [illegible]

Continuous Monitor Retrieved: ☐ Continuous Monitor Deployment Depth (m): 1.0

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: _____ AquaCalc S/N: _____

Tapedown 2: _____ Staff Gauge 2: _____ Gauge Height 2: _____

Flow Estimated: ☐ Using Discharge Equipment: ☐
Type: Wading ☐ Bridge Board ☐ Boat Board ☐
Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): _____ Time (s): _____

Mid Stream Distance (ft): _____ Time (s): _____

Left Descending Bank Distance (ft): _____ Time (s): _____

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: _____ Fathometer S/N: _____

GPS Measurement: ☐ GPS SSF File Name: _____

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit: _____

Photos Taken: ☐ Picture File #s: _____

Camera: _____

BC01 101506 6/6/06 10:10

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☐

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☐

Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐

Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☐

Percent Tree Canopy Cover 0-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location: _____

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Field Site Survey.doc
Revision 3.0
Revised 11/8/04

Site Information

Site #: BGC 1 Subsegment: 101506 Date: 6/7/06 Time: 9:00

Waterbody: Big Creek

Tapedown 1: _____ Staff Gauge 1: _____ Gauge Height 1: _____

Site Location[1]: Just Upstream of Hwy. 115

Personnel: M. Reed, K. Mudrey

Type of Work: Recon ☐ Data Collection ☑

Weather Conditions:
- Clear ☑
- Drizzle/Light Rain ☐
- Showers ☐

Cloud Cover:
- 0 – 10% ☐
- 11 – 40% ☐
- 41 – 70% ☑
- 71 – 100% ☐

Temperature (°F):
- Hot >85° ☐
- Warm > 75° ☐
- Mild > 65° ☑
- Cool > 60° ☐
- Cold < 60° ☐

Wind (mph):
- <1 ☐
- 1-5 ☐
- 6-10 ☐
- 11-15 ☐
- >16 ☐

Wind Direction:
- NW ☐ N ☐ NE ☐
- SW ☐ S ☐ SE ☐
- E ☐ W ☐
- Variable ☐

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
- Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
- Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
- Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
- Floating/Aquatic Vegetation % Surface Coverage: <1 ☑ 1-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☑ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: 900 Temp.(°C): 28.17 pH: 7.16 SpCond(µhmos/cm): 52.7

D.O.: 4.66 D.O. %: 59.2 Salinity: .03 Depth (m): 1m Secchi (in): 13in

InSitu Probe S/N: 42511 Surveyor 4a S/N: 51969

Continuous Monitor Deployed: ☐ Continuous Monitor S/N: _____

Continuous Monitor Retrieved: ☐ Continuous Monitor Deployment Depth (m): _____

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: _____ AquaCalc S/N: _____

Tapedown 2: _____ Staff Gauge 2: _____ Gauge Height 2: _____

Flow Estimated: ☐ Using Discharge Equipment: ☐
- Type: Wading ☐ Bridge Board ☐ Boat Board ☐
- Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): _____ Time (s): _____

Mid Stream Distance (ft): _____ Time (s): _____

Left Descending Bank Distance (ft): _____ Time (s): _____

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: _____ Fathometer S/N: _____

GPS Measurement: ☐ GPS SSF File Name: _____

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit: _____

Photos Taken: ☐ Picture File #s: _____

Camera: _____

BGC01 101506 6/7/06 9:00

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☐

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☐

Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐

Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☐

Percent Tree Canopy Cover 0-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location: _____

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time:	Temp.(°C):	pH:	Spcond(µhmos/cm):
D.O.:	D.O. %:	Salinity:	Depth (m):
Time:	Temp.(°C):	pH:	Spcond(µhmos/cm):
D.O.:	D.O. %:	Salinity:	Depth (m):
Time:	Temp.(°C):	pH:	Spcond(µhmos/cm):
D.O.:	D.O. %:	Salinity:	Depth (m):

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≡ 0.15 m	20 ≡ 68	25 ≡ 77
1.0 ft ≡ 0.30 m	21 ≡ 69.8	26 ≡ 78.8
1.5 ft ≡ 0.45 m	22 ≡ 71.6	27 ≡ 80.6
2.0 ft ≡ 0.60 m	23 ≡ 73.4	28 ≡ 82.4
2.5 ft ≡ 0.75 m	24 ≡ 75.2	29 ≡ 84.2

Field Site Survey.doc
Revision 3.0

Site Information

Site #: BGC01 Subsegment: 101506 Date: 6/8/06 Time: 1050hrs

Waterbody: Big Creek

Tapedown 1: _____ Staff Gauge 1: _____ Gauge Height 1: _____

Site Location: Just upstream of Hwy 115 bridge

Personnel: Fontenot, Griffith

Type of Work: Recon ☐ Data Collection ☒

Weather Conditions:
- Clear ☒
- Drizzle/Light Rain ☐
- Showers ☐

Cloud Cover:
- 0 – 10% ☒
- 11 – 40% ☐
- 41 – 70% ☐
- 71 – 100% ☐

Temperature (°F):
- Hot >85° ☒
- Warm > 75° ☐
- Mild > 65° ☐
- Cool > 60° ☐
- Cold < 50° ☐

Wind (mph):
- <1 ☒
- 1-5 ☐
- 6-10 ☐
- 11-15 ☐
- >16 ☐

Wind Direction:
- NW ☐ N ☐ NE ☐
- SW ☐ S ☐ SE ☐
- E ☐ W ☐
- Variable ☒

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
- Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
- Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
- Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
- Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☒ 26-50% ☐ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☐ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: _____ Temp.(°C): _____ pH: _____ SpCond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____ Secchi (in): _____

InSitu Probe S/N: _____ Surveyor 4a S/N: _____

Continuous Monitor Deployed: ☐ Continuous Monitor S/N: 42507

Continuous Monitor Retrieved: ☒ Continuous Monitor Deployment Depth (m): 1

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: _____ AquaCalc S/N: _____

Tapedown 2: _____ Staff Gauge 2: _____ Gauge Height 2: _____

Flow Estimated: ☐ Using Discharge Equipment: ☐
- Type: Wading ☐ Bridge Board ☐ Boat Board ☐
- Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): _____ Time (s): _____

Mid Stream Distance (ft): _____ Time (s): _____

Left Descending Bank Distance (ft): _____ Time (s): _____

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: _____ Fathometer S/N: _____

GPS Measurement: ☐ GPS SSF File Name: _____

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit: _____

Photos Taken: ☐ Picture File #s: _____

BGC01 101506 6/8/06 1050

Tapedown Established: ☐ Tapedown Location: _____
Benchmark Established: ☐ Benchmark Location: _____
Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐
Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☐
Man-Made Waterbody: ☐
Stream Dry/Intermittent: ☐
Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☐
Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐
Control Structure Present: ☐ Location: _____
Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐
Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☐
Percent Tree Canopy Cover 0-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:
Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐
Measurement Location: _____
Cross Section Location: _____
Continuous Monitor Deployment: _____
Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____
Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Site Information

Site #: [illegible] Subsegment: 101506 Date: [illegible] Time: 955

Waterbody: Big Creek

Tapedown 1: ____ Staff Gauge 1: ____ Gauge Height 1: ____

Site Location*: Just Downstream from Confluence of Carney Bayou

Personnel: [illegible]

Type of Work: Recon ☐ Data Collection ☒

Weather Conditions:
- Clear ☒
- Drizzle/Light Rain ☐
- Showers ☐

Cloud Cover:
- 0 – 10% ☑
- 11 – 40% ☐
- 41 – 70% ☐
- 71 – 100% ☐

Temperature (°F):
- Hot >85° ☐
- Warm > 75° ☒
- Mild > 65° ☐
- Cool > 60° ☐
- Cold < 60° ☐

Wind (mph):
- <1 ☒
- 1-5 ☐
- 6-10 ☐
- 11-15 ☐
- >16 ☐

Wind Direction:
- NW ☐ N ☐ NE ☐
- SW ☐ S ☐ SE ☐
- E ☐ W ☐
- Variable ☑

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
- Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
- Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
- Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
- Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☐ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: ____ Temp.(°C): ____ pH: ____ SpCond(µhmos/cm): ____

D.O.: ____ D.O. %: ____ Salinity: ____ Depth (m): ____ Secchi (in): ____

InSitu Probe S/N: ____ Surveyor 4a S/N: ____

Continuous Monitor Deployed: ☑ Continuous Monitor S/N: 42506

Continuous Monitor Retrieved: ☐ Continuous Monitor Deployment Depth (m): .75 m

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: ____ AquaCalc S/N: ____

Tapedown 2: ____ Staff Gauge 2: ____ Gauge Height 2: ____

Flow Estimated: ☐ Using Discharge Equipment: ☐
- Type: Wading ☐ Bridge Board ☐ Boat Board ☐
- Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): ____ Time (s): ____

Mid Stream Distance (ft): ____ Time (s): ____

Left Descending Bank Distance (ft): ____ Time (s): ____

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: ____ Fathometer S/N: ____

GPS Measurement: ☐ GPS SSF File Name: ____

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit: ____

Photos Taken: ☐ Picture File #s: ____

Camera: ____

BG02 101506 6/6/06 9:55

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☑

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☑

Sand/Silt: ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐

Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☑

Percent Tree Canopy Cover 0-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location: _____

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Field Site Survey.doc
Revision 3.0

Site Information

Site #: EGC 2 Subsegment: 101506 Date: 6/7/06 Time: 0950

Waterbody: Big Creek

Tapedown 1: _____ Staff Gauge 1: _____ Gauge Height 1: _____

Site Location†: Just Downstream from Confluence with Cairney Bayou

Personnel: M. Reed, K. Meslin

Type of Work: Recon ☐ Data Collection ☑

Weather Conditions:
- Clear ☑
- Drizzle/Light Rain ☐
- Showers ☐

Cloud Cover:
- 0 – 10% ☐
- 11 – 40% ☐
- 41 – 70% ☑
- 71 – 100% ☐

Temperature (°F):
- Hot >85° ☐
- Warm > 75° ☐
- Mild > 65° ☑
- Cool > 60° ☐
- Cold < 60° ☐

Wind (mph):
- <1 ☐
- 1-5 ☐
- 6-10 ☐
- 11-15 ☐
- >16 ☐

Wind Direction:
- NW ☐ N ☐ NE ☐
- SW ☐ S ☐ SE ☐
- E ☐ W ☐
- Variable ☐

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
- Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
- Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
- Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
- Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☑ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: 0950 Temp.(°C): 28.32 pH: 7.26 SpCond(µhmos/cm): 53.5

D.O.: 4.01 D.O. %: 51.7 Salinity: .01 Depth (m): 1.5M Secchi (in): 5.5

InSitu Probe S/N: 42511 Surveyor 4a S/N: 5 1969

Continuous Monitor Deployed: ☐ Continuous Monitor S/N: _____

Continuous Monitor Retrieved: ☐ Continuous Monitor Deployment Depth (m): _____

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: _____ AquaCalc S/N: _____

Tapedown 2: _____ Staff Gauge 2: _____ Gauge Height 2: _____

Flow Estimated: ☐ Using Discharge Equipment: ☐
- Type: Wading ☐ Bridge Board ☐ Boat Board ☐
- Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): _____ Time (s): _____

Mid Stream Distance (ft): _____ Time (s): _____

Left Descending Bank Distance (ft): _____ Time (s): _____

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: _____ Fathometer S/N: _____

GPS Measurement: ☐ GPS SSF File Name: _____

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit: _____

Photos Taken: ☐ Picture File #s: _____

Camera: _____

BG-C02 101506 6/7/06 0950

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☐

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☐

Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐

Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☐

Percent Tree Canopy Cover 0-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location: _____

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Field Site Survey.doc
Revision 3.0

Site Information

Site #: BCC02 Subsegment: 101506 Date: 6/3/06 Time: 1018 hrs

Waterbody: Big Creek

Tapedown 1: _____ Staff Gauge 1: _____ Gauge Height 1: _____

Site Location: Just Downstream from Confluence of Cainey Bayou

Personnel: Griffith, Ch. Fontenot

Type of Work: Recon ☐ Data Collection ☑

Weather Conditions:
- Clear ☑
- Drizzle/Light Rain ☐
- Showers ☐

Cloud Cover:
- 0 – 10% ☑
- 11 – 40% ☐
- 41 – 70% ☐
- 71 – 100% ☐

Temperature (°F):
- Hot >85° ☑
- Warm > 75° ☐
- Mild > 65° ☐
- Cool > 60° ☐
- Cold < 60° ☐

Wind (mph):
- <1 ☐
- 1-5 ☑
- 6-10 ☐
- 11-15 ☐
- >15 ☐

Wind Direction:
- NW ☐ N ☐ NE ☐
- SW ☐ S ☐ SE ☐
- E ☐ W ☐
- Variable ☑

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
- Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
- Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
- Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
- Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☐ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: _____ Temp.(°C): _____ pH: _____ SpCond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____ Secchi (in): _____

InSitu Probe S/N: _____ Surveyor 4a S/N: _____

Continuous Monitor Deployed: ☐ Continuous Monitor S/N: 42506

Continuous Monitor Retrieved: ☑ Continuous Monitor Deployment Depth (m): _____

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: _____ AquaCalc S/N: _____

Tapedown 2: _____ Staff Gauge 2: _____ Gauge Height 2: _____

Flow Estimated: ☐ Using Discharge Equipment: ☐
- Type: Wading ☐ Bridge Board ☐ Boat Board ☐
- Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): _____ Time (s): _____

Mid Stream Distance (ft): _____ Time (s): _____

Left Descending Bank Distance (ft): _____ Time (s): _____

Cross Section Measurement: ☐ Type of Measurement Manual ☐ Fathometer ☐

Cross Section File Name: _____ Fathometer S/N: _____

GPS Measurement: ☐ GPS SSF File Name: _____

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit: _____

Photos Taken: ☐ Picture File #s: _____

Camera: _____

BGC02 101506 6/8/06 1018

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☐

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☐

Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐

Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☐

Percent Tree Canopy Cover 0-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location: _____

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Field Site Survey.doc
Revision 3.0
Revised 11/8/04

Site Information

Site #: BGC03 Subsegment: 101506 Date: 6/6/06 Time: 0945

Waterbody: Big Creek

Tapedown 1: _____ Staff Gauge 1: _____ Gauge Height 1: _____

Site Location: Near Amp station on right descending bank

Personnel: GRIFFITH, FONTENOT

Type of Work: Recon ☐ Data Collection ☐

Weather Conditions: Clear ☑ Drizzle/Light Rain ☐ Showers ☐

Cloud Cover: 0 – 10% ☑ 11 – 40% ☐ 41 – 70% ☐ 71 – 100% ☐

Temperature (°F): Hot >85° ☐ Warm > 75° ☑ Mild > 65° ☐ Cool > 60° ☐ Cold < 60° ☐

Wind (mph): <1 ☐ 1-5 ☑ 6-10 ☐ 11-15 ☐ >16 ☐

Wind Direction: NW ☐ N ☐ NE ☐ SW ☐ S ☐ SE ☐ E ☐ W ☐ Variable ☑

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☐ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: _____ Temp.(°C): _____ pH: _____ SpCond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____ Secchi (in): _____

InSitu Probe S/N: _____ Surveyor 4a S/N: _____

Continuous Monitor Deployed: ☑ Continuous Monitor S/N: 43534

Continuous Monitor Retrieved: ☐ Continuous Monitor Deployment Depth (m): 1

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: _____ AquaCalc S/N: _____

Tapedown 2: _____ Staff Gauge 2: _____ Gauge Height 2: _____

Flow Estimated: ☐ Using Discharge Equipment: ☐
Type: Wading ☐ Bridge Board ☐ Boat Board ☐
Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): _____ Time (s): _____

Mid Stream Distance (ft): _____ Time (s): _____

Left Descending Bank Distance (ft): _____ Time (s): _____

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: _____ Fathometer S/N: _____

GPS Measurement: ☐ GPS SSF File Name: _____

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit: _____

Photos Taken: ☐ Picture File #s: _____

BG-C03 101506 6/6/06 0945

Tapedown Established: ☐ Tapedown Location: _____
Benchmark Established: ☐ Benchmark Location: _____
Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐
Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☐
Man-Made Waterbody: ☐
Stream Dry/Intermittent: ☐
Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☐
Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐
Control Structure Present: ☐ Location: _____
Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐
Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☐
Percent Tree Canopy Cover 0-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:
Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐
Measurement Location: _____
Cross Section Location: _____
Continuous Monitor Deployment: _____
Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____
Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time:	Temp.(°C):	pH:	Spcond(µhmos/cm):
D.O.:	D.O. %:	Salinity:	Depth (m):
Time:	Temp.(°C):	pH:	Spcond(µhmos/cm):
D.O.:	D.O. %:	Salinity:	Depth (m):
Time:	Temp.(°C):	pH:	Spcond(µhmos/cm):
D.O.:	D.O. %:	Salinity:	Depth (m):

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Site Information

Site #: BGC03 Subsegment: 101506 Date: 6/7/06 Time: 1000 hrs

Waterbody: Big Creek

Tapedown 1: Staff Gauge 1: Gauge Height 1:

Site Location[1]: Near pumpstation of right descending bank

Personnel: Griffith, Ch. Fontenot

Type of Work: Recon ☐ Data Collection ☑

Weather Conditions:
Clear ☑
Drizzle/Light Rain ☐
Showers ☐

Cloud Cover:
0 – 10% ☐
11 – 40% ☐
41 – 70% ☑
71 – 100% ☐

Temperature (°F):
Hot >85° ☐
Warm > 75° ☑
Mild > 65° ☐
Cool > 60° ☐
Cold < 60° ☐

Wind (mph):
<1 ☐
1-5 ☑
6-10 ☐
11-15 ☐
>16 ☐

Wind Direction:
NW ☐ N ☐ NE ☐
SW ☐ S ☐ SE ☐
E ☐ W ☐
Variable ☑

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☑ Water Quality Field Parameters: ☑ Profiling: ☐

Water Quality Field Parameters

Time: 1000 Temp.(°C): 28.10 pH: 6.63 SpCond(µhmos/cm): 53.5
D.O.: 5.01 D.O. %: 64.8 Salinity: 0.01 Depth (m): 1 Secchi (in): 30
InSitu Probe S/N: 43533 Surveyor 4a S/N: S2704

Continuous Monitor Deployed: ☐ Continuous Monitor S/N:
Continuous Monitor Retrieved: ☐ Continuous Monitor Deployment Depth (m):

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: AquaCalc S/N:

Tapedown 2: Staff Gauge 2: Gauge Height 2:

Flow Estimated: ☐ Using Discharge Equipment: ☐
Type: Wading ☐ Bridge Board ☐ Boat Board ☐
Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): Time (s):
Mid Stream Distance (ft): Time (s):
Left Descending Bank Distance (ft): Time (s):

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: Fathometer S/N:

GPS Measurement: ☐ GPS SSF File Name:

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit:

Photos Taken: ☐ Picture File #s:

BG-C03 101506 6/7/06 1000

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☑

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☑

Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☑ Flow Regulation Device ☐ Beaver Dam ☐ Log dam ☐

Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☑

Percent Tree Canopy Cover 0-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location: _____

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Site Information

Site #: BGCD3 Subsegment: 101506 Date: 6/8/06 Time: 0945

Waterbody: Big Creek

Tapedown 1: _____ Staff Gauge 1: _____ Gauge Height 1: _____

Site Location[1]: Near pumpstation on RDB

Personnel: Griffith, Ch. Fontenot

Type of Work: Recon ☐ Data Collection ☑

Weather Conditions:
- Clear ☑
- Drizzle/Light Rain ☐
- Showers ☐

Cloud Cover:
- 0 – 10% ☑
- 11 – 40% ☐
- 41 – 70% ☐
- 71 – 100% ☐

Temperature (°F):
- Hot >85° ☑
- Warm > 75° ☐
- Mild > 65° ☐
- Cool > 60° ☐
- Cold < 60° ☐

Wind (mph):
- <1 ☐
- 1-5 ☑
- 6-10 ☐
- 11-15 ☐
- >16 ☐

Wind Direction:
- NW ☐ N ☐ NE ☐
- SW ☐ S ☐ SE ☐
- E ☐ W ☐
- Variable ☑

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
- Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
- Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
- Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
- Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☐ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: _____ Temp.(°C): _____ pH: _____ SpCond(µmhos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____ Secchi (in): _____

InSitu Probe S/N: _____ Surveyor 4a S/N: _____

Continuous Monitor Deployed: ☐ Continuous Monitor S/N: 43534

Continuous Monitor Retrieved: ☑ Continuous Monitor Deployment Depth (m): _____

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: _____ AquaCalc S/N: _____

Tapedown 2: _____ Staff Gauge 2: _____ Gauge Height 2: _____

Flow Estimated: ☐ Using Discharge Equipment: ☐
- Type: Wading ☐ Bridge Board ☐ Boat Board ☐
- Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): _____ Time (s): _____

Mid Stream Distance (ft): _____ Time (s): _____

Left Descending Bank Distance (ft): _____ Time (s): _____

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: _____ Fathometer S/N: _____

GPS Measurement: ☐ GPS SSF File Name: _____

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit: _____

Photos Taken: ☐ Picture File #s: _____

BG-CO 3 101506 6/8/06 0945

Tapedown Established: ☐ Tapedown Location: _____
Benchmark Established: ☐ Benchmark Location: _____
Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐
Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☐
Man-Made Waterbody: ☐
Stream Dry/Intermittent: ☐
Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☐
Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐
Control Structure Present: ☐ Location: _____
Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐
Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☐
Percent Tree Canopy Cover 0-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:
Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐
Measurement Location: _____
Cross Section Location: _____
Continuous Monitor Deployment: _____
Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____
Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Site Information

Site #: BGC04 Subsegment: 101506 Date: 6/6/06 Time: 1000 hrs

Waterbody: Big Creek

Tapedown 1: Staff Gauge 1: Gauge Height 1:

Site Location: Just downstream of confluence with Camels Slough

Personnel: Griffith, Fontenot

Type of Work: Recon ☐ Data Collection ☑

Weather Conditions:
- Clear ☑
- Drizzle/Light Rain ☐
- Showers ☐

Cloud Cover:
- 0 – 10% ☑
- 11 – 40% ☐
- 41 – 70% ☐
- 71 – 100% ☐

Temperature (°F):
- Hot >85° ☐
- Warm > 75° ☑
- Mild > 65° ☐
- Cool > 60° ☐
- Cold < 60° ☐

Wind (mph):
- <1 ☐
- 1-5 ☑
- 6-10 ☐
- 11-15 ☐
- >16 ☐

Wind Direction:
- NW ☐ N ☐ NE ☐
- SW ☐ S ☐ SE ☐
- E ☐ W ☐
- Variable ☑

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
- Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
- Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
- Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
- Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☐ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: Temp.(°C): pH: SpCond(µhmos/cm):

D.O.: D.O. %: Salinity: Depth (m): Secchi (in):

InSitu Probe S/N: Surveyor 4a S/N:

Continuous Monitor Deployed: ☑ Continuous Monitor S/N: 42499

Continuous Monitor Retrieved: ☐ Continuous Monitor Deployment Depth (m): 1

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: AquaCalc S/N:

Tapedown 2: Staff Gauge 2: Gauge Height 2:

Flow Estimated: ☐ Using Discharge Equipment: ☐
- Type: Wading ☐ Bridge Board ☐ Boat Board ☐
- Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): Time (s):

Mid Stream Distance (ft): Time (s):

Left Descending Bank Distance (ft): Time (s):

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: Fathometer S/N:

GPS Measurement: ☐ GPS SSF File Name:

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit:

Photos Taken: ☐ Picture File #s:

B6C04 · 101506 6/6/06 1000hrs

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☐

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☐

Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐

Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☐

Percent Tree Canopy Cover 0-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location: _____

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft = 0.15 m	20 = 68	25 = 77
1.0 ft = 0.30 m	21 = 69.8	26 = 78.8
1.5 ft = 0.45 m	22 = 71.6	27 = 80.6
2.0 ft = 0.60 m	23 = 73.4	28 = 82.4
2.5 ft = 0.75 m	24 = 75.2	29 = 84.2

Site Information

Site #: BGC04 Subsegment: 101506 Date: 6/7/06 Time: 0930

Waterbody: Big Creek

Tapedown 1: Staff Gauge 1: Gauge Height 1:

Site Location: Just downstream of confluence of Camels Slough

Personnel: Griffith, Ch. Fontaot

Type of Work: Recon ☐ Data Collection ☑

Weather Conditions:
- Clear ☑
- Drizzle/Light Rain ☐
- Showers ☐

Cloud Cover:
- 0 – 10% ☐
- 11 – 40% ☐
- 41 – 70% ☑
- 71 – 100% ☐

Temperature (°F):
- Hot >85° ☐
- Warm > 75° ☑
- Mild > 65° ☐
- Cool > 60° ☐
- Cold < 60° ☐

Wind (mph):
- <1 ☐
- 1-5 ☑
- 6-10 ☐
- 11-15 ☐
- >16 ☐

Wind Direction:
- NW ☐ N ☐ NE ☐
- SW ☐ S ☐ SE ☐
- E ☐ W ☐
- Variable ☑

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
- Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
- Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
- Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
- Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☑ Water Quality Field Parameters: ☑ Profiling: ☐

Water Quality Field Parameters

Time: 0930 Temp.(°C): 28.0 pH: 6.50 SpCond(µhmos/cm): 526

D.O.: 5.0 D.O. %: 64 Salinity: 0.01 Depth (m): 1 Secchi (in): 30

InSitu Probe S/N: 43533 Surveyor 4a S/N: 52704

Continuous Monitor Deployed: ☐ Continuous Monitor S/N:

Continuous Monitor Retrieved: ☐ Continuous Monitor Deployment Depth (m):

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: AquaCalc S/N:

Tapedown 2: Staff Gauge 2: Gauge Height 2:

Flow Estimated: ☐ Using Discharge Equipment: ☐
- Type: Wading ☐ Bridge Board ☐ Boat Board ☐
- Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): Time (s):

Mid Stream Distance (ft): Time (s):

Left Descending Bank Distance (ft): Time (s):

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: Fathometer S/N:

GPS Measurement: ☐ GPS SSF File Name:

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit:

Photos Taken: ☐ Picture File #s:

BGC04 101506 6/7/06 0930hrs

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☑

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☑

Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☑ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐

Land Use: Agriculture ☐ Forestry ☑ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☑

Percent Tree Canopy Cover 0-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location: _____

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Site Information

Site #: BGC 04 Subsegment: 101506 Date: 6/8/06 Time: 1000 hr
Waterbody: Big Creek
Tapedown 1: Staff Gauge 1: Gauge Height 1:
Site Location: Just downstream of confluence with Camels Slough
Personnel: Griffith, Ch. Fontaine

Type of Work: Recon ☐ Data Collection ☑

Weather Conditions:
Clear ☑
Drizzle/Light Rain ☐
Showers ☐

Cloud Cover:
0 – 10% ☑
11 – 40% ☐
41 – 70% ☐
71 – 100% ☐

Temperature (°F):
Hot > 85° ☑
Warm > 75° ☐
Mild > 65° ☐
Cool > 60° ☐
Cold < 60° ☐

Wind (mph):
<1 ☐
1-5 ☑
6-10 ☐
11-15 ☐
>16 ☐

Wind Direction:
NW ☐ N ☐ NE ☐
SW ☐ S ☐ SE ☐
E ☐ W ☐
Variable ☑

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☐ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: Temp.(°C): pH: SpCond(µhmos/cm):
D.O.: D.O. %: Salinity: Depth (m): Secchi (in):
InSitu Probe S/N: Surveyor 4a S/N:

Continuous Monitor Deployed: ☐ Continuous Monitor S/N: 424499
Continuous Monitor Retrieved: ☑ Continuous Monitor Deployment Depth (m):

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: AquaCalc S/N:
Tapedown 2: Staff Gauge 2: Gauge Height 2:

Flow Estimated: ☐ Using Discharge Equipment: ☐
Type: Wading ☐ Bridge Board ☐ Boat Board ☐
Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): Time (s):
Mid Stream Distance (ft): Time (s):
Left Descending Bank Distance (ft): Time (s):

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐
Cross Section File Name: Fathometer S/N:

GPS Measurement: ☐ GPS SSF File Name:
Site GPS: ☐ Cross Section GPS: ☐ GPS Unit:

Photos Taken: ☐ Picture File #s:

BGC04. 101506 6/8/04 1000HRS

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☐

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☐

Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐

Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☐

Percent Tree Canopy Cover 0-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location:

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____
D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Site Information

Site #: CAB 1 Subsegment: 101506 Date: [illegible] Time: [illegible]

Waterbody: Crimey Bayou

Tapedown 1: _____ Staff Gauge 1: _____ Gauge Height 1: _____

Site Location[1]: Just upstream with Confluence with Big Creek

Personnel: [illegible] Reed

Type of Work: Recon ☐ Data Collection ☒

Weather Conditions:
- Clear ☒
- Drizzle/Light Rain ☐
- Showers ☐

Cloud Cover:
- 0 – 10% ☒
- 11 – 40% ☐
- 41 – 70% ☐
- 71 – 100% ☐

Temperature (°F):
- Hot >85° ☐
- Warm > 75° ☒
- Mild > 65° ☐
- Cool > 60° ☐
- Cold < 60° ☐

Wind (mph):
- <1 ☒
- 1-5 ☐
- 6-10 ☐
- 11-15 ☐
- >16 ☐

Wind Direction:
- NW ☐ N ☐ NE ☐
- SW ☐ S ☐ SE ☐
- E ☐ W ☐
- Variable ☒

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
- Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
- Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
- Algae Present ☒ Sedimentation/Turbidity Present in Water Column ☐
- Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☒

Water Quality Samples Taken: ☐ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: _____ Temp.(°C): _____ pH: _____ SpCond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____ Secchi (in): _____

InSitu Probe S/N: _____ Surveyor 4a S/N: _____

Continuous Monitor Deployed: ☒ Continuous Monitor S/N: 4250 8

Continuous Monitor Retrieved: ☐ Continuous Monitor Deployment Depth (m): 0.75

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: _____ AquaCalc S/N: _____

Tapedown 2: _____ Staff Gauge 2: _____ Gauge Height 2: _____

Flow Estimated: ☐ Using Discharge Equipment: ☐
- Type: Wading ☐ Bridge Board ☐ Boat Board ☐
- Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): _____ Time (s): _____

Mid Stream Distance (ft): _____ Time (s): _____

Left Descending Bank Distance (ft): _____ Time (s): _____

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: _____ Fathometer S/N: _____

GPS Measurement: ☐ GPS SSF File Name: _____

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit: _____

Photos Taken: ☐ Picture File #s: _____

Camera: _____

CABI . 101506 6/6/06 0940hrs

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☒ Man Altered Waterbody: ☐

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☒

Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐

Land Use: Agriculture ☐ Forestry ☒ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☐

Percent Tree Canopy Cover 0-25% ☒ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location: _____

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft = 0.15 m	20 = 68	25 = 77
1.0 ft = 0.30 m	21 = 69.8	26 = 78.8
1.5 ft = 0.45 m	22 = 71.6	27 = 80.6
2.0 ft = 0.60 m	23 = 73.4	28 = 82.4
2.5 ft = 0.75 m	24 = 75.2	29 = 84.2

Field Site Survey.doc
Revision 3.0

Site Information

Site #: CAB 1 Subsegment: 101506 Date: 6/7/06 Time: 1015

Waterbody: Cainey Bayou

Tapedown 1: _____ Staff Gauge 1: _____ Gauge Height 1: _____

Site Location[1]: Just upstream of Confluence with Big Creek

Personnel: M. Reed, K. Marsden

Type of Work: Recon ☐ Data Collection ☐

Weather Conditions:
Clear ☑
Drizzle/Light Rain ☐
Showers ☐

Cloud Cover:
0 – 10% ☐
11 – 40% ☐
41 – 70% ☑
71 – 100% ☐

Temperature (°F):
Hot > 85° ☐
Warm > 75° ☑
Mild > 65° ☐
Cool > 60° ☐
Cold < 60° ☐

Wind (mph):
<1 ☑
1-5 ☐
6-10 ☐
11-15 ☐
>16 ☐

Wind Direction:
NW ☐ N ☐ NE ☐
SW ☐ S ☐ SE ☐
E ☐ W ☐
Variable ☑

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☐ 26-50% ☑ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☑ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: 1015 Temp.(°C): 27.42 pH: 6.96 SpCond(µhmos/cm): 51.5

2.70 D.O.: ~~3.08~~ D.O. %: 34.3 Salinity: .01 Depth (m): .33 m Secchi (in): 12 in

InSitu Probe S/N: 42511 Surveyor 4a S/N: 51969

Continuous Monitor Deployed: ☐ Continuous Monitor S/N: _____

Continuous Monitor Retrieved: ☐ Continuous Monitor Deployment Depth (m): _____

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: _____ AquaCalc S/N: _____

Tapedown 2: _____ Staff Gauge 2: _____ Gauge Height 2: _____

Flow Estimated: ☐ Using Discharge Equipment: ☐
Type: Wading ☐ Bridge Board ☐ Boat Board ☐
Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): _____ Time (s): _____

Mid Stream Distance (ft): _____ Time (s): _____

Left Descending Bank Distance (ft): _____ Time (s): _____

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: _____ Fathometer S/N: _____

GPS Measurement: ☐ GPS SSF File Name: _____

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit: _____

Photos Taken: ☐ Picture File #s: _____

Camera: _____

CAB1 . 101506 6/7/06 1015

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☐

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☐

Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐

Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☐

Percent Tree Canopy Cover 0-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location: _____

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time:	Temp.(°C):	pH:	Spcond(µhmos/cm):
D.O.:	D.O. %:	Salinity:	Depth (m):
Time:	Temp.(°C):	pH:	Spcond(µhmos/cm):
D.O.:	D.O. %:	Salinity:	Depth (m):
Time:	Temp.(°C):	pH:	Spcond(µhmos/cm):
D.O.:	D.O. %:	Salinity:	Depth (m):

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Field Site Survey.doc
Revision 3.0

Site Information

Site #: CABO1 Subsegment: 101506 Date: 6/8/06 Time: 1023 hrs

Waterbody: Caney Bayou

Tapedown 1: _____ Staff Gauge 1: _____ Gauge Height 1: _____

Site Location[1]: _____

Personnel: Griffith, Ch. Forkenat

Type of Work: Recon ☐ Data Collection ☑

Weather Conditions:
- Clear ☑
- Drizzle/Light Rain ☐
- Showers ☐

Cloud Cover:
- 0 – 10% ☑
- 11 – 40% ☐
- 41 – 70% ☐
- 71 – 100% ☐

Temperature (°F):
- Hot >85° ☑
- Warm > 75° ☐
- Mild > 65° ☐
- Cool > 60° ☐
- Cold < 60° ☐

Wind (mph):
- <1 ☐
- 1-5 ☑
- 6-10 ☐
- 11-15 ☐
- >16 ☐

Wind Direction:
- NW ☐ N ☐ NE ☐
- SW ☐ S ☐ SE ☐
- E ☐ W ☐
- Variable ☑

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
- Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
- Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
- Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
- Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☑

Water Quality Samples Taken: ☐ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: _____ Temp.(°C): _____ pH: _____ SpCond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____ Secchi (in): _____

InSitu Probe S/N: _____ Surveyor 4a S/N: _____

Continuous Monitor Deployed: ☐ Continuous Monitor S/N: 42508

Continuous Monitor Retrieved: ☑ Continuous Monitor Deployment Depth (m): _____

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: _____ AquaCalc S/N: _____

Tapedown 2: _____ Staff Gauge 2: _____ Gauge Height 2: _____

Flow Estimated: ☐ Using Discharge Equipment: ☐
- Type: Wading ☐ Bridge Board ☐ Boat Board ☐
- Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): _____ Time (s): _____

Mid Stream Distance (ft): _____ Time (s): _____

Left Descending Bank Distance (ft): _____ Time (s): _____

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: _____ Fathometer S/N: _____

GPS Measurement: ☐ GPS SSF File Name: _____

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit: _____

Photos Taken: ☐ Picture File #s: _____

Camera: _____

CAB01 · 101506 6/8/06 1023hrs

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☐

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☐

Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐

Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☐

Percent Tree Canopy Cover 0-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location: _____

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Field Site Survey.doc
Revision 3.0

Site Information

Site #: BGC05 Subsegment: 101506 Date: 6/6/06 Time: 1015 hrs

Waterbody: Big Creek

Tapedown 1: ____ Staff Gauge 1: ____ Gauge Height 1: ____

Site Location*: ~~At Dam Below~~ At Mouth of Saline Lake

Personnel: Griffith, Forehet

Type of Work Recon ☐ Data Collection ☑

Weather Conditions:
- Clear ☑
- Drizzle/Light Rain ☐
- Showers ☐

Cloud Cover:
- 0 – 10% ☑
- 11 – 40% ☐
- 41 – 70% ☐
- 71 – 100% ☐

Temperature (°F):
- Hot >85° ☐
- Warm > 75° ☑
- Mild > 65° ☐
- Cool > 60° ☐
- Cold < 60° ☐

Wind (mph):
- <1 ☐
- 1-5 ☑
- 6-10 ☐
- 11-15 ☐
- >16 ☐

Wind Direction:
- NW ☐ N ☐ NE ☐
- SW ☐ S ☐ SE ☐
- E ☐ W ☐
- Variable ☑

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
- Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
- Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
- Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
- Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☐ 26-50% ☑ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☐ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: ____ Temp.(°C): ____ pH: ____ SpCond(µhmos/cm): ____

D.O.: ____ D.O. %: ____ Salinity: ____ Depth (m): ____ Secchi (in): ____

InSitu Probe S/N: ____ Surveyor 4a S/N: ____

Continuous Monitor Deployed: ☑ Continuous Monitor S/N: 43542

Continuous Monitor Retrieved: ☐ Continuous Monitor Deployment Depth (m): 1

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: ____ AquaCalc S/N: ____

Tapedown 2: ____ Staff Gauge 2: ____ Gauge Height 2: ____

Flow Estimated: ☐ Using Discharge Equipment: ☐
- Type: Wading ☐ Bridge Board ☐ Boat Board ☐
- Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): ____ Time (s): ____

Mid Stream Distance (ft): ____ Time (s): ____

Left Descending Bank Distance (ft): ____ Time (s): ____

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: ____ Fathometer S/N: ____

GPS Measurement: ☐ GPS SSF File Name: ____

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit: ____

Photos Taken: ☐ Picture File #s: ____

Camera: ____

BG-C 05 101506 6/6/06 1015

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☐

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☐

Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐

Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☐

Percent Tree Canopy Cover 0-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location: _____

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Field Site Survey.doc
Revision 3.0
Revised 11/8/04

Site Information

Site #: BGC05 Subsegment: 101506 Date: 6/7/06 Time: 0840

Waterbody: Big Creek

Tapedown 1: _____ Staff Gauge 1: _____ Gauge Height 1: _____

Site Location[1]: ~~Adm. Open Bayou confluence~~ At mouth of Saline Lake

Personnel: GRIFFITH, CH. FONTENOT

Type of Work: Recon ☐ Data Collection ☑

Weather Conditions:
- Clear ☑
- Drizzle/Light Rain ☐
- Showers ☐

Cloud Cover:
- 0 – 10% ☐
- 11 – 40% ☐
- 41 – 70% ☑
- 71 – 100% ☑

Temperature (°F):
- Hot > 85° ☐
- Warm > 75° ☐
- Mild > 65° ☑
- Cool > 60° ☐
- Cold < 60° ☐

Wind (mph):
- <1 ☑
- 1-5 ☐
- 6-10 ☐
- 11-15 ☐
- >16 ☐

Wind Direction:
- NW ☐ N ☐ NE ☐
- SW ☐ S ☐ SE ☐
- E ☐ W ☐
- Variable ☑

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
- Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
- Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
- Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
- Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☑ Water Quality Field Parameters: ☑ Profiling: ☐

Water Quality Field Parameters

Time: 0840 Temp.(°C): 28.0 pH: 6.44 SpCond(µhmos/cm): 47.7

D.O.: 4.66 D.O. %: 58.7 Salinity: 0.04 Depth (m): 1 Secchi (in): 30

InSitu Probe S/N: 43533 Surveyor 4a S/N: 52704

Continuous Monitor Deployed: ☐ Continuous Monitor S/N: _____

Continuous Monitor Retrieved: ☐ Continuous Monitor Deployment Depth (m): _____

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: _____ AquaCalc S/N: _____

Tapedown 2: _____ Staff Gauge 2: _____ Gauge Height 2: _____

Flow Estimated: ☐ Using Discharge Equipment: ☐
- Type: Wading ☐ Bridge Board ☐ Boat Board ☐
- Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): _____ Time (s): _____

Mid Stream Distance (ft): _____ Time (s): _____

Left Descending Bank Distance (ft): _____ Time (s): _____

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: _____ Fathometer S/N: _____

GPS Measurement: ☐ GPS SSF File Name: _____

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit: _____

Photos Taken: ☐ Picture File #s: _____

Camera: _____

BFC05 . 101506 6/7/06 0840

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☑

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☑

Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☑ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐

Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☑

Percent Tree Canopy Cover 0-25% ☑ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location: _____

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time:	Temp.(°C):	pH:	Spcond(µhmos/cm):
D.O.:	D.O. %:	Salinity:	Depth (m):
Time:	Temp.(°C):	pH:	Spcond(µhmos/cm):
D.O.:	D.O. %:	Salinity:	Depth (m):
Time:	Temp.(°C):	pH:	Spcond(µhmos/cm):
D.O.:	D.O. %:	Salinity:	Depth (m):

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Field Site Survey.doc
Revision 3.0

Site Information

Site #: BC005 Subsegment: 101506 Date: 6/8/06 Time: 1005 hrs

Waterbody: Big Creek

Tapedown 1: _____ Staff Gauge 1: _____ Gauge Height 1: _____

Site Location: At mouth of Salma Lake

Personnel: Geoff Ho, Ch. Fontenot

Type of Work: Recon ☐ Data Collection ☐

Weather Conditions:
- Clear ☑
- Drizzle/Light Rain ☐
- Showers ☐

Cloud Cover:
- 0 – 10% ☑
- 11 – 40% ☐
- 41 – 70% ☐
- 71 – 100% ☐

Temperature (°F):
- Hot > 85° ☑
- Warm > 75° ☐
- Mild > 65° ☐
- Cool > 60° ☐
- Cold < 60° ☐

Wind (mph):
- <1 ☐
- 1-5 ☑
- 6-10 ☐
- 11-15 ☐
- >16 ☐

Wind Direction:
- NW ☐ N ☐ NE ☐
- SW ☐ S ☐ SE ☐
- E ☐ W ☐
- Variable ☑

Stream Characteristics: Flowing: ☐ Measurable Flow: ☐
- Flow Direction Upstream ☐ Downstream ☐ Tidally Influenced: ☐
- Wind Influence: ☐ Wind Influence Direction: Upstream ☐ Downstream ☐
- Algae Present ☐ Sedimentation/Turbidity Present in Water Column ☐
- Floating/Aquatic Vegetation % Surface Coverage: <1 ☐ 1-25% ☐ 26-50% ☑ 51-75% ☐ 76-100% ☐

Water Quality Samples Taken: ☐ Water Quality Field Parameters: ☐ Profiling: ☐

Water Quality Field Parameters

Time: _____ Temp.(°C): _____ pH: _____ SpCond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____ Secchi (in): _____

InSitu Probe S/N: _____ Surveyor 4a S/N: _____

Continuous Monitor Deployed: ☐ Continuous Monitor S/N: 43542

Continuous Monitor Retrieved: ☑ Continuous Monitor Deployment Depth (m): _____

Flow Measurement: ☐ Type of Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

AquaCalc File Name: _____ AquaCalc S/N: _____

Tapedown 2: _____ Staff Gauge 2: _____ Gauge Height 2: _____

Flow Estimated: ☐ Using Discharge Equipment: ☐
- Type: Wading ☐ Bridge Board ☐ Boat Board ☐
- Drogue Estimate: ☐ Dye Estimate: ☐

Right Descending Bank Distance (ft): _____ Time (s): _____

Mid Stream Distance (ft): _____ Time (s): _____

Left Descending Bank Distance (ft): _____ Time (s): _____

Cross Section Measurement: ☐ Type of Measurement Manual: ☐ Fathometer ☐

Cross Section File Name: _____ Fathometer S/N: _____

GPS Measurement: ☐ GPS SSF File Name: _____

Site GPS: ☐ Cross Section GPS: ☐ GPS Unit: _____

Photos Taken: ☐ Picture File #s: _____

Camera: _____

BGC05 101506 6/8/06 1005

Tapedown Established: ☐ Tapedown Location: _____

Benchmark Established: ☐ Benchmark Location: _____

Survey Equipment Used: ☐

Time of Travel Measurement: ☐ Type of Site: Injection ☐ Collection ☐

Amount of Dye Injected (ml): _____

Physical Site Characteristics: Natural Waterbody: ☐ Man Altered Waterbody: ☐

Man-Made Waterbody: ☐

Stream Dry/Intermittent: ☐

Stream Bottom: Sandy ☐ Clay ☐ Gravel ☐ Hard Clay ☐ Soft Silt ☐

Sand/Silt ☐ Rock/Gravel/Silt ☐ Concrete ☐

Control Structure Present: ☐ Location: _____

Type: Man Made Dam ☐ Flow Regulation Device ☐ Beaver Dam ☐ Log Jam ☐

Land Use: Agriculture ☐ Forestry ☐ Municipal ☐ Industrial ☐ Field/Pasture ☐ Wetland ☐

Percent Tree Canopy Cover 0-25% ☐ 26-50% ☐ 51-75% ☐ 76-100% ☐

Recon Information:

Discharge Measurement: Wading ☐ Bridge Board ☐ Boat Board ☐

Measurement Location: _____

Cross Section Location: _____

Continuous Monitor Deployment: _____

Continuous Monitor Location: _____

Boat Accessible: ☐ Nearest Launch: _____

Bridge ☐ Bridge Safe: ☐ Bridge Width: _____ Bridge Height: _____

Profiling Measurements:

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Time: _____ Temp.(°C): _____ pH: _____ Spcond(µhmos/cm): _____

D.O.: _____ D.O. %: _____ Salinity: _____ Depth (m): _____

Comments: _____

References

Convert Feet to Meters	Convert Celsius to Fahrenheit	
0.5 ft ≅ 0.15 m	20 ≅ 68	25 ≅ 77
1.0 ft ≅ 0.30 m	21 ≅ 69.8	26 ≅ 78.8
1.5 ft ≅ 0.45 m	22 ≅ 71.6	27 ≅ 80.6
2.0 ft ≅ 0.60 m	23 ≅ 73.4	28 ≅ 82.4
2.5 ft ≅ 0.75 m	24 ≅ 75.2	29 ≅ 84.2

Field Site Survey.doc
Revision 3.0
Revised [illegible]

Appendix F4 – Continuous Monitor

Big Creek Continuous Monitoring Averages

Site	Temp	pH	SpCond	DO PERCENT	DO	SALINITY
BGC01	27.89	6.74	47.58	38.0944	2.99	0.0
BGC02	29.78	6.79	54.23	80.2299	6.07	0.0
BGC03	29.11	6.56	54.21	58.5902	4.49	0.0
BGC04	28.32	6.43	52.52	47.7229	3.71	0.0
BGC05	28.66	6.84	45.03	56.7274	4.37	0.0

Big Creek Continuous Monitoring Minimum

Site	Temp	pH	SpCond	DO PERCENT	DO	DO + 1	SALINITY
BGC01	27.23	6.65	46.30	14.5000	1.15	2.15	0.0
BGC02	28.44	6.54	51.60	48.1000	3.72	4.72	0.0
BGC03	28.05	6.34	53.30	28.6000	2.20	3.20	0.0
BGC04	27.83	6.27	51.50	21.9000	1.71	2.71	0.0
BGC05	27.76	6.68	0.10	33.9000	2.65	3.65	0.0

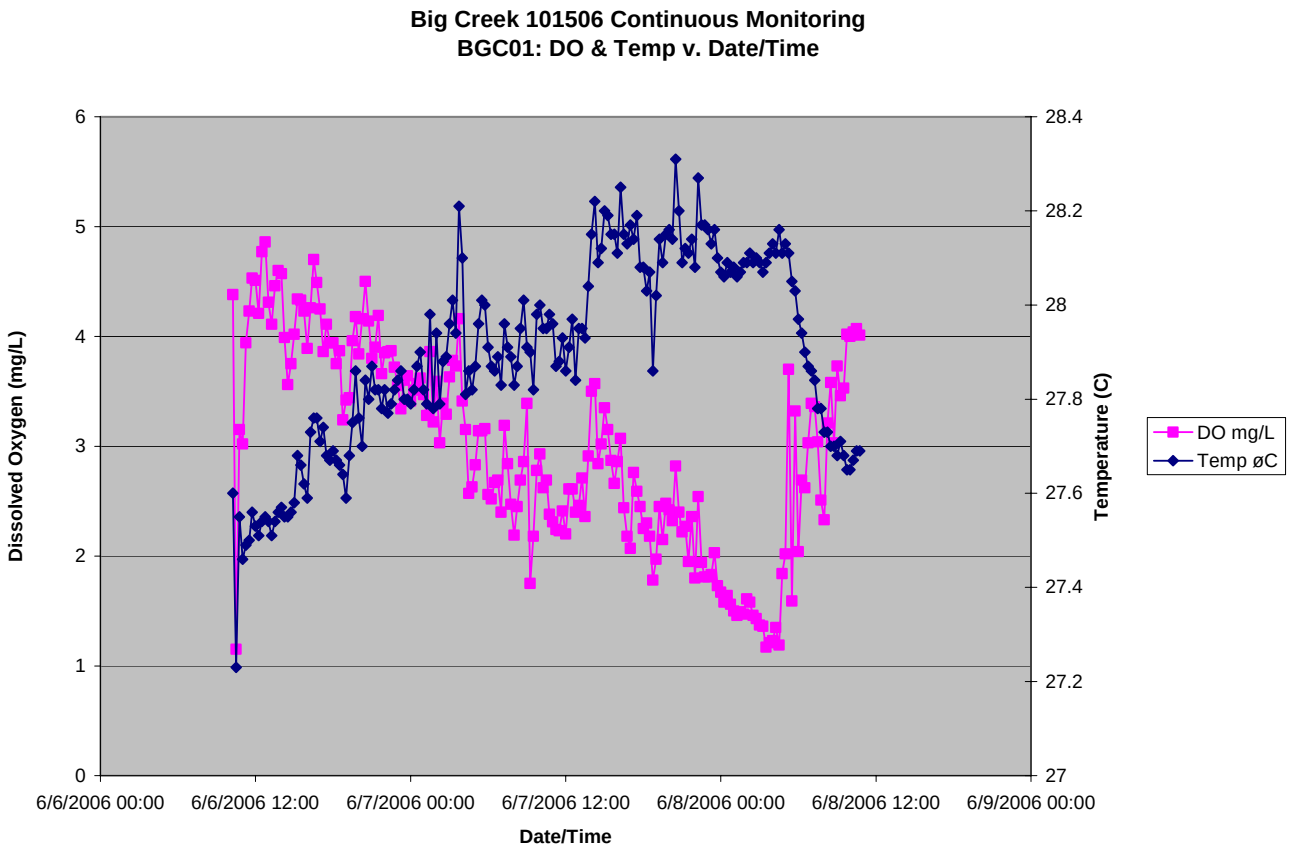
Big Creek Continuous Monitoring Maximum

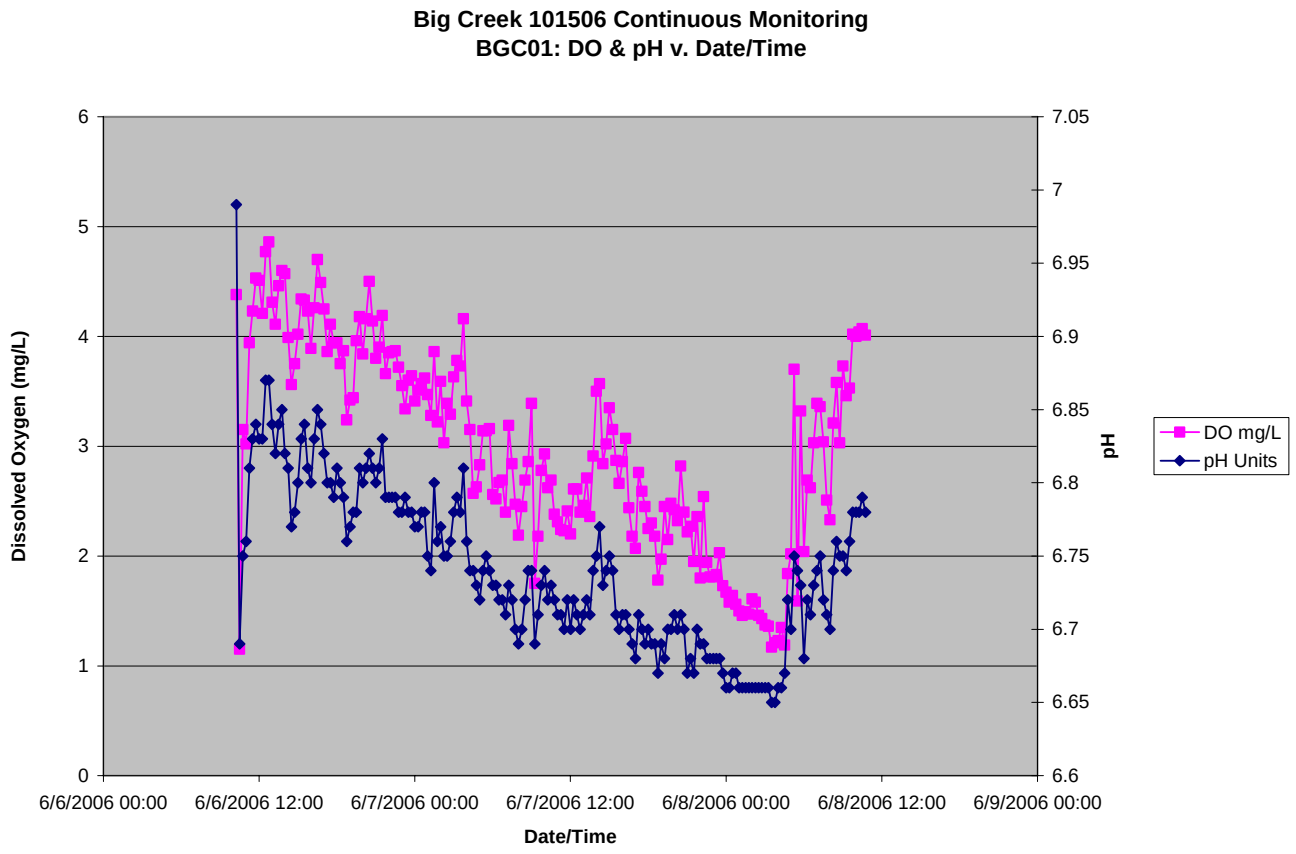
Site	Temp	pH	SpCond	DO PERCENT	DO	SALINITY
BGC01	28.31	6.99	49.40	61.5000	4.86	0.0
BGC02	32.50	7.25	57.50	120.2000	8.70	0.0
BGC03	30.94	6.97	56.60	105.6000	7.87	0.0
BGC04	29.25	6.63	53.50	87.6000	6.72	0.0
BGC05	37.07	7.18	49.40	102.6000	6.94	0.0

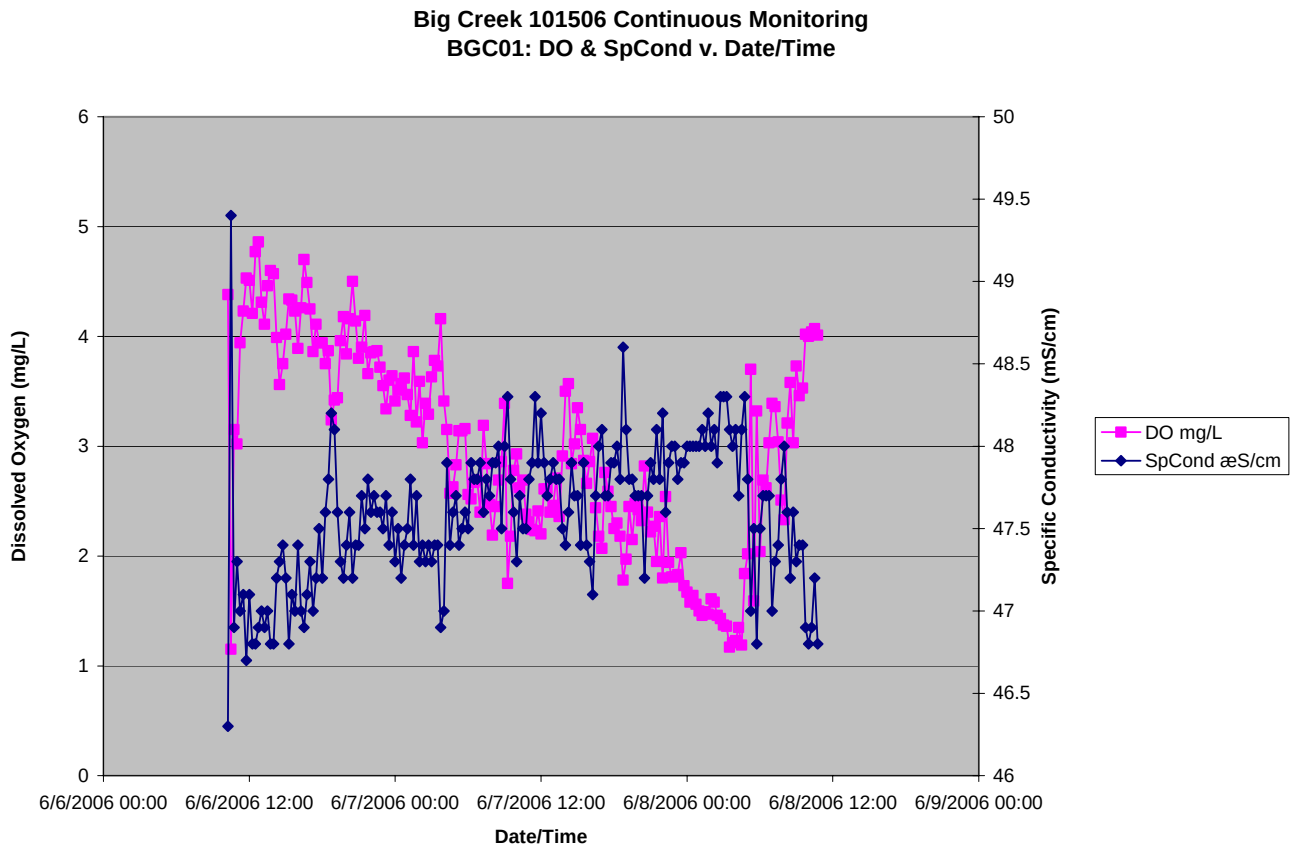
Big Creek Initial Conditions

Reach	Temp	Salinity	Source	DO	Source
1	28.83	0.01	Average(BGC01,BGC02)	3.44	Average(BGC01 min + 1,BGC02 min + 1)
2	29.44	0.01	Average(BGC02,BGC03)	3.96	Average(BGC02 min + 1,BGC03 min + 1)
3	28.72	0.01	Average(BGC03,BGC04)	2.96	Average(BGC03 min + 1,BGC04 min + 1)

*BGC05 Temperature and Specific Conductivity probes were malfunctioning during the survey. However, the temperature values were comparable to BGC04. Therefore, BGC05 values were used in the calibration.


Big Creek 101506 Continuous Monitoring
BGC01: DO & Temp v. Date/Time
Dissolved Oxygen (mg/L)
Temperature (C)
Date/Time
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
Temp øC


Big Creek 101506 Continuous Monitoring
BGC01: DO & pH v. Date/Time
Dissolved Oxygen (mg/L)
pH
Date/Time
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
pH Units


Big Creek 101506 Continuous Monitoring
BGC01: DO & SpCond v. Date/Time
Dissolved Oxygen (mg/L)
Specific Conductivity (mS/cm)
Date/Time
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
SpCond æS/cm

Big Creek
Subsegment 101506
Site BGC01

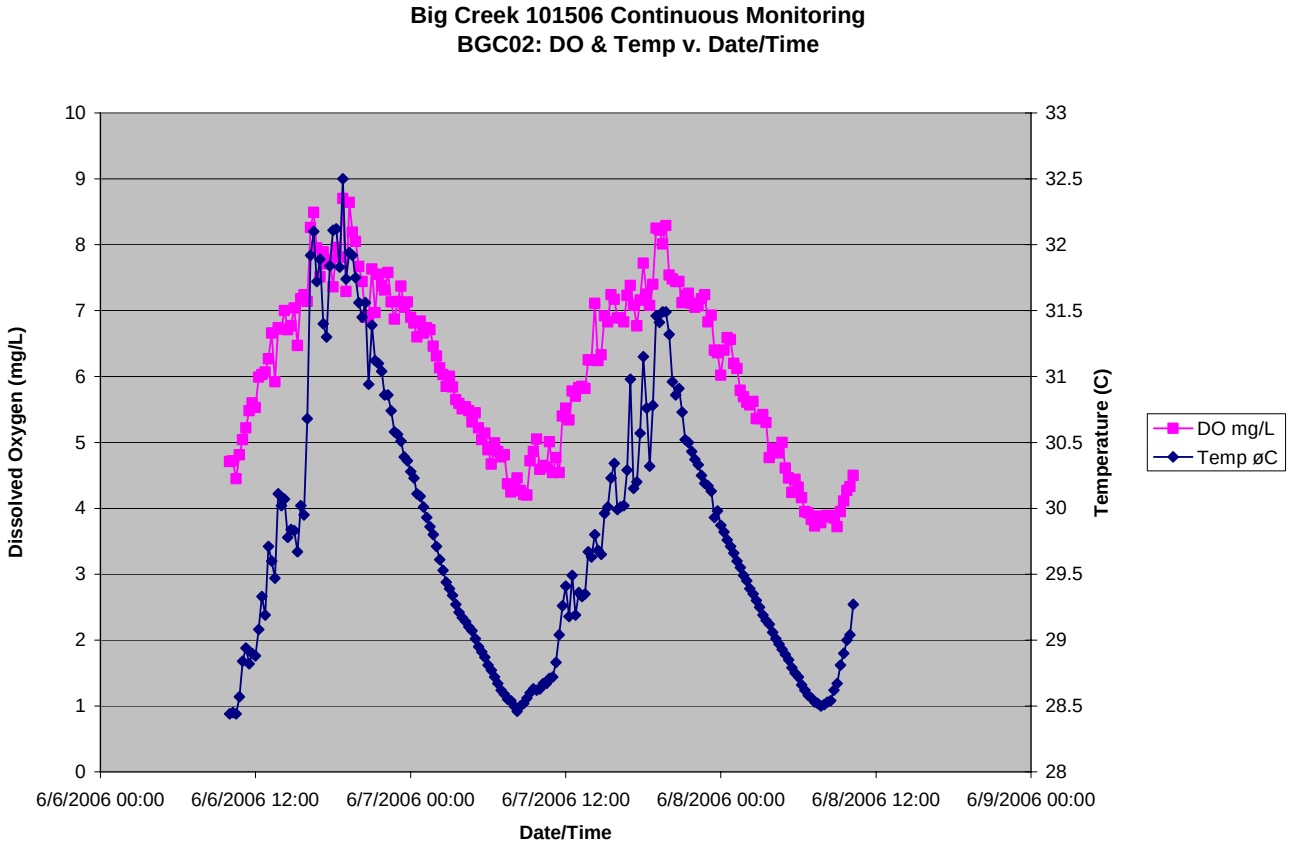
Date_	Time	Date+Time	Temp	pH	SpCond	DO PERCENT	DO	SALINITY
MMDDYY	HHMM	MMDDYYYY HHMM	øC	Units	æS/cm	Sat	mg/L	ppt
6/6/2006	10:15	6/6/2006 10:15	27.6	6.99	46.3	55.6	4.38	0.01
6/6/2006	10:30	6/6/2006 10:30	27.23	6.69	49.4	14.5	1.15	0.01
6/6/2006	10:45	6/6/2006 10:45	27.55	6.75	46.9	39.9	3.15	0.01
6/6/2006	11:00	6/6/2006 11:00	27.46	6.76	47.3	38.2	3.02	0.01
6/6/2006	11:15	6/6/2006 11:15	27.49	6.81	47	49.9	3.94	0.01
6/6/2006	11:30	6/6/2006 11:30	27.5	6.83	47.1	53.5	4.23	0.01
6/6/2006	11:45	6/6/2006 11:45	27.56	6.84	46.7	57.5	4.53	0.01
6/6/2006	12:00	6/6/2006 12:00	27.53	6.83	47.1	57.1	4.51	0.01
6/6/2006	12:15	6/6/2006 12:15	27.51	6.83	46.8	53.4	4.21	0.01
6/6/2006	12:30	6/6/2006 12:30	27.54	6.87	46.8	60.4	4.77	0.01
6/6/2006	12:45	6/6/2006 12:45	27.55	6.87	46.9	61.5	4.86	0.01
6/6/2006	13:00	6/6/2006 13:00	27.54	6.84	47	54.6	4.31	0.01
6/6/2006	13:15	6/6/2006 13:15	27.51	6.82	46.9	52	4.11	0.01
6/6/2006	13:30	6/6/2006 13:30	27.54	6.84	47	56.6	4.46	0.01
6/6/2006	13:45	6/6/2006 13:45	27.56	6.85	46.8	58.4	4.6	0.01
6/6/2006	14:00	6/6/2006 14:00	27.57	6.82	46.8	57.9	4.57	0.01
6/6/2006	14:15	6/6/2006 14:15	27.55	6.81	47.2	50.6	3.99	0.01
6/6/2006	14:30	6/6/2006 14:30	27.55	6.77	47.3	45.1	3.56	0.01
6/6/2006	14:45	6/6/2006 14:45	27.56	6.78	47.4	47.5	3.75	0.01
6/6/2006	15:00	6/6/2006 15:00	27.58	6.8	47.2	51	4.02	0.01
6/6/2006	15:15	6/6/2006 15:15	27.68	6.83	46.8	55.2	4.34	0.01
6/6/2006	15:30	6/6/2006 15:30	27.66	6.84	47.1	55	4.33	0.01
6/6/2006	15:45	6/6/2006 15:45	27.62	6.81	47	53.7	4.23	0.01
6/6/2006	16:00	6/6/2006 16:00	27.59	6.8	47.4	49.3	3.89	0.01
6/6/2006	16:15	6/6/2006 16:15	27.73	6.83	47	54.2	4.26	0.01
6/6/2006	16:30	6/6/2006 16:30	27.76	6.85	46.9	59.8	4.7	0.01
6/6/2006	16:45	6/6/2006 16:45	27.76	6.84	47.1	57.2	4.49	0.01
6/6/2006	17:00	6/6/2006 17:00	27.71	6.82	47.3	54.1	4.25	0.01
6/6/2006	17:15	6/6/2006 17:15	27.74	6.8	47	49.1	3.86	0.01
6/6/2006	17:30	6/6/2006 17:30	27.68	6.8	47.2	52.2	4.11	0.01
6/6/2006	17:45	6/6/2006 17:45	27.67	6.79	47.5	50.1	3.94	0.01
6/6/2006	18:00	6/6/2006 18:00	27.69	6.81	47.2	50	3.94	0.01
6/6/2006	18:15	6/6/2006 18:15	27.67	6.8	47.6	47.7	3.75	0.01
6/6/2006	18:30	6/6/2006 18:30	27.66	6.79	47.8	49.2	3.87	0.01
6/6/2006	18:45	6/6/2006 18:45	27.64	6.76	48.2	41.1	3.24	0.01
6/6/2006	19:00	6/6/2006 19:00	27.59	6.77	48.1	43.4	3.42	0.01
6/6/2006	19:15	6/6/2006 19:15	27.68	6.78	47.6	43.7	3.44	0.01
6/6/2006	19:30	6/6/2006 19:30	27.75	6.78	47.3	50.4	3.96	0.01
6/6/2006	19:45	6/6/2006 19:45	27.86	6.81	47.2	53.3	4.18	0.01
6/6/2006	20:00	6/6/2006 20:00	27.76	6.8	47.4	48.8	3.84	0.01

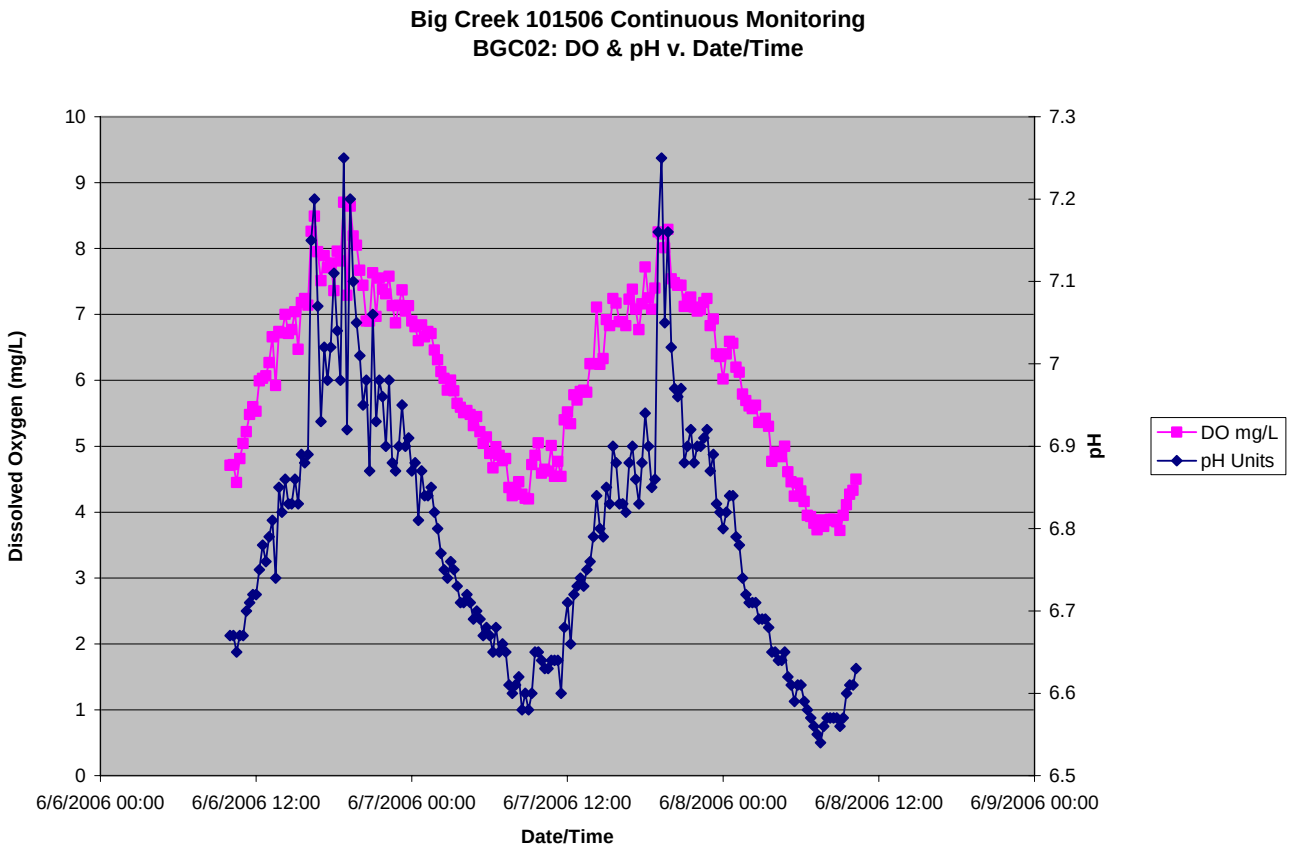
6/6/2006	20:15	6/6/2006 20:15	27.7	6.81	47.6	52.9	4.16	0.01
6/6/2006	20:30	6/6/2006 20:30	27.84	6.82	47.2	57.3	4.5	0.01
6/6/2006	20:45	6/6/2006 20:45	27.8	6.81	47.4	52.7	4.14	0.01
6/6/2006	21:00	6/6/2006 21:00	27.87	6.8	47.4	48.5	3.8	0.01
6/6/2006	21:15	6/6/2006 21:15	27.82	6.81	47.7	49.7	3.9	0.01
6/6/2006	21:30	6/6/2006 21:30	27.82	6.83	47.5	53.4	4.19	0.01
6/6/2006	21:45	6/6/2006 21:45	27.78	6.79	47.8	46.5	3.66	0.01
6/6/2006	22:00	6/6/2006 22:00	27.82	6.79	47.6	49	3.85	0.01
6/6/2006	22:15	6/6/2006 22:15	27.77	6.79	47.7	49.1	3.86	0.01
6/6/2006	22:30	6/6/2006 22:30	27.79	6.79	47.6	49.2	3.87	0.01
6/6/2006	22:45	6/6/2006 22:45	27.82	6.78	47.6	47.4	3.72	0.01
6/6/2006	23:00	6/6/2006 23:00	27.84	6.78	47.5	45.2	3.55	0.01
6/6/2006	23:15	6/6/2006 23:15	27.86	6.79	47.7	42.6	3.34	0.01
6/6/2006	23:30	6/6/2006 23:30	27.8	6.78	47.4	45.8	3.6	0.01
6/6/2006	23:45	6/6/2006 23:45	27.8	6.78	47.6	46.3	3.64	0.01
6/7/2006	0:00	6/7/2006 00:00	27.79	6.77	47.3	43.4	3.41	0.01
6/7/2006	0:15	6/7/2006 00:15	27.82	6.77	47.5	44.8	3.51	0.01
6/7/2006	0:30	6/7/2006 00:30	27.87	6.78	47.2	45.4	3.57	0.01
6/7/2006	0:45	6/7/2006 00:45	27.9	6.78	47.4	46.2	3.62	0.01
6/7/2006	1:00	6/7/2006 01:00	27.82	6.75	47.5	44.1	3.47	0.01
6/7/2006	1:15	6/7/2006 01:15	27.79	6.74	47.8	41.7	3.28	0.01
6/7/2006	1:30	6/7/2006 01:30	27.98	6.8	47.4	49.3	3.86	0.01
6/7/2006	1:45	6/7/2006 01:45	27.78	6.76	47.7	41	3.22	0.01
6/7/2006	2:00	6/7/2006 02:00	27.94	6.77	47.3	45.8	3.59	0.01
6/7/2006	2:15	6/7/2006 02:15	27.79	6.75	47.4	38.5	3.03	0.01
6/7/2006	2:30	6/7/2006 02:30	27.88	6.75	47.3	43.2	3.39	0.01
6/7/2006	2:45	6/7/2006 02:45	27.89	6.76	47.4	41.9	3.29	0.01
6/7/2006	3:00	6/7/2006 03:00	27.96	6.78	47.3	46.3	3.63	0.01
6/7/2006	3:15	6/7/2006 03:15	28.01	6.79	47.4	48.3	3.78	0.01
6/7/2006	3:30	6/7/2006 03:30	27.94	6.78	47.4	47.7	3.73	0.01
6/7/2006	3:45	6/7/2006 03:45	28.21	6.81	46.9	53.4	4.16	0.01
6/7/2006	4:00	6/7/2006 04:00	28.1	6.76	47	43.7	3.41	0.01
6/7/2006	4:15	6/7/2006 04:15	27.81	6.74	47.9	40.1	3.15	0.01
6/7/2006	4:30	6/7/2006 04:30	27.86	6.74	47.4	32.8	2.57	0.01
6/7/2006	4:45	6/7/2006 04:45	27.82	6.73	47.6	33.6	2.63	0.01
6/7/2006	5:00	6/7/2006 05:00	27.87	6.72	47.7	36.1	2.83	0.01
6/7/2006	5:15	6/7/2006 05:15	27.96	6.74	47.4	40.1	3.14	0.01
6/7/2006	5:30	6/7/2006 05:30	28.01	6.75	47.5	40.2	3.14	0.01
6/7/2006	5:45	6/7/2006 05:45	28	6.74	47.6	40.4	3.16	0.01
6/7/2006	6:00	6/7/2006 06:00	27.91	6.73	47.5	32.7	2.56	0.01
6/7/2006	6:15	6/7/2006 06:15	27.87	6.73	47.9	32.1	2.52	0.01
6/7/2006	6:30	6/7/2006 06:30	27.86	6.72	47.8	34.1	2.67	0.01
6/7/2006	6:45	6/7/2006 06:45	27.89	6.72	47.8	34.3	2.69	0.01
6/7/2006	7:00	6/7/2006 07:00	27.83	6.71	47.9	30.6	2.4	0.01
6/7/2006	7:15	6/7/2006 07:15	27.96	6.73	47.6	40.8	3.19	0.01
6/7/2006	7:30	6/7/2006 07:30	27.91	6.72	47.8	36.2	2.84	0.01
6/7/2006	7:45	6/7/2006 07:45	27.89	6.7	47.7	31.5	2.47	0.01
6/7/2006	8:00	6/7/2006 08:00	27.83	6.69	47.9	27.9	2.19	0.01
6/7/2006	8:15	6/7/2006 08:15	27.87	6.7	47.9	31.2	2.45	0.01

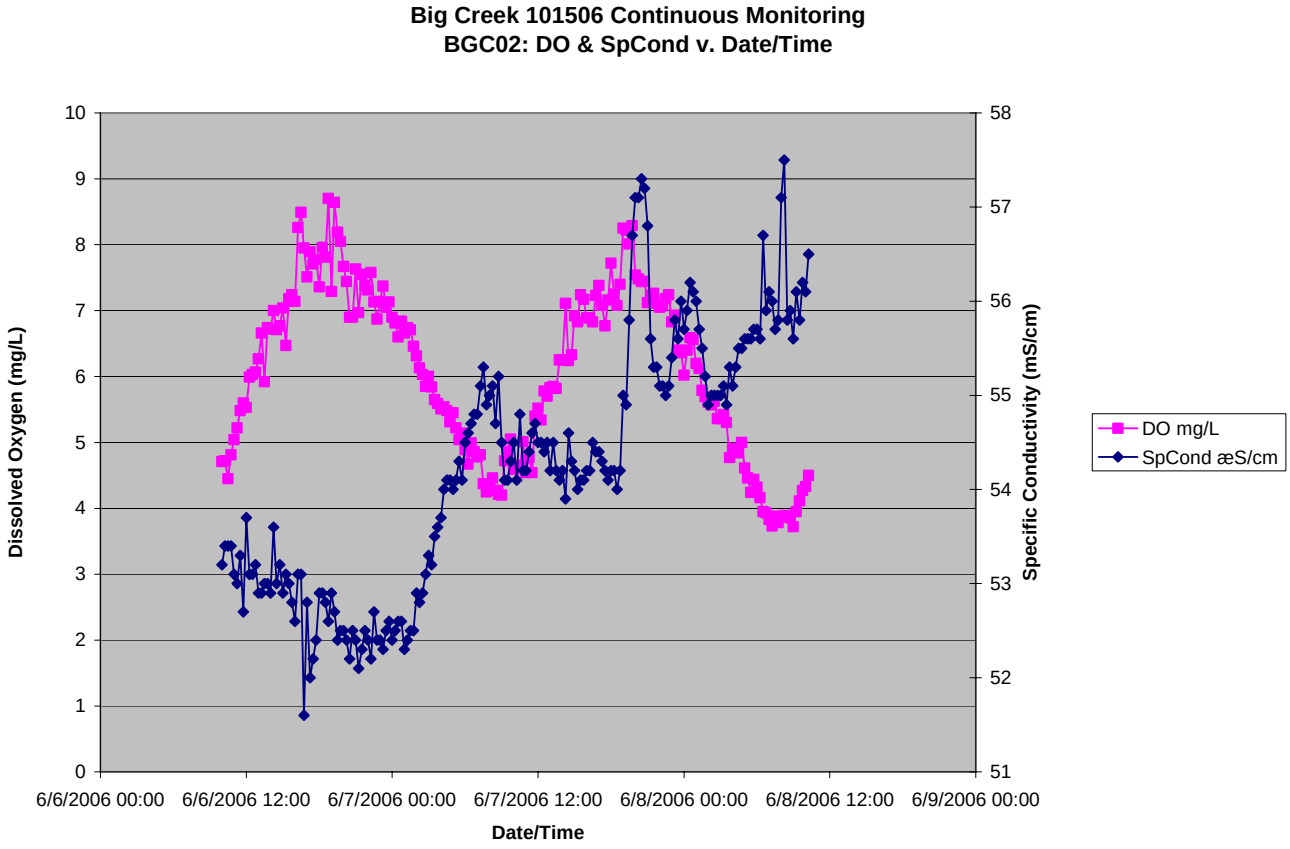
6/7/2006	8:30	6/7/2006 08:30	27.95	6.72	48	34.3	2.69	0.01
6/7/2006	8:45	6/7/2006 08:45	28.01	6.74	47.5	36.5	2.86	0.01
6/7/2006	9:00	6/7/2006 09:00	27.91	6.74	48	43.2	3.39	0.01
6/7/2006	9:15	6/7/2006 09:15	27.9	6.69	48.3	22.4	1.75	0.01
6/7/2006	9:30	6/7/2006 09:30	27.82	6.71	47.8	27.8	2.18	0.01
6/7/2006	9:45	6/7/2006 09:45	27.98	6.73	47.6	35.5	2.78	0.01
6/7/2006	10:00	6/7/2006 10:00	28	6.74	47.3	37.4	2.93	0.01
6/7/2006	10:15	6/7/2006 10:15	27.95	6.72	47.7	33.5	2.62	0.01
6/7/2006	10:30	6/7/2006 10:30	27.95	6.73	47.5	34.4	2.69	0.01
6/7/2006	10:45	6/7/2006 10:45	27.98	6.72	47.5	30.4	2.38	0.01
6/7/2006	11:00	6/7/2006 11:00	27.96	6.71	47.8	29.5	2.31	0.01
6/7/2006	11:15	6/7/2006 11:15	27.87	6.71	47.9	28.6	2.24	0.01
6/7/2006	11:30	6/7/2006 11:30	27.88	6.7	48.3	28.4	2.23	0.01
6/7/2006	11:45	6/7/2006 11:45	27.93	6.72	47.9	30.7	2.41	0.01
6/7/2006	12:00	6/7/2006 12:00	27.86	6.7	48.2	28	2.2	0.01
6/7/2006	12:15	6/7/2006 12:15	27.91	6.72	47.9	33.2	2.61	0.01
6/7/2006	12:30	6/7/2006 12:30	27.97	6.71	47.7	33.3	2.61	0.01
6/7/2006	12:45	6/7/2006 12:45	27.84	6.7	47.8	30.6	2.4	0.01
6/7/2006	13:00	6/7/2006 13:00	27.95	6.71	47.9	31.4	2.46	0.01
6/7/2006	13:15	6/7/2006 13:15	27.95	6.72	47.8	34.6	2.71	0.01
6/7/2006	13:30	6/7/2006 13:30	27.93	6.71	47.8	30.1	2.36	0.01
6/7/2006	13:45	6/7/2006 13:45	28.04	6.74	47.5	37.2	2.91	0.01
6/7/2006	14:00	6/7/2006 14:00	28.15	6.75	47.4	44.9	3.5	0.01
6/7/2006	14:15	6/7/2006 14:15	28.22	6.77	47.6	45.8	3.57	0.01
6/7/2006	14:30	6/7/2006 14:30	28.09	6.73	47.9	36.3	2.84	0.01
6/7/2006	14:45	6/7/2006 14:45	28.12	6.74	47.7	38.6	3.02	0.01
6/7/2006	15:00	6/7/2006 15:00	28.2	6.75	47.7	43	3.35	0.01
6/7/2006	15:15	6/7/2006 15:15	28.19	6.74	47.4	40.4	3.15	0.01
6/7/2006	15:30	6/7/2006 15:30	28.15	6.71	47.9	36.7	2.87	0.01
6/7/2006	15:45	6/7/2006 15:45	28.15	6.7	47.4	34.1	2.66	0.01
6/7/2006	16:00	6/7/2006 16:00	28.11	6.71	47.3	36.6	2.86	0.01
6/7/2006	16:15	6/7/2006 16:15	28.25	6.71	47.1	39.4	3.07	0.01
6/7/2006	16:30	6/7/2006 16:30	28.15	6.7	47.7	31.3	2.44	0.01
6/7/2006	16:45	6/7/2006 16:45	28.13	6.69	48	28	2.18	0.01
6/7/2006	17:00	6/7/2006 17:00	28.17	6.68	48.1	26.6	2.07	0.01
6/7/2006	17:15	6/7/2006 17:15	28.14	6.71	47.7	35.3	2.76	0.01
6/7/2006	17:30	6/7/2006 17:30	28.19	6.7	47.7	33.2	2.59	0.01
6/7/2006	17:45	6/7/2006 17:45	28.08	6.69	47.9	31.4	2.45	0.01
6/7/2006	18:00	6/7/2006 18:00	28.08	6.7	47.9	28.8	2.25	0.01
6/7/2006	18:15	6/7/2006 18:15	28.03	6.69	48	29.4	2.3	0.01
6/7/2006	18:30	6/7/2006 18:30	28.07	6.69	47.8	27.9	2.18	0.01
6/7/2006	18:45	6/7/2006 18:45	27.86	6.67	48.6	22.7	1.78	0.01
6/7/2006	19:00	6/7/2006 19:00	28.02	6.69	48.1	25.2	1.97	0.01
6/7/2006	19:15	6/7/2006 19:15	28.14	6.68	47.8	31.4	2.45	0.01
6/7/2006	19:30	6/7/2006 19:30	28.09	6.7	47.8	27.6	2.15	0.01
6/7/2006	19:45	6/7/2006 19:45	28.15	6.7	47.7	31.7	2.48	0.01
6/7/2006	20:00	6/7/2006 20:00	28.16	6.71	47.7	31.1	2.42	0.01
6/7/2006	20:15	6/7/2006 20:15	28.14	6.7	47.7	29.8	2.32	0.01
6/7/2006	20:30	6/7/2006 20:30	28.31	6.71	47.2	36.2	2.82	0.01

6/7/2006	20:45	6/7/2006 20:45	28.2	6.7	47.7	30.8	2.4	0.01
6/7/2006	21:00	6/7/2006 21:00	28.09	6.67	47.9	28.4	2.22	0.01
6/7/2006	21:15	6/7/2006 21:15	28.12	6.68	47.8	29	2.27	0.01
6/7/2006	21:30	6/7/2006 21:30	28.11	6.67	48.1	25	1.95	0.01
6/7/2006	21:45	6/7/2006 21:45	28.14	6.7	47.8	30.2	2.36	0.01
6/7/2006	22:00	6/7/2006 22:00	28.08	6.69	48.2	23.1	1.8	0.01
6/7/2006	22:15	6/7/2006 22:15	28.27	6.69	47.6	32.7	2.54	0.01
6/7/2006	22:30	6/7/2006 22:30	28.17	6.68	47.9	24.8	1.94	0.01
6/7/2006	22:45	6/7/2006 22:45	28.17	6.68	48	23.2	1.81	0.01
6/7/2006	23:00	6/7/2006 23:00	28.16	6.68	48	23.2	1.81	0.01
6/7/2006	23:15	6/7/2006 23:15	28.13	6.68	47.8	23.4	1.83	0.01
6/7/2006	23:30	6/7/2006 23:30	28.16	6.68	47.9	26	2.03	0.01
6/7/2006	23:45	6/7/2006 23:45	28.1	6.67	47.9	22.1	1.73	0.01
6/8/2006	0:00	6/8/2006 00:00	28.07	6.66	48	21.4	1.67	0.01
6/8/2006	0:15	6/8/2006 00:15	28.06	6.66	48	20.2	1.58	0.01
6/8/2006	0:30	6/8/2006 00:30	28.09	6.67	48	21	1.64	0.01
6/8/2006	0:45	6/8/2006 00:45	28.07	6.67	48	19.9	1.56	0.01
6/8/2006	1:00	6/8/2006 01:00	28.08	6.66	48	19.1	1.5	0.01
6/8/2006	1:15	6/8/2006 01:15	28.06	6.66	48.1	18.6	1.46	0.01
6/8/2006	1:30	6/8/2006 01:30	28.07	6.66	48	19	1.49	0.01
6/8/2006	1:45	6/8/2006 01:45	28.09	6.66	48.2	18.9	1.47	0.01
6/8/2006	2:00	6/8/2006 02:00	28.09	6.66	48	20.6	1.61	0.01
6/8/2006	2:15	6/8/2006 02:15	28.11	6.66	48.1	20.2	1.58	0.01
6/8/2006	2:30	6/8/2006 02:30	28.09	6.66	47.9	18.7	1.46	0.01
6/8/2006	2:45	6/8/2006 02:45	28.1	6.66	48.3	18.3	1.43	0.01
6/8/2006	3:00	6/8/2006 03:00	28.09	6.66	48.3	17.6	1.37	0.01
6/8/2006	3:15	6/8/2006 03:15	28.07	6.66	48.3	17.4	1.36	0.01
6/8/2006	3:30	6/8/2006 03:30	28.09	6.65	48.1	15	1.17	0.01
6/8/2006	3:45	6/8/2006 03:45	28.11	6.65	48	15.5	1.21	0.01
6/8/2006	4:00	6/8/2006 04:00	28.13	6.66	48.1	15.7	1.23	0.01
6/8/2006	4:15	6/8/2006 04:15	28.11	6.66	47.7	17.3	1.35	0.01
6/8/2006	4:30	6/8/2006 04:30	28.16	6.67	48.1	15.2	1.19	0.01
6/8/2006	4:45	6/8/2006 04:45	28.11	6.72	48.3	23.5	1.84	0.01
6/8/2006	5:00	6/8/2006 05:00	28.13	6.7	47.8	25.8	2.02	0.01
6/8/2006	5:15	6/8/2006 05:15	28.11	6.75	47	47.4	3.7	0.01
6/8/2006	5:30	6/8/2006 05:30	28.05	6.74	47.5	20.4	1.59	0.01
6/8/2006	5:45	6/8/2006 05:45	28.03	6.73	46.8	42.4	3.32	0.01
6/8/2006	6:00	6/8/2006 06:00	27.97	6.68	47.5	26	2.04	0.01
6/8/2006	6:15	6/8/2006 06:15	27.94	6.72	47.7	34.3	2.69	0.01
6/8/2006	6:30	6/8/2006 06:30	27.9	6.71	47.7	33.5	2.62	0.01
6/8/2006	6:45	6/8/2006 06:45	27.87	6.73	47.7	38.6	3.03	0.01
6/8/2006	7:00	6/8/2006 07:00	27.86	6.74	47	43.2	3.39	0.01
6/8/2006	7:15	6/8/2006 07:15	27.84	6.75	47.3	42.8	3.36	0.01
6/8/2006	7:30	6/8/2006 07:30	27.78	6.72	47.4	38.7	3.04	0.01
6/8/2006	7:45	6/8/2006 07:45	27.78	6.71	47.8	32	2.51	0.01
6/8/2006	8:00	6/8/2006 08:00	27.73	6.7	48	29.7	2.33	0.01
6/8/2006	8:15	6/8/2006 08:15	27.73	6.74	47.6	40.8	3.21	0.01
6/8/2006	8:30	6/8/2006 08:30	27.7	6.76	47.2	45.4	3.58	0.01
6/8/2006	8:45	6/8/2006 08:45	27.7	6.75	47.6	38.5	3.03	0.01

6/8/2006	9:00	6/8/2006 09:00	27.68	6.75	47.3	47.4	3.73	0.01
6/8/2006	9:15	6/8/2006 09:15	27.71	6.74	47.4	43.9	3.46	0.01
6/8/2006	9:30	6/8/2006 09:30	27.68	6.76	47.4	44.8	3.53	0.01
6/8/2006	9:45	6/8/2006 09:45	27.65	6.78	46.9	51	4.02	0.01
6/8/2006	10:00	6/8/2006 10:00	27.65	6.78	46.8	50.8	4	0.01
6/8/2006	10:15	6/8/2006 10:15	27.67	6.78	46.9	51.2	4.04	0.01
6/8/2006	10:30	6/8/2006 10:30	27.69	6.79	47.2	51.8	4.07	0.01
6/8/2006	10:45	6/8/2006 10:45	27.69	6.78	46.8	50.9	4.01	0.01
		Average	**27.89**	**6.74**	**47.584**	**38.09435897**	**2.99**	**0.01**
		Minimum	**27.23**	**6.65**	**46.3**	**14.5**	**1.15**	**0.01**
		Maximum	**28.31**	**6.99**	**49.4**	**61.5**	**4.86**	**0.01**


Big Creek 101506 Continuous Monitoring
BGC02: DO & Temp v. Date/Time
Dissolved Oxygen (mg/L)
Temperature (C)
Date/Time
10
9
8
7
6
5
4
3
2
1
0
33
32.5
32
31.5
31
30.5
30
29.5
29
28.5
28
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
Temp øC


Big Creek 101506 Continuous Monitoring
BGC02: DO & pH v. Date/Time
Dissolved Oxygen (mg/L)
pH
Date/Time
10
9
8
7
6
5
4
3
2
1
0
7.3
7.2
7.1
7
6.9
6.8
6.7
6.6
6.5
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
pH Units


Big Creek 101506 Continuous Monitoring
BGC02: DO & SpCond v. Date/Time
Dissolved Oxygen (mg/L)
Specific Conductivity (mS/cm)
Date/Time
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
SpCond æS/cm

Big Creek
Subsegment 101506
Site BGC02

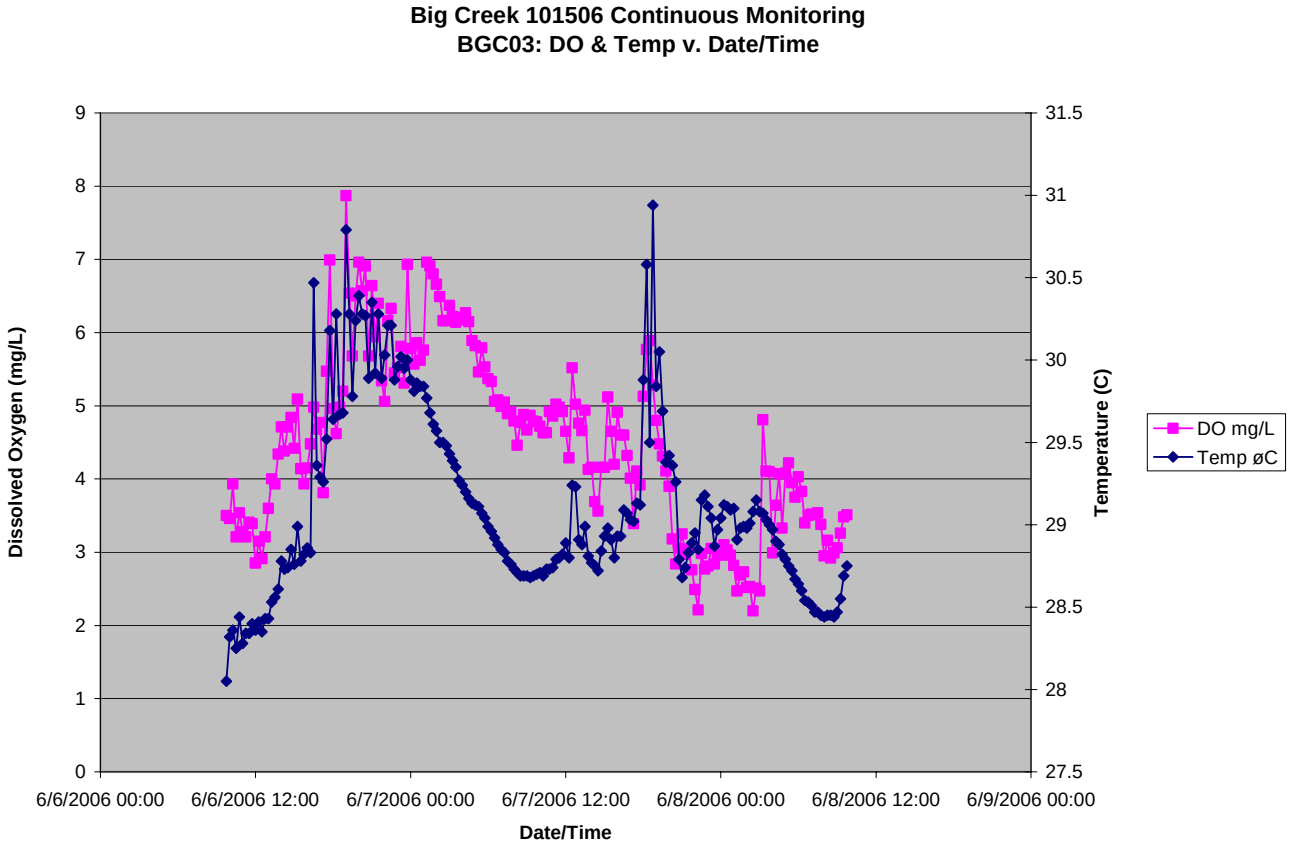
Date_	Time	Date+Time	Temp	pH	SpCond	DO PERCENT	DO	SALINITY
MMDDYY	HHMM	MMDDYYYY HHMM	øC	Units	æS/cm	Sat	mg/L	ppt
6/6/2006	10:00	6/6/2006 10:00	28.44	6.67	53.2	60.7	4.71	0.01
6/6/2006	10:15	6/6/2006 10:15	28.45	6.67	53.4	60.7	4.72	0.01
6/6/2006	10:30	6/6/2006 10:30	28.44	6.65	53.4	57.2	4.45	0.01
6/6/2006	10:45	6/6/2006 10:45	28.57	6.67	53.4	62.1	4.81	0.01
6/6/2006	11:00	6/6/2006 11:00	28.84	6.67	53.1	65.4	5.04	0.01
6/6/2006	11:15	6/6/2006 11:15	28.94	6.7	53	67.8	5.22	0.01
6/6/2006	11:30	6/6/2006 11:30	28.82	6.71	53.3	71	5.48	0.01
6/6/2006	11:45	6/6/2006 11:45	28.9	6.72	52.7	72.6	5.6	0.01
6/6/2006	12:00	6/6/2006 12:00	28.88	6.72	53.7	71.8	5.53	0.01
6/6/2006	12:15	6/6/2006 12:15	29.08	6.75	53.1	78	5.99	0.01
6/6/2006	12:30	6/6/2006 12:30	29.33	6.78	53.1	78.8	6.03	0.01
6/6/2006	12:45	6/6/2006 12:45	29.19	6.76	53.2	79.1	6.07	0.01
6/6/2006	13:00	6/6/2006 13:00	29.71	6.79	52.9	82.6	6.27	0.01
6/6/2006	13:15	6/6/2006 13:15	29.6	6.81	52.9	87.5	6.66	0.01
6/6/2006	13:30	6/6/2006 13:30	29.47	6.74	53	77.6	5.92	0.01
6/6/2006	13:45	6/6/2006 13:45	30.11	6.85	53	89.4	6.74	0.01
6/6/2006	14:00	6/6/2006 14:00	30.02	6.82	52.9	88.9	6.72	0.01
6/6/2006	14:15	6/6/2006 14:15	30.07	6.86	53.6	92.8	7	0.01
6/6/2006	14:30	6/6/2006 14:30	29.78	6.83	53	88.5	6.71	0.01
6/6/2006	14:45	6/6/2006 14:45	29.84	6.83	53.2	89.4	6.77	0.01
6/6/2006	15:00	6/6/2006 15:00	29.83	6.86	52.9	92.9	7.04	0.01
6/6/2006	15:15	6/6/2006 15:15	29.67	6.83	53.1	85.1	6.47	0.01
6/6/2006	15:30	6/6/2006 15:30	30.02	6.89	53	95.1	7.18	0.01
6/6/2006	15:45	6/6/2006 15:45	29.95	6.88	52.8	95.7	7.24	0.01
6/6/2006	16:00	6/6/2006 16:00	30.68	6.89	52.6	95.6	7.14	0.01
6/6/2006	16:15	6/6/2006 16:15	31.92	7.15	53.1	112.9	8.26	0.01
6/6/2006	16:30	6/6/2006 16:30	32.1	7.2	53.1	116.4	8.49	0.01
6/6/2006	16:45	6/6/2006 16:45	31.72	7.07	51.6	108.3	7.95	0.01
6/6/2006	17:00	6/6/2006 17:00	31.89	6.93	52.8	102.6	7.51	0.01
6/6/2006	17:15	6/6/2006 17:15	31.4	7.02	52	106.9	7.89	0.01
6/6/2006	17:30	6/6/2006 17:30	31.3	6.98	52.2	104.3	7.71	0.01
6/6/2006	17:45	6/6/2006 17:45	31.84	7.02	52.4	106.2	7.78	0.01
6/6/2006	18:00	6/6/2006 18:00	32.11	7.11	52.9	100.9	7.36	0.01
6/6/2006	18:15	6/6/2006 18:15	32.12	7.04	52.9	109.2	7.96	0.01
6/6/2006	18:30	6/6/2006 18:30	31.83	6.98	52.8	106.7	7.81	0.01
6/6/2006	18:45	6/6/2006 18:45	32.5	7.25	52.6	120.2	8.7	0.01
6/6/2006	19:00	6/6/2006 19:00	31.74	6.92	52.9	99.4	7.29	0.01
6/6/2006	19:15	6/6/2006 19:15	31.94	7.2	52.7	118.2	8.64	0.01
6/6/2006	19:30	6/6/2006 19:30	31.92	7.1	52.4	112	8.19	0.01
6/6/2006	19:45	6/6/2006 19:45	31.75	7.05	52.5	109.8	8.05	0.01

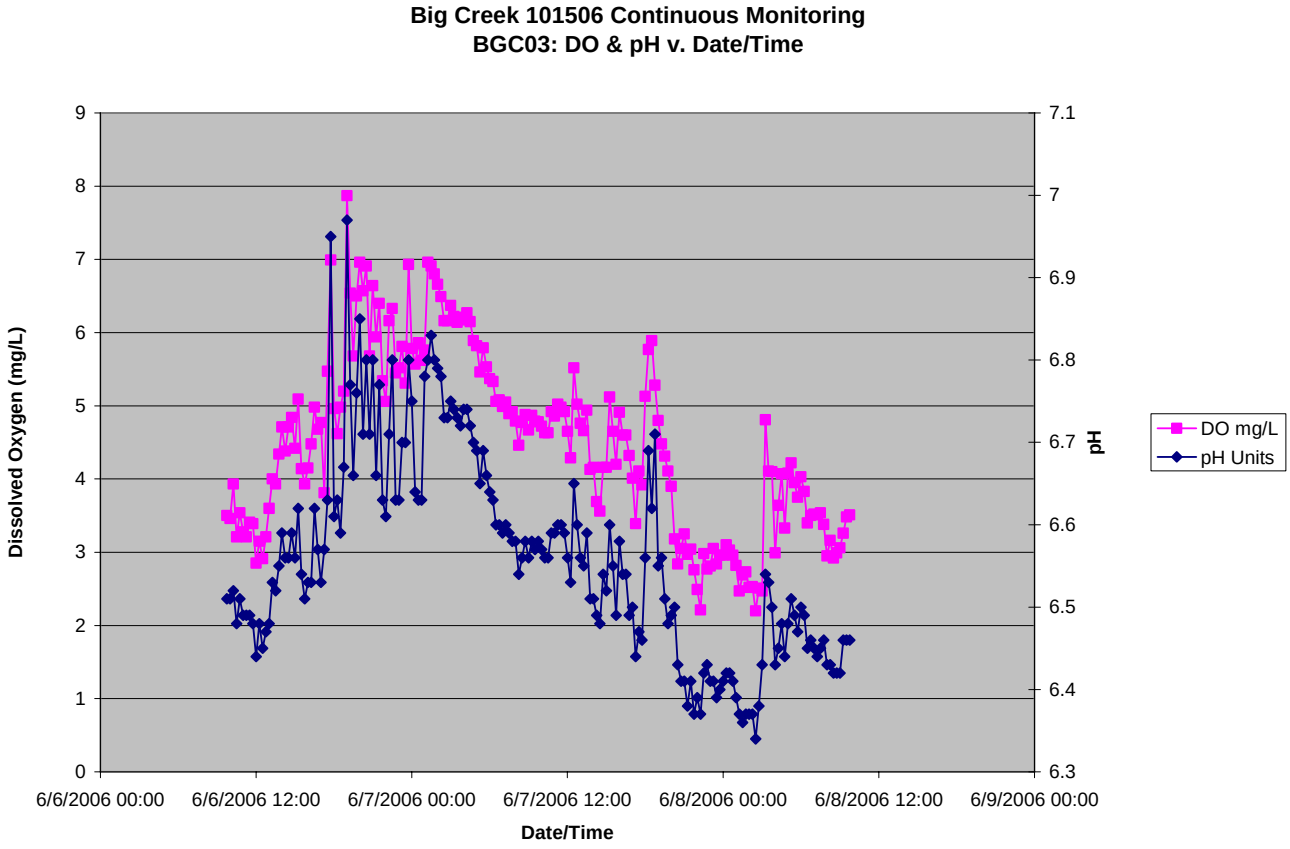
6/6/2006	20:00	6/6/2006 20:00	31.56	7.01	52.5	104.2	7.67	0.01
6/6/2006	20:15	6/6/2006 20:15	31.45	6.95	52.4	100.9	7.44	0.01
6/6/2006	20:30	6/6/2006 20:30	31.56	6.98	52.2	93.7	6.9	0.01
6/6/2006	20:45	6/6/2006 20:45	30.94	6.87	52.5	92.8	6.9	0.01
6/6/2006	21:00	6/6/2006 21:00	31.39	7.06	52.4	103.4	7.63	0.01
6/6/2006	21:15	6/6/2006 21:15	31.12	6.93	52.1	94	6.97	0.01
6/6/2006	21:30	6/6/2006 21:30	31.1	6.98	52.3	101.8	7.55	0.01
6/6/2006	21:45	6/6/2006 21:45	31.04	6.96	52.5	99.5	7.38	0.01
6/6/2006	22:00	6/6/2006 22:00	30.86	6.9	52.4	98.2	7.31	0.01
6/6/2006	22:15	6/6/2006 22:15	30.86	6.98	52.2	101.9	7.58	0.01
6/6/2006	22:30	6/6/2006 22:30	30.74	6.88	52.7	95.6	7.13	0.01
6/6/2006	22:45	6/6/2006 22:45	30.58	6.87	52.4	91.7	6.87	0.01
6/6/2006	23:00	6/6/2006 23:00	30.56	6.9	52.4	95.4	7.14	0.01
6/6/2006	23:15	6/6/2006 23:15	30.51	6.95	52.3	98.4	7.37	0.01
6/6/2006	23:30	6/6/2006 23:30	30.39	6.9	52.5	93.9	7.05	0.01
6/6/2006	23:45	6/6/2006 23:45	30.36	6.91	52.6	95	7.13	0.01
6/7/2006	0:00	6/7/2006 00:00	30.28	6.87	52.4	91.7	6.9	0.01
6/7/2006	0:15	6/7/2006 00:15	30.23	6.88	52.5	90.5	6.81	0.01
6/7/2006	0:30	6/7/2006 00:30	30.11	6.81	52.6	87.5	6.6	0.01
6/7/2006	0:45	6/7/2006 00:45	30.09	6.87	52.6	90.6	6.84	0.01
6/7/2006	1:00	6/7/2006 01:00	30.01	6.84	52.3	88.1	6.66	0.01
6/7/2006	1:15	6/7/2006 01:15	29.93	6.84	52.4	89.1	6.74	0.01
6/7/2006	1:30	6/7/2006 01:30	29.86	6.85	52.5	88.5	6.71	0.01
6/7/2006	1:45	6/7/2006 01:45	29.8	6.82	52.5	85.2	6.46	0.01
6/7/2006	2:00	6/7/2006 02:00	29.71	6.8	52.9	83	6.31	0.01
6/7/2006	2:15	6/7/2006 02:15	29.61	6.77	52.8	80.6	6.13	0.01
6/7/2006	2:30	6/7/2006 02:30	29.53	6.75	52.9	79.1	6.03	0.01
6/7/2006	2:45	6/7/2006 02:45	29.44	6.74	53.1	76.7	5.85	0.01
6/7/2006	3:00	6/7/2006 03:00	29.39	6.76	53.3	78.5	6	0.01
6/7/2006	3:15	6/7/2006 03:15	29.34	6.75	53.2	76.4	5.84	0.01
6/7/2006	3:30	6/7/2006 03:30	29.27	6.73	53.5	73.9	5.65	0.01
6/7/2006	3:45	6/7/2006 03:45	29.21	6.71	53.6	73	5.59	0.01
6/7/2006	4:00	6/7/2006 04:00	29.17	6.71	53.7	71.8	5.51	0.01
6/7/2006	4:15	6/7/2006 04:15	29.14	6.72	54	72.2	5.54	0.01
6/7/2006	4:30	6/7/2006 04:30	29.1	6.71	54.1	71.4	5.48	0.01
6/7/2006	4:45	6/7/2006 04:45	29.07	6.69	54.1	69.1	5.31	0.01
6/7/2006	5:00	6/7/2006 05:00	29.01	6.7	54	70.9	5.45	0.01
6/7/2006	5:15	6/7/2006 05:15	28.95	6.69	54.1	67.9	5.22	0.01
6/7/2006	5:30	6/7/2006 05:30	28.91	6.67	54.3	65.4	5.04	0.01
6/7/2006	5:45	6/7/2006 05:45	28.87	6.68	54.1	66.7	5.14	0.01
6/7/2006	6:00	6/7/2006 06:00	28.81	6.67	54.5	63.3	4.89	0.01
6/7/2006	6:15	6/7/2006 06:15	28.77	6.65	54.6	60.4	4.67	0.01
6/7/2006	6:30	6/7/2006 06:30	28.72	6.68	54.7	64.6	4.99	0.01
6/7/2006	6:45	6/7/2006 06:45	28.67	6.65	54.8	62.8	4.86	0.01
6/7/2006	7:00	6/7/2006 07:00	28.62	6.66	54.8	61.8	4.78	0.01
6/7/2006	7:15	6/7/2006 07:15	28.59	6.65	55.1	62.1	4.81	0.01
6/7/2006	7:30	6/7/2006 07:30	28.55	6.61	55.3	56.4	4.37	0.01
6/7/2006	7:45	6/7/2006 07:45	28.54	6.6	54.9	54.8	4.25	0.01
6/7/2006	8:00	6/7/2006 08:00	28.5	6.61	55	55.6	4.31	0.01

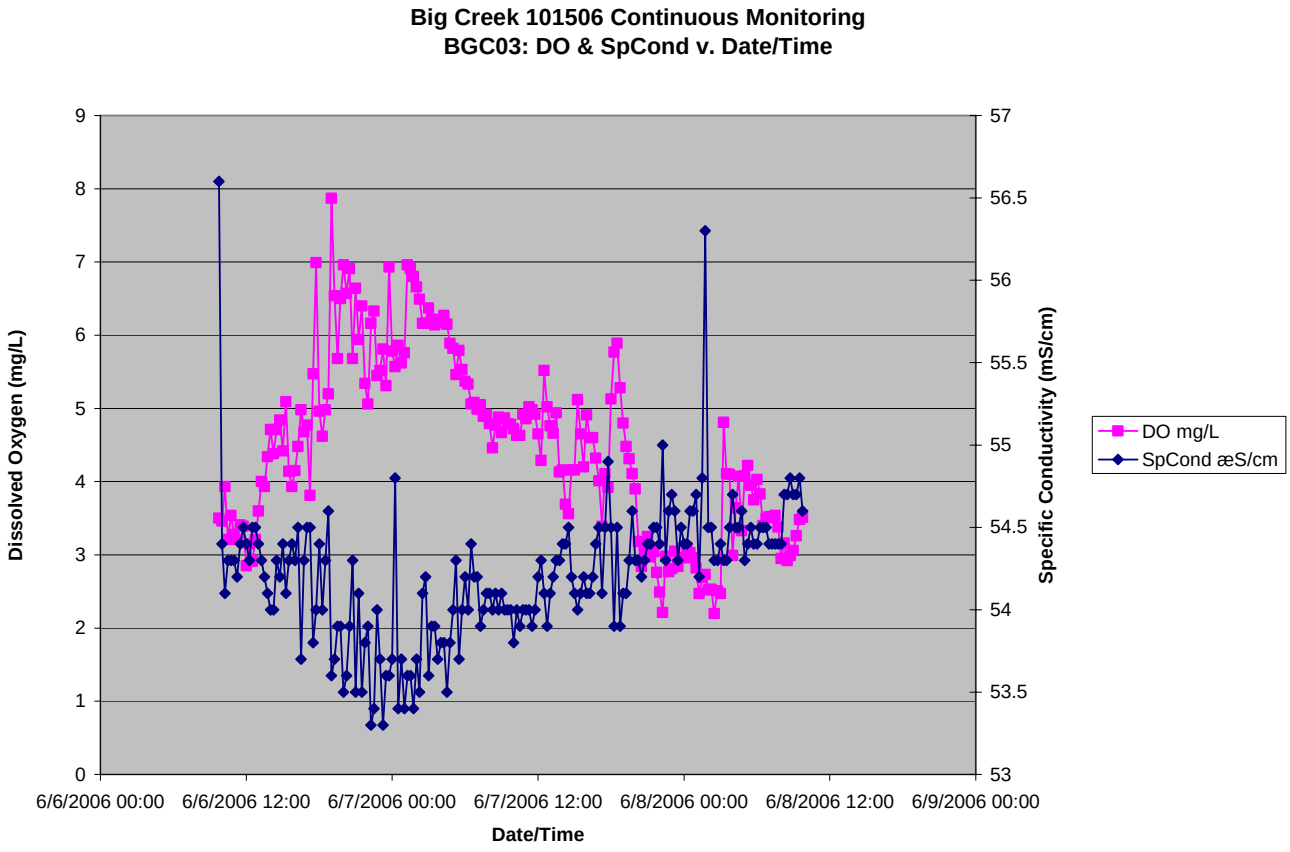
6/7/2006	8:15	6/7/2006 08:15	28.46	6.62	55.1	57.5	4.46	0.01
6/7/2006	8:30	6/7/2006 08:30	28.5	6.58	54.7	55	4.27	0.01
6/7/2006	8:45	6/7/2006 08:45	28.52	6.6	55.2	54.3	4.21	0.01
6/7/2006	9:00	6/7/2006 09:00	28.56	6.58	54.5	54.2	4.2	0.01
6/7/2006	9:15	6/7/2006 09:15	28.6	6.6	54.1	61	4.72	0.01
6/7/2006	9:30	6/7/2006 09:30	28.63	6.65	54.1	62.8	4.86	0.01
6/7/2006	9:45	6/7/2006 09:45	28.62	6.65	54.3	65.3	5.05	0.01
6/7/2006	10:00	6/7/2006 10:00	28.63	6.64	54.5	59.3	4.59	0.01
6/7/2006	10:15	6/7/2006 10:15	28.67	6.63	54.1	60.1	4.65	0.01
6/7/2006	10:30	6/7/2006 10:30	28.67	6.63	54.8	59.8	4.62	0.01
6/7/2006	10:45	6/7/2006 10:45	28.71	6.64	54.2	64.9	5.01	0.01
6/7/2006	11:00	6/7/2006 11:00	28.72	6.64	54.2	58.8	4.54	0.01
6/7/2006	11:15	6/7/2006 11:15	28.83	6.64	54.4	61.8	4.77	0.01
6/7/2006	11:30	6/7/2006 11:30	29.04	6.6	54.6	59.1	4.54	0.01
6/7/2006	11:45	6/7/2006 11:45	29.26	6.68	54.7	70.5	5.4	0.01
6/7/2006	12:00	6/7/2006 12:00	29.41	6.71	54.5	72.3	5.52	0.01
6/7/2006	12:15	6/7/2006 12:15	29.18	6.66	54.5	69.7	5.34	0.01
6/7/2006	12:30	6/7/2006 12:30	29.49	6.72	54.4	75.7	5.78	0.01
6/7/2006	12:45	6/7/2006 12:45	29.19	6.73	54.5	74.3	5.7	0.01
6/7/2006	13:00	6/7/2006 13:00	29.36	6.74	54.2	76.2	5.83	0.01
6/7/2006	13:15	6/7/2006 13:15	29.33	6.73	54.5	76.6	5.85	0.01
6/7/2006	13:30	6/7/2006 13:30	29.35	6.75	54.2	76.1	5.82	0.01
6/7/2006	13:45	6/7/2006 13:45	29.67	6.76	54.1	82.2	6.25	0.01
6/7/2006	14:00	6/7/2006 14:00	29.63	6.79	54.2	82.2	6.25	0.01
6/7/2006	14:15	6/7/2006 14:15	29.8	6.84	53.9	93.7	7.11	0.01
6/7/2006	14:30	6/7/2006 14:30	29.68	6.8	54.6	82.1	6.24	0.01
6/7/2006	14:45	6/7/2006 14:45	29.65	6.79	54.3	83.2	6.33	0.01
6/7/2006	15:00	6/7/2006 15:00	29.96	6.85	54.2	91.5	6.92	0.01
6/7/2006	15:15	6/7/2006 15:15	30.01	6.83	54	90.4	6.83	0.01
6/7/2006	15:30	6/7/2006 15:30	30.23	6.9	54.1	96.2	7.24	0.01
6/7/2006	15:45	6/7/2006 15:45	30.34	6.88	54.1	95.4	7.17	0.01
6/7/2006	16:00	6/7/2006 16:00	29.99	6.83	54.2	91.2	6.89	0.01
6/7/2006	16:15	6/7/2006 16:15	30.01	6.83	54.2	91.2	6.89	0.01
6/7/2006	16:30	6/7/2006 16:30	30.02	6.82	54.5	90.4	6.83	0.01
6/7/2006	16:45	6/7/2006 16:45	30.29	6.88	54.4	96.2	7.23	0.01
6/7/2006	17:00	6/7/2006 17:00	30.98	6.9	54.4	99.3	7.38	0.01
6/7/2006	17:15	6/7/2006 17:15	30.15	6.86	54.3	93.9	7.08	0.01
6/7/2006	17:30	6/7/2006 17:30	30.2	6.83	54.2	89.9	6.77	0.01
6/7/2006	17:45	6/7/2006 17:45	30.57	6.88	54.1	95.6	7.16	0.01
6/7/2006	18:00	6/7/2006 18:00	31.15	6.94	54.2	104.1	7.72	0.01
6/7/2006	18:15	6/7/2006 18:15	30.76	6.9	54.2	97.2	7.25	0.01
6/7/2006	18:30	6/7/2006 18:30	30.32	6.85	54	94.2	7.08	0.01
6/7/2006	18:45	6/7/2006 18:45	30.78	6.86	54.2	99.2	7.4	0.01
6/7/2006	19:00	6/7/2006 19:00	31.46	7.16	55	112	8.25	0.01
6/7/2006	19:15	6/7/2006 19:15	31.41	7.25	54.9	111.4	8.22	0.01
6/7/2006	19:30	6/7/2006 19:30	31.49	7.05	55.8	108.8	8.01	0.01
6/7/2006	19:45	6/7/2006 19:45	31.49	7.16	56.7	112.6	8.29	0.01
6/7/2006	20:00	6/7/2006 20:00	31.32	7.02	57.1	102.1	7.54	0.02
6/7/2006	20:15	6/7/2006 20:15	30.96	6.97	57.1	100.6	7.48	0.02

6/7/2006	20:30	6/7/2006 20:30	30.86	6.96	57.3	99.9	7.44	0.02
6/7/2006	20:45	6/7/2006 20:45	30.91	6.97	57.2	99.9	7.44	0.02
6/7/2006	21:00	6/7/2006 21:00	30.73	6.88	56.8	95.4	7.12	0.01
6/7/2006	21:15	6/7/2006 21:15	30.52	6.9	55.6	96.6	7.23	0.01
6/7/2006	21:30	6/7/2006 21:30	30.5	6.92	55.3	96.8	7.26	0.01
6/7/2006	21:45	6/7/2006 21:45	30.43	6.88	55.3	94.8	7.11	0.01
6/7/2006	22:00	6/7/2006 22:00	30.37	6.9	55.1	93.9	7.05	0.01
6/7/2006	22:15	6/7/2006 22:15	30.33	6.9	55.1	94.1	7.07	0.01
6/7/2006	22:30	6/7/2006 22:30	30.25	6.91	55	95.5	7.18	0.01
6/7/2006	22:45	6/7/2006 22:45	30.19	6.92	55.1	96.2	7.24	0.01
6/7/2006	23:00	6/7/2006 23:00	30.17	6.87	55.4	90.6	6.83	0.01
6/7/2006	23:15	6/7/2006 23:15	30.13	6.89	55.8	91.9	6.93	0.01
6/7/2006	23:30	6/7/2006 23:30	29.93	6.83	55.6	84.6	6.4	0.01
6/7/2006	23:45	6/7/2006 23:45	29.98	6.82	56	84.2	6.36	0.01
6/8/2006	0:00	6/8/2006 00:00	29.87	6.8	55.7	79.5	6.02	0.01
6/8/2006	0:15	6/8/2006 00:15	29.82	6.82	55.9	84.4	6.4	0.01
6/8/2006	0:30	6/8/2006 00:30	29.76	6.84	56.2	86.8	6.59	0.01
6/8/2006	0:45	6/8/2006 00:45	29.71	6.84	56.1	86.4	6.56	0.01
6/8/2006	1:00	6/8/2006 01:00	29.66	6.79	56	81.6	6.2	0.01
6/8/2006	1:15	6/8/2006 01:15	29.6	6.78	55.7	80.4	6.12	0.01
6/8/2006	1:30	6/8/2006 01:30	29.55	6.74	55.5	76.1	5.79	0.01
6/8/2006	1:45	6/8/2006 01:45	29.49	6.72	55.2	74.6	5.69	0.01
6/8/2006	2:00	6/8/2006 02:00	29.45	6.71	54.9	73.5	5.61	0.01
6/8/2006	2:15	6/8/2006 02:15	29.39	6.71	55	72.9	5.57	0.01
6/8/2006	2:30	6/8/2006 02:30	29.35	6.71	55	73.5	5.62	0.01
6/8/2006	2:45	6/8/2006 02:45	29.3	6.69	55	70.1	5.36	0.01
6/8/2006	3:00	6/8/2006 03:00	29.25	6.69	55	70.1	5.36	0.01
6/8/2006	3:15	6/8/2006 03:15	29.19	6.69	55.1	70.6	5.42	0.01
6/8/2006	3:30	6/8/2006 03:30	29.15	6.68	54.9	69.1	5.3	0.01
6/8/2006	3:45	6/8/2006 03:45	29.12	6.65	55.3	62.1	4.77	0.01
6/8/2006	4:00	6/8/2006 04:00	29.06	6.65	55.1	64	4.91	0.01
6/8/2006	4:15	6/8/2006 04:15	29.01	6.64	55.3	63.2	4.86	0.01
6/8/2006	4:30	6/8/2006 04:30	28.97	6.64	55.5	62.9	4.84	0.01
6/8/2006	4:45	6/8/2006 04:45	28.93	6.65	55.5	64.9	5	0.01
6/8/2006	5:00	6/8/2006 05:00	28.89	6.62	55.6	59.8	4.61	0.01
6/8/2006	5:15	6/8/2006 05:15	28.85	6.61	55.6	57.9	4.46	0.01
6/8/2006	5:30	6/8/2006 05:30	28.79	6.59	55.6	54.9	4.24	0.01
6/8/2006	5:45	6/8/2006 05:45	28.75	6.61	55.7	57.4	4.44	0.01
6/8/2006	6:00	6/8/2006 06:00	28.72	6.61	55.7	55.8	4.32	0.01
6/8/2006	6:15	6/8/2006 06:15	28.66	6.59	55.6	53.7	4.16	0.01
6/8/2006	6:30	6/8/2006 06:30	28.62	6.58	56.7	51.1	3.95	0.01
6/8/2006	6:45	6/8/2006 06:45	28.58	6.57	55.9	50.7	3.93	0.01
6/8/2006	7:00	6/8/2006 07:00	28.56	6.56	56.1	49.5	3.83	0.01
6/8/2006	7:15	6/8/2006 07:15	28.53	6.55	56	48.1	3.73	0.01
6/8/2006	7:30	6/8/2006 07:30	28.52	6.54	55.7	50	3.88	0.01
6/8/2006	7:45	6/8/2006 07:45	28.5	6.56	55.8	48.7	3.78	0.01
6/8/2006	8:00	6/8/2006 08:00	28.51	6.57	57.1	49.9	3.87	0.02
6/8/2006	8:15	6/8/2006 08:15	28.53	6.57	57.5	50.2	3.89	0.02
6/8/2006	8:30	6/8/2006 08:30	28.54	6.57	55.8	50.2	3.89	0.01

6/8/2006	8:45	6/8/2006 08:45	28.62	6.57	55.9	49.7	3.85	0.01
6/8/2006	9:00	6/8/2006 09:00	28.67	6.56	55.6	48.1	3.72	0.01
6/8/2006	9:15	6/8/2006 09:15	28.81	6.57	56.1	51.2	3.95	0.01
6/8/2006	9:30	6/8/2006 09:30	28.9	6.6	55.8	53.4	4.11	0.01
6/8/2006	9:45	6/8/2006 09:45	29	6.61	56.2	55.6	4.27	0.01
6/8/2006	10:00	6/8/2006 10:00	29.04	6.61	56.1	56.4	4.33	0.01
6/8/2006	10:15	6/8/2006 10:15	29.27	6.63	56.5	58.8	4.5	0.01
		Average	**29.78**	**6.79**	**54.229**	**80.22989691**	**6.07**	**0.010309**
		Minimum	**28.44**	**6.54**	**51.6**	**48.1**	**3.72**	**0.01**
		Maximum	**32.5**	**7.25**	**57.5**	**120.2**	**8.7**	**0.02**


Big Creek 101506 Continuous Monitoring
BGC03: DO & Temp v. Date/Time
Dissolved Oxygen (mg/L)
Temperature (C)
Date/Time
0
1
2
3
4
5
6
7
8
9
27.5
28
28.5
29
29.5
30
30.5
31
31.5
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
Temp øC


Big Creek 101506 Continuous Monitoring
BGC03: DO & pH v. Date/Time
Dissolved Oxygen (mg/L)
pH
Date/Time
0
1
2
3
4
5
6
7
8
9
6.3
6.4
6.5
6.6
6.7
6.8
6.9
7
7.1
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
pH Units


Big Creek 101506 Continuous Monitoring
BGC03: DO & SpCond v. Date/Time
Dissolved Oxygen (mg/L)
Specific Conductivity (mS/cm)
Date/Time
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
SpCond æS/cm

Big Creek
Subsegment 101506
Site BGC03

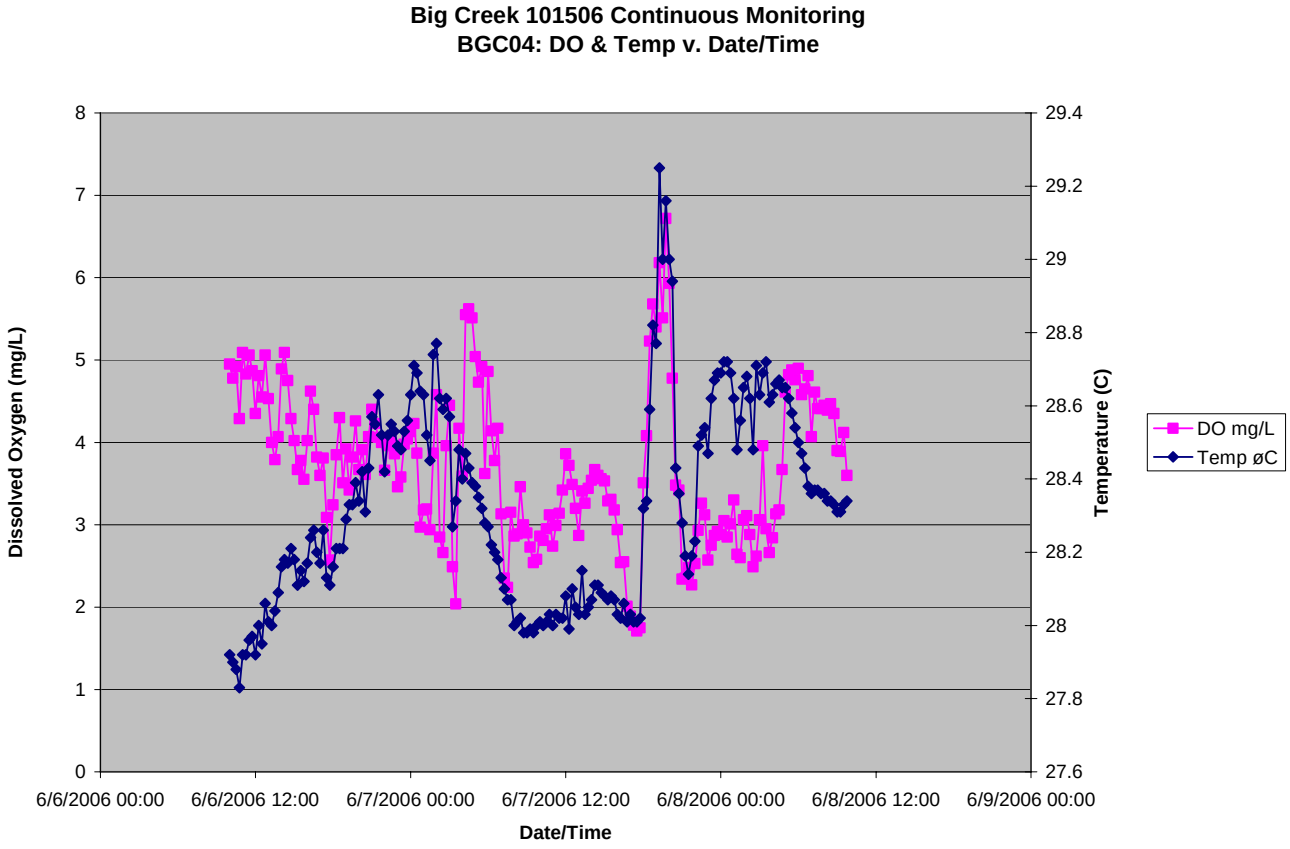
Date_	Time	Date+Time	Temp	pH	SpCond	DO PERCENT	DO	SALINITY
MMDDYY	HHMM	MMDDYYYY HHMM	øC	Units	æS/cm	Sat	mg/L	ppt
6/6/2006	9:45	6/6/2006 09:45	28.05	6.51	56.6	44.7	3.5	0.01
6/6/2006	10:00	6/6/2006 10:00	28.32	6.51	54.4	44.4	3.46	0.01
6/6/2006	10:15	6/6/2006 10:15	28.36	6.52	54.1	50.5	3.93	0.01
6/6/2006	10:30	6/6/2006 10:30	28.25	6.48	54.3	41.2	3.21	0.01
6/6/2006	10:45	6/6/2006 10:45	28.44	6.51	54.3	45.6	3.54	0.01
6/6/2006	11:00	6/6/2006 11:00	28.28	6.49	54.3	42.1	3.28	0.01
6/6/2006	11:15	6/6/2006 11:15	28.34	6.49	54.2	41.3	3.21	0.01
6/6/2006	11:30	6/6/2006 11:30	28.34	6.49	54.4	43.8	3.41	0.01
6/6/2006	11:45	6/6/2006 11:45	28.4	6.48	54.5	43.6	3.39	0.01
6/6/2006	12:00	6/6/2006 12:00	28.36	6.44	54.4	36.7	2.85	0.01
6/6/2006	12:15	6/6/2006 12:15	28.41	6.48	54.3	40.5	3.15	0.01
6/6/2006	12:30	6/6/2006 12:30	28.35	6.45	54.5	37.4	2.91	0.01
6/6/2006	12:45	6/6/2006 12:45	28.43	6.47	54.5	41.4	3.21	0.01
6/6/2006	13:00	6/6/2006 13:00	28.43	6.48	54.4	46.4	3.6	0.01
6/6/2006	13:15	6/6/2006 13:15	28.53	6.53	54.3	51.6	4	0.01
6/6/2006	13:30	6/6/2006 13:30	28.56	6.52	54.2	50.7	3.93	0.01
6/6/2006	13:45	6/6/2006 13:45	28.61	6.55	54.1	56	4.34	0.01
6/6/2006	14:00	6/6/2006 14:00	28.78	6.59	54	61	4.71	0.01
6/6/2006	14:15	6/6/2006 14:15	28.73	6.56	54	56.7	4.38	0.01
6/6/2006	14:30	6/6/2006 14:30	28.74	6.56	54.3	61	4.71	0.01
6/6/2006	14:45	6/6/2006 14:45	28.85	6.59	54.2	62.7	4.84	0.01
6/6/2006	15:00	6/6/2006 15:00	28.76	6.56	54.4	57.3	4.42	0.01
6/6/2006	15:15	6/6/2006 15:15	28.99	6.62	54.1	66.1	5.09	0.01
6/6/2006	15:30	6/6/2006 15:30	28.78	6.54	54.3	53.6	4.14	0.01
6/6/2006	15:45	6/6/2006 15:45	28.82	6.51	54.4	51	3.93	0.01
6/6/2006	16:00	6/6/2006 16:00	28.86	6.53	54.3	53.8	4.15	0.01
6/6/2006	16:15	6/6/2006 16:15	28.83	6.53	54.5	58.1	4.48	0.01
6/6/2006	16:30	6/6/2006 16:30	30.47	6.62	53.7	66.4	4.98	0.01
6/6/2006	16:45	6/6/2006 16:45	29.36	6.57	54.3	61.2	4.68	0.01
6/6/2006	17:00	6/6/2006 17:00	29.29	6.53	54.5	62.3	4.77	0.01
6/6/2006	17:15	6/6/2006 17:15	29.26	6.57	54.5	49.8	3.81	0.01
6/6/2006	17:30	6/6/2006 17:30	29.52	6.63	53.8	71.7	5.47	0.01
6/6/2006	17:45	6/6/2006 17:45	30.18	6.95	54	92.7	6.99	0.01
6/6/2006	18:00	6/6/2006 18:00	29.64	6.61	54.4	65.2	4.96	0.01
6/6/2006	18:15	6/6/2006 18:15	30.28	6.63	54	61.4	4.62	0.01
6/6/2006	18:30	6/6/2006 18:30	29.67	6.59	54.3	65.6	4.98	0.01
6/6/2006	18:45	6/6/2006 18:45	29.68	6.67	54.6	68.4	5.2	0.01
6/6/2006	19:00	6/6/2006 19:00	30.79	6.97	53.6	105.6	7.87	0.01
6/6/2006	19:15	6/6/2006 19:15	30.28	6.77	53.7	87	6.54	0.01
6/6/2006	19:30	6/6/2006 19:30	29.78	6.66	53.9	74.9	5.68	0.01

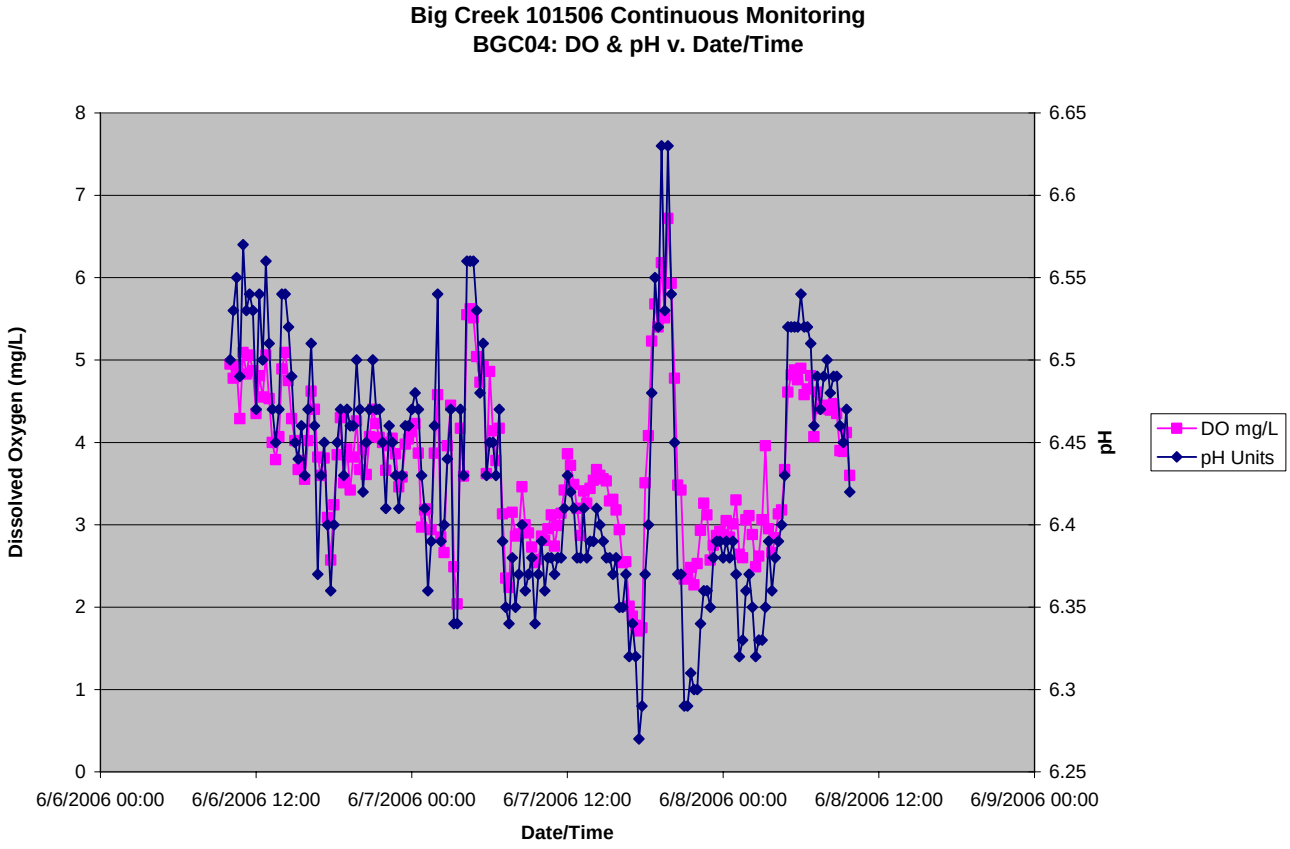
6/6/2006	19:45	6/6/2006 19:45	30.24	6.76	53.9	86.4	6.5	0.01
6/6/2006	20:00	6/6/2006 20:00	30.39	6.85	53.5	92.6	6.96	0.01
6/6/2006	20:15	6/6/2006 20:15	30.28	6.71	53.6	87.4	6.57	0.01
6/6/2006	20:30	6/6/2006 20:30	30.27	6.8	53.9	91.9	6.91	0.01
6/6/2006	20:45	6/6/2006 20:45	29.89	6.71	54.3	75	5.68	0.01
6/6/2006	21:00	6/6/2006 21:00	30.35	6.8	53.5	88.3	6.64	0.01
6/6/2006	21:15	6/6/2006 21:15	29.92	6.66	54.1	78.5	5.94	0.01
6/6/2006	21:30	6/6/2006 21:30	30.28	6.77	53.5	85.1	6.4	0.01
6/6/2006	21:45	6/6/2006 21:45	29.89	6.63	53.8	70.5	5.34	0.01
6/6/2006	22:00	6/6/2006 22:00	30.03	6.61	53.9	67	5.06	0.01
6/6/2006	22:15	6/6/2006 22:15	30.21	6.71	53.3	81.8	6.16	0.01
6/6/2006	22:30	6/6/2006 22:30	30.21	6.8	53.4	84	6.33	0.01
6/6/2006	22:45	6/6/2006 22:45	29.88	6.63	54	71.9	5.45	0.01
6/6/2006	23:00	6/6/2006 23:00	29.96	6.63	53.7	73	5.52	0.01
6/6/2006	23:15	6/6/2006 23:15	30.02	6.7	53.3	76.8	5.81	0.01
6/6/2006	23:30	6/6/2006 23:30	29.95	6.7	53.6	70.1	5.31	0.01
6/6/2006	23:45	6/6/2006 23:45	30	6.8	53.6	91.7	6.93	0.01
6/7/2006	0:00	6/7/2006 00:00	29.88	6.75	53.7	76.3	5.78	0.01
6/7/2006	0:15	6/7/2006 00:15	29.81	6.64	54.8	73.4	5.57	0.01
6/7/2006	0:30	6/7/2006 00:30	29.86	6.63	53.4	77.3	5.86	0.01
6/7/2006	0:45	6/7/2006 00:45	29.84	6.63	53.7	74.1	5.62	0.01
6/7/2006	1:00	6/7/2006 01:00	29.84	6.78	53.4	76	5.76	0.01
6/7/2006	1:15	6/7/2006 01:15	29.77	6.8	53.6	91.7	6.96	0.01
6/7/2006	1:30	6/7/2006 01:30	29.68	6.83	53.6	91	6.91	0.01
6/7/2006	1:45	6/7/2006 01:45	29.61	6.8	53.4	89.4	6.8	0.01
6/7/2006	2:00	6/7/2006 02:00	29.57	6.79	53.7	87.5	6.66	0.01
6/7/2006	2:15	6/7/2006 02:15	29.5	6.78	53.5	85.1	6.49	0.01
6/7/2006	2:30	6/7/2006 02:30	29.5	6.73	54.1	80.8	6.16	0.01
6/7/2006	2:45	6/7/2006 02:45	29.48	6.73	54.2	80.7	6.16	0.01
6/7/2006	3:00	6/7/2006 03:00	29.43	6.75	53.6	83.5	6.37	0.01
6/7/2006	3:15	6/7/2006 03:15	29.39	6.74	53.9	81.4	6.22	0.01
6/7/2006	3:30	6/7/2006 03:30	29.35	6.73	53.9	80.4	6.14	0.01
6/7/2006	3:45	6/7/2006 03:45	29.27	6.72	53.7	80.5	6.17	0.01
6/7/2006	4:00	6/7/2006 04:00	29.24	6.74	53.8	81.1	6.21	0.01
6/7/2006	4:15	6/7/2006 04:15	29.2	6.74	53.8	81.9	6.27	0.01
6/7/2006	4:30	6/7/2006 04:30	29.16	6.72	53.5	80.2	6.15	0.01
6/7/2006	4:45	6/7/2006 04:45	29.13	6.7	53.8	76.8	5.89	0.01
6/7/2006	5:00	6/7/2006 05:00	29.12	6.69	54	75.9	5.82	0.01
6/7/2006	5:15	6/7/2006 05:15	29.11	6.65	54.3	71.1	5.46	0.01
6/7/2006	5:30	6/7/2006 05:30	29.07	6.69	53.7	75.3	5.79	0.01
6/7/2006	5:45	6/7/2006 05:45	29.04	6.66	54	72	5.53	0.01
6/7/2006	6:00	6/7/2006 06:00	28.99	6.64	54.2	69.7	5.37	0.01
6/7/2006	6:15	6/7/2006 06:15	28.96	6.63	54	69.2	5.33	0.01
6/7/2006	6:30	6/7/2006 06:30	28.92	6.6	54.4	65.7	5.06	0.01
6/7/2006	6:45	6/7/2006 06:45	28.88	6.6	54.2	65.9	5.08	0.01
6/7/2006	7:00	6/7/2006 07:00	28.85	6.59	54.2	64.7	4.99	0.01
6/7/2006	7:15	6/7/2006 07:15	28.83	6.6	53.9	65.5	5.05	0.01
6/7/2006	7:30	6/7/2006 07:30	28.78	6.59	54	63.4	4.89	0.01
6/7/2006	7:45	6/7/2006 07:45	28.76	6.58	54.1	63.8	4.92	0.01

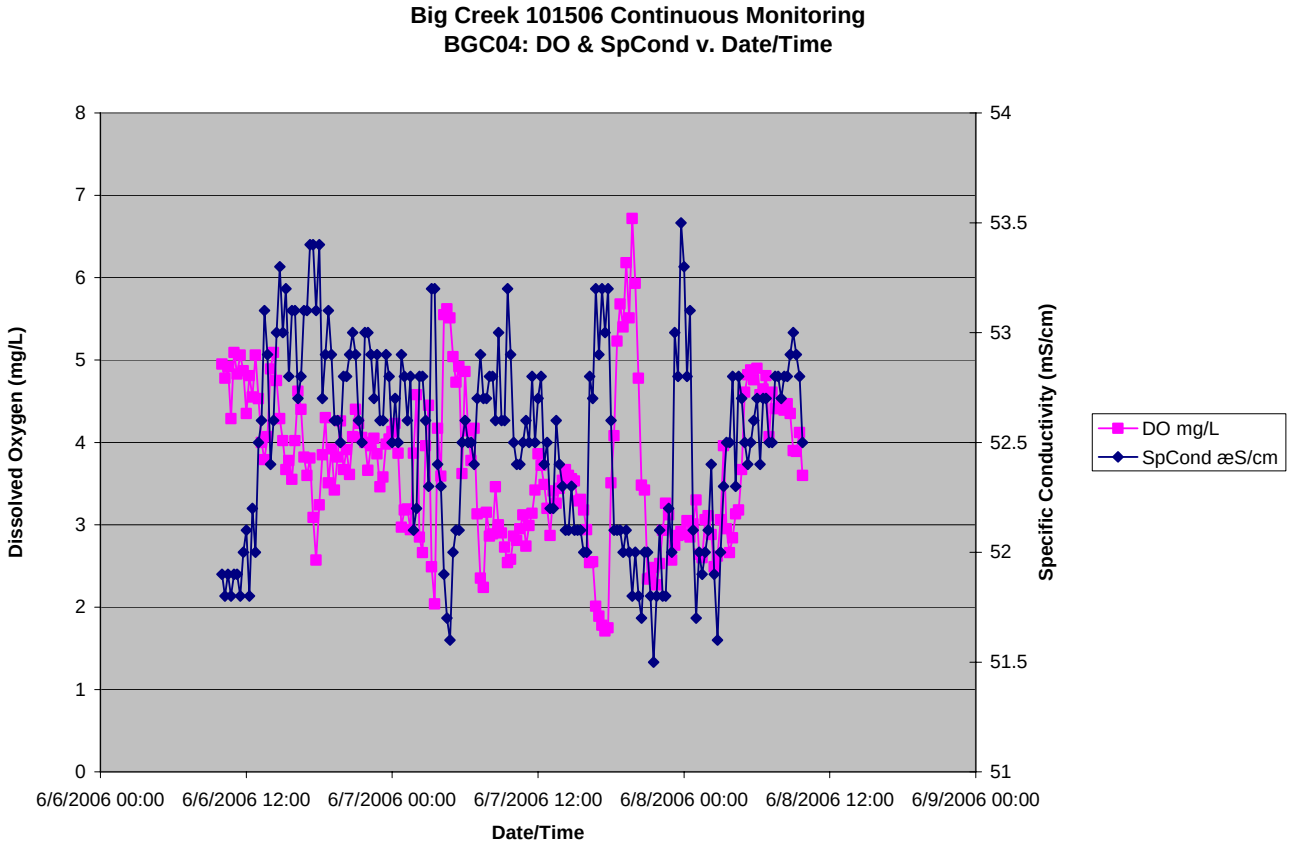
6/7/2006	8:00	6/7/2006 08:00	28.73	6.58	54.1	62	4.79	0.01
6/7/2006	8:15	6/7/2006 08:15	28.71	6.54	54	57.7	4.46	0.01
6/7/2006	8:30	6/7/2006 08:30	28.69	6.56	54.1	61.7	4.77	0.01
6/7/2006	8:45	6/7/2006 08:45	28.69	6.58	54	63.1	4.88	0.01
6/7/2006	9:00	6/7/2006 09:00	28.69	6.56	54.1	60.3	4.67	0.01
6/7/2006	9:15	6/7/2006 09:15	28.68	6.58	54	63	4.87	0.01
6/7/2006	9:30	6/7/2006 09:30	28.69	6.57	54	61.9	4.79	0.01
6/7/2006	9:45	6/7/2006 09:45	28.7	6.58	54	61.8	4.78	0.01
6/7/2006	10:00	6/7/2006 10:00	28.71	6.57	53.8	61	4.72	0.01
6/7/2006	10:15	6/7/2006 10:15	28.69	6.56	54	59.9	4.63	0.01
6/7/2006	10:30	6/7/2006 10:30	28.73	6.56	53.9	59.9	4.63	0.01
6/7/2006	10:45	6/7/2006 10:45	28.73	6.59	54	63.6	4.92	0.01
6/7/2006	11:00	6/7/2006 11:00	28.74	6.59	54	63	4.86	0.01
6/7/2006	11:15	6/7/2006 11:15	28.79	6.6	54	65	5.02	0.01
6/7/2006	11:30	6/7/2006 11:30	28.8	6.6	53.9	64.5	4.98	0.01
6/7/2006	11:45	6/7/2006 11:45	28.82	6.59	54	63.8	4.92	0.01
6/7/2006	12:00	6/7/2006 12:00	28.89	6.56	54.2	60.3	4.65	0.01
6/7/2006	12:15	6/7/2006 12:15	28.8	6.53	54.3	55.6	4.29	0.01
6/7/2006	12:30	6/7/2006 12:30	29.24	6.65	54.1	72.1	5.52	0.01
6/7/2006	12:45	6/7/2006 12:45	29.23	6.6	53.9	65.5	5.02	0.01
6/7/2006	13:00	6/7/2006 13:00	28.91	6.56	54.1	61.8	4.76	0.01
6/7/2006	13:15	6/7/2006 13:15	28.88	6.55	54.2	60.5	4.66	0.01
6/7/2006	13:30	6/7/2006 13:30	28.99	6.59	54.3	64.3	4.94	0.01
6/7/2006	13:45	6/7/2006 13:45	28.81	6.51	54.3	53.5	4.13	0.01
6/7/2006	14:00	6/7/2006 14:00	28.77	6.51	54.4	53.8	4.16	0.01
6/7/2006	14:15	6/7/2006 14:15	28.75	6.49	54.4	47.7	3.69	0.01
6/7/2006	14:30	6/7/2006 14:30	28.72	6.48	54.5	46.1	3.56	0.01
6/7/2006	14:45	6/7/2006 14:45	28.84	6.54	54.2	54	4.16	0.01
6/7/2006	15:00	6/7/2006 15:00	28.93	6.52	54.1	54.1	4.16	0.01
6/7/2006	15:15	6/7/2006 15:15	28.98	6.6	54	66.5	5.12	0.01
6/7/2006	15:30	6/7/2006 15:30	28.91	6.55	54.1	60.4	4.65	0.01
6/7/2006	15:45	6/7/2006 15:45	28.8	6.49	54.2	54.4	4.2	0.01
6/7/2006	16:00	6/7/2006 16:00	28.93	6.58	54.1	63.8	4.91	0.01
6/7/2006	16:15	6/7/2006 16:15	28.93	6.54	54.1	59.8	4.6	0.01
6/7/2006	16:30	6/7/2006 16:30	29.09	6.54	54.2	60	4.6	0.01
6/7/2006	16:45	6/7/2006 16:45	29.07	6.49	54.4	56.3	4.32	0.01
6/7/2006	17:00	6/7/2006 17:00	29.03	6.5	54.5	52.2	4.01	0.01
6/7/2006	17:15	6/7/2006 17:15	29.02	6.44	54.1	44	3.39	0.01
6/7/2006	17:30	6/7/2006 17:30	29.13	6.47	54.5	53.5	4.11	0.01
6/7/2006	17:45	6/7/2006 17:45	29.12	6.46	54.9	51	3.92	0.01
6/7/2006	18:00	6/7/2006 18:00	29.88	6.56	54.5	67.7	5.13	0.01
6/7/2006	18:15	6/7/2006 18:15	30.58	6.69	53.9	77.1	5.77	0.01
6/7/2006	18:30	6/7/2006 18:30	29.5	6.62	54.5	77.3	5.89	0.01
6/7/2006	18:45	6/7/2006 18:45	30.94	6.71	53.9	70.9	5.28	0.01
6/7/2006	19:00	6/7/2006 19:00	29.84	6.55	54.1	63.3	4.8	0.01
6/7/2006	19:15	6/7/2006 19:15	30.05	6.56	54.1	59.3	4.48	0.01
6/7/2006	19:30	6/7/2006 19:30	29.69	6.51	54.3	56.7	4.31	0.01
6/7/2006	19:45	6/7/2006 19:45	29.38	6.48	54.6	53.8	4.11	0.01
6/7/2006	20:00	6/7/2006 20:00	29.42	6.49	54.3	51.1	3.9	0.01

6/7/2006	20:15	6/7/2006 20:15	29.36	6.5	54.3	41.6	3.18	0.01
6/7/2006	20:30	6/7/2006 20:30	29.26	6.43	54.2	37.1	2.84	0.01
6/7/2006	20:45	6/7/2006 20:45	28.79	6.41	54.3	39.6	3.05	0.01
6/7/2006	21:00	6/7/2006 21:00	28.68	6.41	54.4	42	3.25	0.01
6/7/2006	21:15	6/7/2006 21:15	28.74	6.38	54.4	38.5	2.97	0.01
6/7/2006	21:30	6/7/2006 21:30	28.83	6.41	54.5	39.4	3.04	0.01
6/7/2006	21:45	6/7/2006 21:45	28.89	6.37	54.5	35.9	2.76	0.01
6/7/2006	22:00	6/7/2006 22:00	28.95	6.39	54.4	32.4	2.49	0.01
6/7/2006	22:15	6/7/2006 22:15	28.85	6.37	55	28.6	2.21	0.01
6/7/2006	22:30	6/7/2006 22:30	29.15	6.42	54.3	38.9	2.98	0.01
6/7/2006	22:45	6/7/2006 22:45	29.18	6.43	54.6	36.2	2.77	0.01
6/7/2006	23:00	6/7/2006 23:00	29.11	6.41	54.7	36.7	2.81	0.01
6/7/2006	23:15	6/7/2006 23:15	29.04	6.41	54.6	39.7	3.05	0.01
6/7/2006	23:30	6/7/2006 23:30	28.87	6.39	54.3	36.9	2.84	0.01
6/7/2006	23:45	6/7/2006 23:45	28.97	6.4	54.5	38.4	2.96	0.01
6/8/2006	0:00	6/8/2006 00:00	29.04	6.41	54.4	38.5	2.96	0.01
6/8/2006	0:15	6/8/2006 00:15	29.12	6.42	54.4	40.4	3.1	0.01
6/8/2006	0:30	6/8/2006 00:30	29.11	6.42	54.6	39.5	3.03	0.01
6/8/2006	0:45	6/8/2006 00:45	29.09	6.41	54.6	38.6	2.96	0.01
6/8/2006	1:00	6/8/2006 01:00	29.1	6.39	54.7	36.7	2.82	0.01
6/8/2006	1:15	6/8/2006 01:15	28.91	6.37	54.2	32	2.47	0.01
6/8/2006	1:30	6/8/2006 01:30	28.98	6.36	54.8	35	2.69	0.01
6/8/2006	1:45	6/8/2006 01:45	28.99	6.37	56.3	35.5	2.73	0.01
6/8/2006	2:00	6/8/2006 02:00	28.98	6.37	54.5	32.8	2.52	0.01
6/8/2006	2:15	6/8/2006 02:15	29.01	6.37	54.5	32.9	2.53	0.01
6/8/2006	2:30	6/8/2006 02:30	29.08	6.34	54.3	28.6	2.2	0.01
6/8/2006	2:45	6/8/2006 02:45	29.15	6.38	54.3	32.7	2.51	0.01
6/8/2006	3:00	6/8/2006 03:00	29.08	6.43	54.4	32.1	2.47	0.01
6/8/2006	3:15	6/8/2006 03:15	29.07	6.54	54.3	62.7	4.81	0.01
6/8/2006	3:30	6/8/2006 03:30	29.03	6.53	54.3	53.4	4.11	0.01
6/8/2006	3:45	6/8/2006 03:45	29	6.5	54.5	53.3	4.1	0.01
6/8/2006	4:00	6/8/2006 04:00	28.97	6.43	54.7	38.9	2.99	0.01
6/8/2006	4:15	6/8/2006 04:15	28.9	6.45	54.5	47.2	3.64	0.01
6/8/2006	4:30	6/8/2006 04:30	28.88	6.48	54.5	52.8	4.07	0.01
6/8/2006	4:45	6/8/2006 04:45	28.82	6.44	54.6	43.1	3.33	0.01
6/8/2006	5:00	6/8/2006 05:00	28.79	6.48	54.3	52.8	4.08	0.01
6/8/2006	5:15	6/8/2006 05:15	28.75	6.51	54.4	54.6	4.22	0.01
6/8/2006	5:30	6/8/2006 05:30	28.72	6.49	54.5	51.1	3.95	0.01
6/8/2006	5:45	6/8/2006 05:45	28.67	6.47	54.4	48.5	3.75	0.01
6/8/2006	6:00	6/8/2006 06:00	28.64	6.5	54.4	52.1	4.03	0.01
6/8/2006	6:15	6/8/2006 06:15	28.6	6.49	54.5	49.5	3.83	0.01
6/8/2006	6:30	6/8/2006 06:30	28.54	6.45	54.5	43.9	3.4	0.01
6/8/2006	6:45	6/8/2006 06:45	28.53	6.46	54.5	45.1	3.5	0.01
6/8/2006	7:00	6/8/2006 07:00	28.51	6.45	54.4	45.4	3.52	0.01
6/8/2006	7:15	6/8/2006 07:15	28.47	6.44	54.4	45.2	3.51	0.01
6/8/2006	7:30	6/8/2006 07:30	28.47	6.45	54.4	45.6	3.54	0.01
6/8/2006	7:45	6/8/2006 07:45	28.45	6.46	54.4	43.5	3.38	0.01
6/8/2006	8:00	6/8/2006 08:00	28.44	6.43	54.4	38	2.95	0.01
6/8/2006	8:15	6/8/2006 08:15	28.45	6.43	54.7	40.7	3.16	0.01

6/8/2006	8:30	6/8/2006 08:30	28.45	6.42	54.7	37.6	2.92	0.01
6/8/2006	8:45	6/8/2006 08:45	28.44	6.42	54.8	38.5	2.99	0.01
6/8/2006	9:00	6/8/2006 09:00	28.47	6.42	54.7	39.4	3.06	0.01
6/8/2006	9:15	6/8/2006 09:15	28.55	6.46	54.7	42.1	3.26	0.01
6/8/2006	9:30	6/8/2006 09:30	28.69	6.46	54.8	45	3.48	0.01
6/8/2006	9:45	6/8/2006 09:45	28.75	6.46	54.6	45.4	3.51	0.01
		Average	**29.11**	**6.56**	**54.206**	**58.59015544**	**4.49**	**0.01**
		Minimum	**28.05**	**6.34**	**53.3**	**28.6**	**2.2**	**0.01**
		Maximum	**30.94**	**6.97**	**56.6**	**105.6**	**7.87**	**0.01**


Big Creek 101506 Continuous Monitoring
BGC04: DO & Temp v. Date/Time
Dissolved Oxygen (mg/L)
Temperature (C)
Date/Time
0
1
2
3
4
5
6
7
8
27.6
27.8
28
28.2
28.4
28.6
28.8
29
29.2
29.4
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
Temp øC


Big Creek 101506 Continuous Monitoring
BGC04: DO & pH v. Date/Time
Dissolved Oxygen (mg/L)
pH
Date/Time
0
1
2
3
4
5
6
7
8
6.25
6.3
6.35
6.4
6.45
6.5
6.55
6.6
6.65
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
pH Units


Big Creek 101506 Continuous Monitoring
BGC04: DO & SpCond v. Date/Time
Dissolved Oxygen (mg/L)
Specific Conductivity (mS/cm)
Date/Time
0
1
2
3
4
5
6
7
8
51
51.5
52
52.5
53
53.5
54
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
SpCond æS/cm

Big Creek Subsegment 101506 Site BGC04

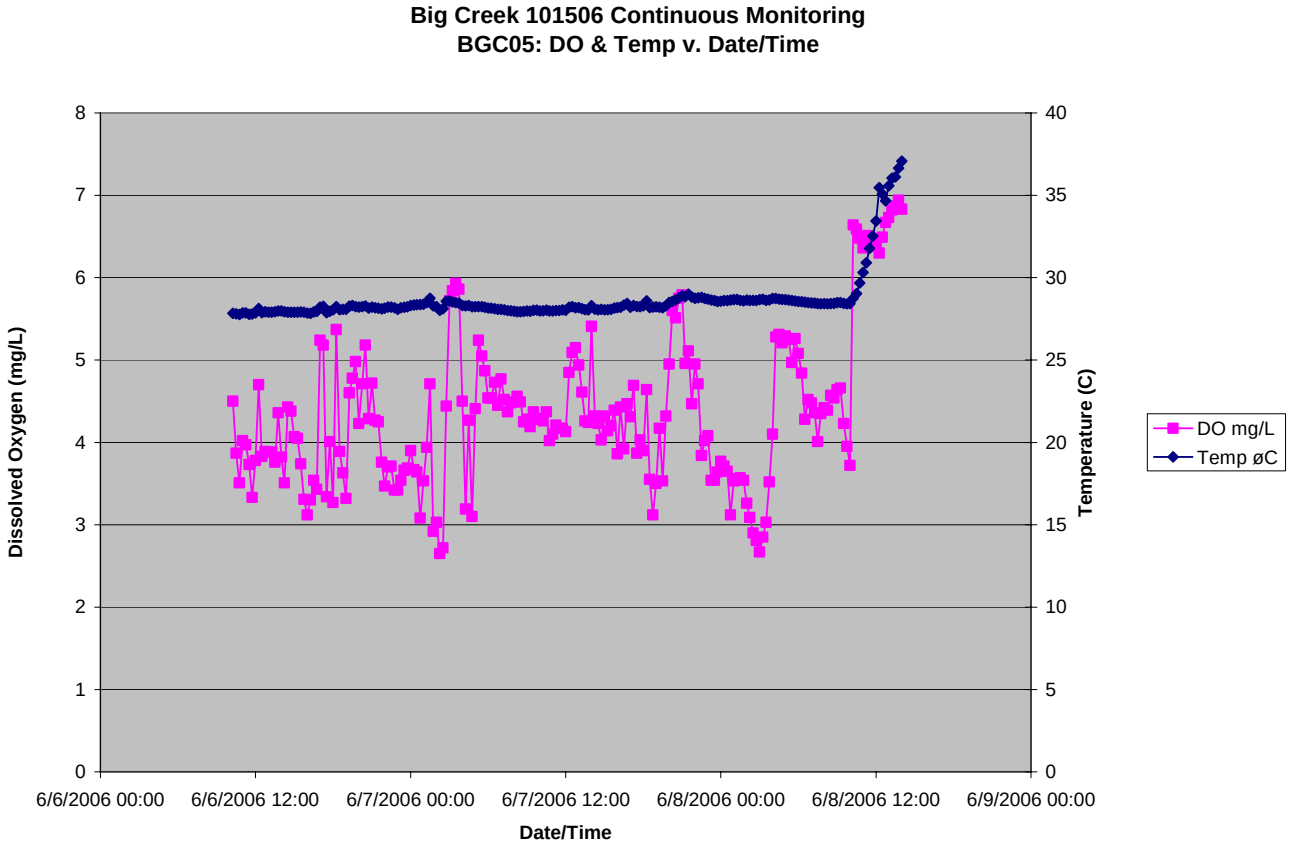
Date_ MMDDYY	Time HHMM	Date+Time MMDDYYYY HHMM	Temp øC	pH Units	SpCond æS/cm	DO PERCENT Sat	DO mg/L	SALINITY ppt
6/6/2006	10:00	6/6/2006 10:00	27.92	6.5	51.9	63.2	4.95	0.01
6/6/2006	10:15	6/6/2006 10:15	27.9	6.53	51.8	61	4.78	0.01
6/6/2006	10:30	6/6/2006 10:30	27.88	6.55	51.9	62.7	4.92	0.01
6/6/2006	10:45	6/6/2006 10:45	27.83	6.49	51.8	54.7	4.29	0.01
6/6/2006	11:00	6/6/2006 11:00	27.92	6.57	51.9	65	5.09	0.01
6/6/2006	11:15	6/6/2006 11:15	27.92	6.53	51.9	61.6	4.83	0.01
6/6/2006	11:30	6/6/2006 11:30	27.96	6.54	51.8	64.6	5.06	0.01
6/6/2006	11:45	6/6/2006 11:45	27.97	6.53	52	62.2	4.87	0.01
6/6/2006	12:00	6/6/2006 12:00	27.92	6.47	52.1	55.5	4.35	0.01
6/6/2006	12:15	6/6/2006 12:15	28	6.54	51.8	61.5	4.81	0.01
6/6/2006	12:30	6/6/2006 12:30	27.95	6.5	52.2	58.1	4.55	0.01
6/6/2006	12:45	6/6/2006 12:45	28.06	6.56	52	64.7	5.06	0.01
6/6/2006	13:00	6/6/2006 13:00	28.01	6.51	52.5	57.9	4.53	0.01
6/6/2006	13:15	6/6/2006 13:15	28	6.47	52.6	51.2	4	0.01
6/6/2006	13:30	6/6/2006 13:30	28.04	6.45	53.1	48.5	3.79	0.01
6/6/2006	13:45	6/6/2006 13:45	28.09	6.47	52.9	52	4.07	0.01
6/6/2006	14:00	6/6/2006 14:00	28.16	6.54	52.4	62.7	4.89	0.01
6/6/2006	14:15	6/6/2006 14:15	28.18	6.54	52.6	65.3	5.09	0.01
6/6/2006	14:30	6/6/2006 14:30	28.17	6.52	53	60.8	4.75	0.01
6/6/2006	14:45	6/6/2006 14:45	28.21	6.49	53.3	54.9	4.29	0.01
6/6/2006	15:00	6/6/2006 15:00	28.18	6.45	53	51.6	4.02	0.01
6/6/2006	15:15	6/6/2006 15:15	28.11	6.44	53.2	47	3.67	0.01
6/6/2006	15:30	6/6/2006 15:30	28.15	6.46	52.8	48.4	3.78	0.01
6/6/2006	15:45	6/6/2006 15:45	28.12	6.43	53.1	45.4	3.55	0.01
6/6/2006	16:00	6/6/2006 16:00	28.17	6.47	53.1	51.6	4.02	0.01
6/6/2006	16:15	6/6/2006 16:15	28.24	6.51	52.7	59.3	4.62	0.01
6/6/2006	16:30	6/6/2006 16:30	28.26	6.46	52.8	56.5	4.4	0.01
6/6/2006	16:45	6/6/2006 16:45	28.2	6.37	53.1	49	3.82	0.01
6/6/2006	17:00	6/6/2006 17:00	28.17	6.43	53.1	46.2	3.6	0.01
6/6/2006	17:15	6/6/2006 17:15	28.26	6.45	53.4	48.8	3.81	0.01
6/6/2006	17:30	6/6/2006 17:30	28.13	6.4	53.4	39.5	3.09	0.01
6/6/2006	17:45	6/6/2006 17:45	28.11	6.36	53.1	33	2.57	0.01
6/6/2006	18:00	6/6/2006 18:00	28.16	6.4	53.4	41.5	3.24	0.01
6/6/2006	18:15	6/6/2006 18:15	28.21	6.45	52.7	49.4	3.85	0.01
6/6/2006	18:30	6/6/2006 18:30	28.21	6.47	52.9	55.1	4.3	0.01
6/6/2006	18:45	6/6/2006 18:45	28.21	6.43	53.1	45.1	3.51	0.01
6/6/2006	19:00	6/6/2006 19:00	28.29	6.47	52.9	50.4	3.92	0.01
6/6/2006	19:15	6/6/2006 19:15	28.33	6.46	52.6	44	3.42	0.01
6/6/2006	19:30	6/6/2006 19:30	28.33	6.46	52.6	49.2	3.82	0.01
6/6/2006	19:45	6/6/2006 19:45	28.39	6.5	52.5	54.7	4.26	0.01

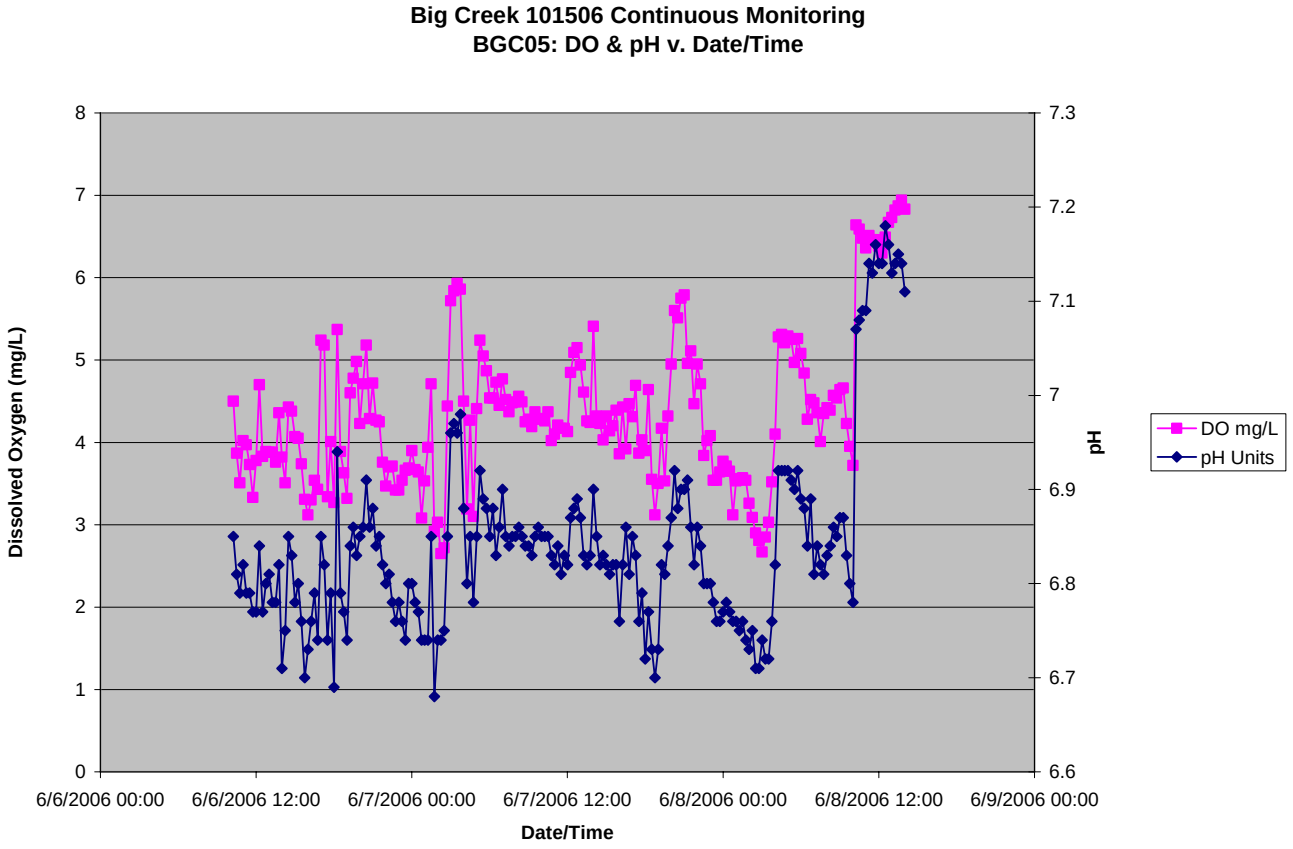
6/6/2006	20:00	6/6/2006 20:00	28.34	6.47	52.8	47.2	3.67	0.01
6/6/2006	20:15	6/6/2006 20:15	28.42	6.42	52.8	50.3	3.91	0.01
6/6/2006	20:30	6/6/2006 20:30	28.31	6.45	52.9	46.4	3.61	0.01
6/6/2006	20:45	6/6/2006 20:45	28.43	6.47	53	52.4	4.07	0.01
6/6/2006	21:00	6/6/2006 21:00	28.57	6.5	52.9	56.7	4.4	0.01
6/6/2006	21:15	6/6/2006 21:15	28.55	6.47	52.6	54.6	4.23	0.01
6/6/2006	21:30	6/6/2006 21:30	28.63	6.47	52.5	52.4	4.06	0.01
6/6/2006	21:45	6/6/2006 21:45	28.52	6.45	53	51.6	4	0.01
6/6/2006	22:00	6/6/2006 22:00	28.42	6.41	53	47.1	3.66	0.01
6/6/2006	22:15	6/6/2006 22:15	28.52	6.46	52.9	51.1	3.96	0.01
6/6/2006	22:30	6/6/2006 22:30	28.55	6.45	52.7	52.3	4.05	0.01
6/6/2006	22:45	6/6/2006 22:45	28.53	6.43	52.9	49.7	3.86	0.01
6/6/2006	23:00	6/6/2006 23:00	28.49	6.41	52.6	44.6	3.46	0.01
6/6/2006	23:15	6/6/2006 23:15	28.48	6.43	52.6	46.1	3.58	0.01
6/6/2006	23:30	6/6/2006 23:30	28.53	6.46	52.9	51.4	3.98	0.01
6/6/2006	23:45	6/6/2006 23:45	28.56	6.46	52.8	52.1	4.04	0.01
6/7/2006	0:00	6/7/2006 00:00	28.63	6.47	52.5	53.4	4.13	0.01
6/7/2006	0:15	6/7/2006 00:15	28.71	6.48	52.7	54.7	4.23	0.01
6/7/2006	0:30	6/7/2006 00:30	28.69	6.47	52.5	50.1	3.87	0.01
6/7/2006	0:45	6/7/2006 00:45	28.64	6.43	52.9	38.4	2.97	0.01
6/7/2006	1:00	6/7/2006 01:00	28.63	6.41	52.8	41.1	3.18	0.01
6/7/2006	1:15	6/7/2006 01:15	28.52	6.36	52.6	41.2	3.19	0.01
6/7/2006	1:30	6/7/2006 01:30	28.45	6.39	52.8	37.9	2.94	0.01
6/7/2006	1:45	6/7/2006 01:45	28.74	6.46	52.1	50.1	3.87	0.01
6/7/2006	2:00	6/7/2006 02:00	28.77	6.54	52.2	59.3	4.58	0.01
6/7/2006	2:15	6/7/2006 02:15	28.62	6.39	52.8	36.9	2.85	0.01
6/7/2006	2:30	6/7/2006 02:30	28.59	6.4	52.8	34.4	2.66	0.01
6/7/2006	2:45	6/7/2006 02:45	28.62	6.44	52.6	51.2	3.96	0.01
6/7/2006	3:00	6/7/2006 03:00	28.57	6.47	52.3	57.4	4.45	0.01
6/7/2006	3:15	6/7/2006 03:15	28.27	6.34	53.2	31.9	2.49	0.01
6/7/2006	3:30	6/7/2006 03:30	28.34	6.34	53.2	26.3	2.04	0.01
6/7/2006	3:45	6/7/2006 03:45	28.48	6.47	52.4	53.7	4.17	0.01
6/7/2006	4:00	6/7/2006 04:00	28.4	6.43	52.3	46.2	3.59	0.01
6/7/2006	4:15	6/7/2006 04:15	28.47	6.56	51.9	71.6	5.55	0.01
6/7/2006	4:30	6/7/2006 04:30	28.43	6.56	51.7	72.4	5.62	0.01
6/7/2006	4:45	6/7/2006 04:45	28.39	6.56	51.6	70.9	5.51	0.01
6/7/2006	5:00	6/7/2006 05:00	28.38	6.53	52	64.8	5.04	0.01
6/7/2006	5:15	6/7/2006 05:15	28.35	6.48	52.1	60.8	4.73	0.01
6/7/2006	5:30	6/7/2006 05:30	28.32	6.51	52.1	63.3	4.92	0.01
6/7/2006	5:45	6/7/2006 05:45	28.28	6.43	52.5	46.5	3.62	0.01
6/7/2006	6:00	6/7/2006 06:00	28.27	6.45	52.6	62.3	4.86	0.01
6/7/2006	6:15	6/7/2006 06:15	28.22	6.45	52.5	53.1	4.14	0.01
6/7/2006	6:30	6/7/2006 06:30	28.2	6.43	52.5	48.5	3.78	0.01
6/7/2006	6:45	6/7/2006 06:45	28.18	6.47	52.4	53.5	4.17	0.01
6/7/2006	7:00	6/7/2006 07:00	28.13	6.39	52.7	40	3.13	0.01
6/7/2006	7:15	6/7/2006 07:15	28.1	6.35	52.9	30.1	2.35	0.01
6/7/2006	7:30	6/7/2006 07:30	28.07	6.34	52.7	28.7	2.24	0.01
6/7/2006	7:45	6/7/2006 07:45	28.07	6.38	52.7	40.3	3.15	0.01
6/7/2006	8:00	6/7/2006 08:00	28	6.35	52.8	36.5	2.86	0.01
6/7/2006	8:15	6/7/2006 08:15	28.01	6.37	52.8	36.9	2.89	0.01
6/7/2006	8:30	6/7/2006 08:30	28.02	6.4	52.6	44.2	3.46	0.01

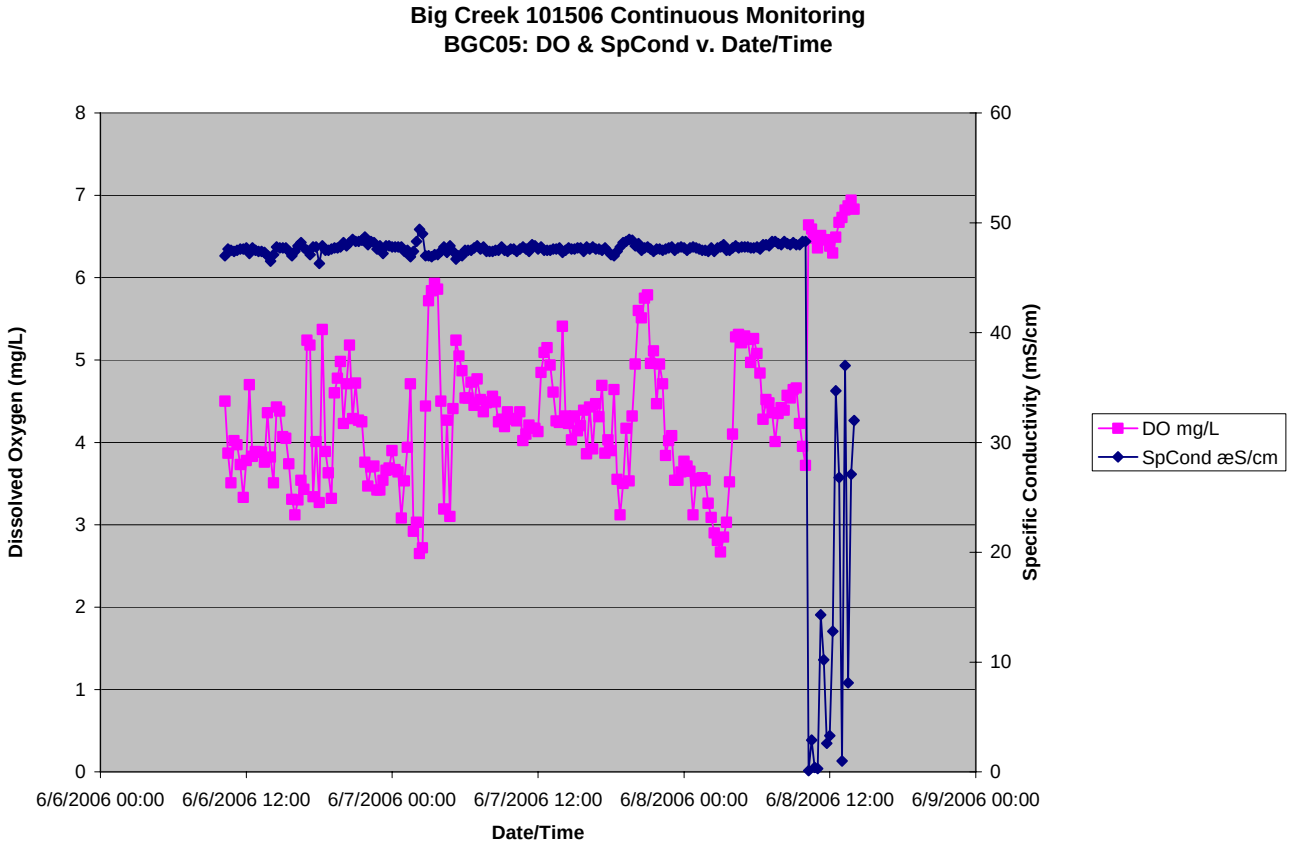
6/7/2006	8:45	6/7/2006 08:45	27.98	6.36	53	38.3	3	0.01
6/7/2006	9:00	6/7/2006 09:00	27.98	6.37	52.6	37	2.9	0.01
6/7/2006	9:15	6/7/2006 09:15	27.99	6.38	52.6	34.9	2.73	0.01
6/7/2006	9:30	6/7/2006 09:30	27.98	6.34	53.2	32.4	2.54	0.01
6/7/2006	9:45	6/7/2006 09:45	28	6.37	52.9	32.9	2.58	0.01
6/7/2006	10:00	6/7/2006 10:00	28.01	6.39	52.5	36.5	2.86	0.01
6/7/2006	10:15	6/7/2006 10:15	28	6.36	52.4	35.9	2.81	0.01
6/7/2006	10:30	6/7/2006 10:30	28.01	6.38	52.4	37.7	2.95	0.01
6/7/2006	10:45	6/7/2006 10:45	28.03	6.38	52.5	39.9	3.12	0.01
6/7/2006	11:00	6/7/2006 11:00	28	6.37	52.6	35	2.74	0.01
6/7/2006	11:15	6/7/2006 11:15	28.03	6.38	52.5	38.2	2.99	0.01
6/7/2006	11:30	6/7/2006 11:30	28.02	6.38	52.8	40.1	3.14	0.01
6/7/2006	11:45	6/7/2006 11:45	28.02	6.41	52.5	43.8	3.42	0.01
6/7/2006	12:00	6/7/2006 12:00	28.08	6.43	52.7	49.3	3.86	0.01
6/7/2006	12:15	6/7/2006 12:15	27.99	6.42	52.8	47.5	3.72	0.01
6/7/2006	12:30	6/7/2006 12:30	28.1	6.41	52.4	44.6	3.49	0.01
6/7/2006	12:45	6/7/2006 12:45	28.05	6.38	52.5	40.9	3.2	0.01
6/7/2006	13:00	6/7/2006 13:00	28.03	6.38	52.2	36.7	2.87	0.01
6/7/2006	13:15	6/7/2006 13:15	28.15	6.41	52.2	43.7	3.41	0.01
6/7/2006	13:30	6/7/2006 13:30	28.03	6.38	52.6	41.6	3.26	0.01
6/7/2006	13:45	6/7/2006 13:45	28.05	6.39	52.4	43.9	3.44	0.01
6/7/2006	14:00	6/7/2006 14:00	28.07	6.39	52.3	45.3	3.54	0.01
6/7/2006	14:15	6/7/2006 14:15	28.11	6.41	52.1	47	3.67	0.01
6/7/2006	14:30	6/7/2006 14:30	28.11	6.4	52.1	46	3.6	0.01
6/7/2006	14:45	6/7/2006 14:45	28.09	6.39	52.3	45.6	3.56	0.01
6/7/2006	15:00	6/7/2006 15:00	28.08	6.38	52.1	45.1	3.53	0.01
6/7/2006	15:15	6/7/2006 15:15	28.07	6.38	52.1	42.1	3.29	0.01
6/7/2006	15:30	6/7/2006 15:30	28.08	6.37	52.1	42.3	3.31	0.01
6/7/2006	15:45	6/7/2006 15:45	28.07	6.38	52	40.7	3.18	0.01
6/7/2006	16:00	6/7/2006 16:00	28.03	6.35	52	37.6	2.94	0.01
6/7/2006	16:15	6/7/2006 16:15	28.02	6.35	52.8	32.4	2.54	0.01
6/7/2006	16:30	6/7/2006 16:30	28.06	6.37	52.7	32.6	2.55	0.01
6/7/2006	16:45	6/7/2006 16:45	28.01	6.32	53.2	25.7	2.01	0.01
6/7/2006	17:00	6/7/2006 17:00	28.03	6.34	52.9	24.2	1.89	0.01
6/7/2006	17:15	6/7/2006 17:15	28.01	6.32	53.2	22.8	1.78	0.01
6/7/2006	17:30	6/7/2006 17:30	28.01	6.27	53	21.9	1.71	0.01
6/7/2006	17:45	6/7/2006 17:45	28.02	6.29	53.2	22.3	1.75	0.01
6/7/2006	18:00	6/7/2006 18:00	28.32	6.37	52.6	45.1	3.51	0.01
6/7/2006	18:15	6/7/2006 18:15	28.34	6.4	52.1	52.4	4.08	0.01
6/7/2006	18:30	6/7/2006 18:30	28.59	6.48	52.1	67.6	5.23	0.01
6/7/2006	18:45	6/7/2006 18:45	28.82	6.55	52.1	73.6	5.68	0.01
6/7/2006	19:00	6/7/2006 19:00	28.77	6.52	52	70	5.4	0.01
6/7/2006	19:15	6/7/2006 19:15	29.25	6.63	52.1	80.7	6.18	0.01
6/7/2006	19:30	6/7/2006 19:30	29	6.53	52	71.7	5.51	0.01
6/7/2006	19:45	6/7/2006 19:45	29.16	6.63	51.8	87.6	6.72	0.01
6/7/2006	20:00	6/7/2006 20:00	29	6.54	52	77.1	5.93	0.01
6/7/2006	20:15	6/7/2006 20:15	28.94	6.45	51.8	62.1	4.78	0.01
6/7/2006	20:30	6/7/2006 20:30	28.43	6.37	51.7	44.8	3.48	0.01
6/7/2006	20:45	6/7/2006 20:45	28.36	6.37	52	44	3.42	0.01
6/7/2006	21:00	6/7/2006 21:00	28.28	6.29	52	30.1	2.34	0.01
6/7/2006	21:15	6/7/2006 21:15	28.19	6.29	51.8	30.1	2.35	0.01

6/7/2006	21:30	6/7/2006 21:30	28.14	6.31	51.5	31.8	2.48	0.01
6/7/2006	21:45	6/7/2006 21:45	28.19	6.3	51.8	29.2	2.27	0.01
6/7/2006	22:00	6/7/2006 22:00	28.23	6.3	52.1	32.4	2.53	0.01
6/7/2006	22:15	6/7/2006 22:15	28.49	6.34	51.8	37.7	2.93	0.01
6/7/2006	22:30	6/7/2006 22:30	28.52	6.36	51.8	42	3.26	0.01
6/7/2006	22:45	6/7/2006 22:45	28.54	6.36	52.2	40.3	3.12	0.01
6/7/2006	23:00	6/7/2006 23:00	28.47	6.35	52	33.1	2.57	0.01
6/7/2006	23:15	6/7/2006 23:15	28.62	6.38	53	35.5	2.75	0.01
6/7/2006	23:30	6/7/2006 23:30	28.67	6.39	52.8	37.1	2.87	0.01
6/7/2006	23:45	6/7/2006 23:45	28.69	6.39	53.5	37.8	2.92	0.01
6/8/2006	0:00	6/8/2006 00:00	28.69	6.38	53.3	37.2	2.88	0.01
6/8/2006	0:15	6/8/2006 00:15	28.72	6.39	52.8	39.5	3.05	0.01
6/8/2006	0:30	6/8/2006 00:30	28.72	6.38	53.1	36.9	2.85	0.01
6/8/2006	0:45	6/8/2006 00:45	28.69	6.39	52.1	39	3.01	0.01
6/8/2006	1:00	6/8/2006 01:00	28.62	6.37	51.7	42.7	3.3	0.01
6/8/2006	1:15	6/8/2006 01:15	28.48	6.32	52	34.1	2.64	0.01
6/8/2006	1:30	6/8/2006 01:30	28.56	6.33	51.9	33.5	2.6	0.01
6/8/2006	1:45	6/8/2006 01:45	28.65	6.36	52	39.5	3.06	0.01
6/8/2006	2:00	6/8/2006 02:00	28.68	6.37	52.1	40.2	3.11	0.01
6/8/2006	2:15	6/8/2006 02:15	28.62	6.35	52.4	37.2	2.88	0.01
6/8/2006	2:30	6/8/2006 02:30	28.48	6.32	51.9	32.1	2.49	0.01
6/8/2006	2:45	6/8/2006 02:45	28.71	6.33	51.6	33.9	2.62	0.01
6/8/2006	3:00	6/8/2006 03:00	28.63	6.33	52	39.5	3.06	0.01
6/8/2006	3:15	6/8/2006 03:15	28.69	6.35	52.3	51.2	3.96	0.01
6/8/2006	3:30	6/8/2006 03:30	28.72	6.39	52.5	38.2	2.95	0.01
6/8/2006	3:45	6/8/2006 03:45	28.61	6.36	52.5	34.4	2.66	0.01
6/8/2006	4:00	6/8/2006 04:00	28.63	6.38	52.8	36.7	2.84	0.01
6/8/2006	4:15	6/8/2006 04:15	28.66	6.39	52.3	40.5	3.13	0.01
6/8/2006	4:30	6/8/2006 04:30	28.67	6.4	52.8	41.2	3.18	0.01
6/8/2006	4:45	6/8/2006 04:45	28.65	6.43	52.7	47.4	3.67	0.01
6/8/2006	5:00	6/8/2006 05:00	28.65	6.52	52.5	59.5	4.61	0.01
6/8/2006	5:15	6/8/2006 05:15	28.62	6.52	52.4	62.2	4.82	0.01
6/8/2006	5:30	6/8/2006 05:30	28.58	6.52	52.5	63	4.88	0.01
6/8/2006	5:45	6/8/2006 05:45	28.54	6.52	52.6	61.4	4.76	0.01
6/8/2006	6:00	6/8/2006 06:00	28.5	6.54	52.7	63.1	4.9	0.01
6/8/2006	6:15	6/8/2006 06:15	28.47	6.52	52.4	59	4.58	0.01
6/8/2006	6:30	6/8/2006 06:30	28.43	6.52	52.7	59.9	4.65	0.01
6/8/2006	6:45	6/8/2006 06:45	28.38	6.51	52.7	61.9	4.81	0.01
6/8/2006	7:00	6/8/2006 07:00	28.36	6.46	52.5	52.3	4.07	0.01
6/8/2006	7:15	6/8/2006 07:15	28.37	6.49	52.5	59.3	4.61	0.01
6/8/2006	7:30	6/8/2006 07:30	28.37	6.47	52.8	56.8	4.41	0.01
6/8/2006	7:45	6/8/2006 07:45	28.36	6.49	52.8	56.6	4.41	0.01
6/8/2006	8:00	6/8/2006 08:00	28.36	6.5	52.7	57.2	4.45	0.01
6/8/2006	8:15	6/8/2006 08:15	28.34	6.48	52.8	56.4	4.39	0.01
6/8/2006	8:30	6/8/2006 08:30	28.34	6.49	52.8	57.5	4.47	0.01
6/8/2006	8:45	6/8/2006 08:45	28.33	6.49	52.9	55.9	4.35	0.01
6/8/2006	9:00	6/8/2006 09:00	28.31	6.46	53	50	3.9	0.01
6/8/2006	9:15	6/8/2006 09:15	28.31	6.45	52.9	50	3.89	0.01
6/8/2006	9:30	6/8/2006 09:30	28.33	6.47	52.8	53	4.12	0.01
6/8/2006	9:45	6/8/2006 09:45	28.34	6.42	52.5	46.3	3.6	0.01

Average	**28.32**	**6.43**	**52.516**	**47.72291667**	**3.71**	**0.01**
Minimum	**27.83**	**6.27**	**51.5**	**21.9**	**1.71**	**0.01**
Maximum	**29.25**	**6.63**	**53.5**	**87.6**	**6.72**	**0.01**


Big Creek 101506 Continuous Monitoring
BGC05: DO & Temp v. Date/Time
Dissolved Oxygen (mg/L)
Temperature (C)
Date/Time
0
1
2
3
4
5
6
7
8
0
5
10
15
20
25
30
35
40
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
Temp øC


Big Creek 101506 Continuous Monitoring
BGC05: DO & pH v. Date/Time
Dissolved Oxygen (mg/L)
pH
Date/Time
0
1
2
3
4
5
6
7
8
6.6
6.7
6.8
6.9
7
7.1
7.2
7.3
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
pH Units


Big Creek 101506 Continuous Monitoring
BGC05: DO & SpCond v. Date/Time
Dissolved Oxygen (mg/L)
Specific Conductivity (mS/cm)
Date/Time
6/6/2006 00:00
6/6/2006 12:00
6/7/2006 00:00
6/7/2006 12:00
6/8/2006 00:00
6/8/2006 12:00
6/9/2006 00:00
DO mg/L
SpCond æS/cm

Big Creek
Subsegment 101506
Site BGC05

Date_	Time	Date+Time	Temp	pH	SpCond	DO PERCENT	DO	SALINITY
MMDDYY	HHMM	MMDDYYYY HHMM	øC	Units	æS/cm	Sat	mg/L	ppt
6/6/2006	10:15	6/6/2006 10:15	27.83	6.85	47	57.3	4.5	0.01
6/6/2006	10:30	6/6/2006 10:30	27.81	6.81	47.6	49.3	3.87	0.01
6/6/2006	10:45	6/6/2006 10:45	27.76	6.79	47.5	44.6	3.51	0.01
6/6/2006	11:00	6/6/2006 11:00	27.86	6.82	47.4	51.2	4.02	0.01
6/6/2006	11:15	6/6/2006 11:15	27.87	6.79	47.5	50.6	3.97	0.01
6/6/2006	11:30	6/6/2006 11:30	27.78	6.79	47.6	47.5	3.73	0.01
6/6/2006	11:45	6/6/2006 11:45	27.79	6.77	47.6	42.4	3.33	0.01
6/6/2006	12:00	6/6/2006 12:00	27.87	6.77	47.7	48.2	3.78	0.01
6/6/2006	12:15	6/6/2006 12:15	28.13	6.84	47.2	60.2	4.7	0.01
6/6/2006	12:30	6/6/2006 12:30	27.88	6.77	47.7	48.8	3.83	0.01
6/6/2006	12:45	6/6/2006 12:45	27.93	6.8	47.5	49.7	3.89	0.01
6/6/2006	13:00	6/6/2006 13:00	27.9	6.81	47.4	49.5	3.88	0.01
6/6/2006	13:15	6/6/2006 13:15	27.91	6.78	47.4	49.5	3.88	0.01
6/6/2006	13:30	6/6/2006 13:30	27.93	6.78	47.3	47.9	3.76	0.01
6/6/2006	13:45	6/6/2006 13:45	27.98	6.82	47	55.7	4.36	0.01
6/6/2006	14:00	6/6/2006 14:00	27.97	6.71	46.5	48.8	3.82	0.01
6/6/2006	14:15	6/6/2006 14:15	27.94	6.75	47.1	44.9	3.51	0.01
6/6/2006	14:30	6/6/2006 14:30	27.91	6.85	47.8	56.6	4.43	0.01
6/6/2006	14:45	6/6/2006 14:45	27.91	6.83	47.7	55.9	4.38	0.01
6/6/2006	15:00	6/6/2006 15:00	27.9	6.78	47.7	51.9	4.07	0.01
6/6/2006	15:15	6/6/2006 15:15	27.91	6.8	47.7	51.6	4.05	0.01
6/6/2006	15:30	6/6/2006 15:30	27.92	6.76	47.4	47.7	3.74	0.01
6/6/2006	15:45	6/6/2006 15:45	27.9	6.7	47	42.2	3.31	0.01
6/6/2006	16:00	6/6/2006 16:00	27.85	6.73	47.4	39.7	3.12	0.01
6/6/2006	16:15	6/6/2006 16:15	27.84	6.76	47.9	42	3.3	0.01
6/6/2006	16:30	6/6/2006 16:30	27.92	6.79	48.2	45.1	3.54	0.01
6/6/2006	16:45	6/6/2006 16:45	27.95	6.74	47.7	43.8	3.43	0.01
6/6/2006	17:00	6/6/2006 17:00	28.21	6.85	47.5	67.2	5.24	0.01
6/6/2006	17:15	6/6/2006 17:15	28.26	6.82	47.1	66.5	5.18	0.01
6/6/2006	17:30	6/6/2006 17:30	27.88	6.74	47.8	42.6	3.34	0.01
6/6/2006	17:45	6/6/2006 17:45	27.96	6.79	47.8	51.2	4.01	0.01
6/6/2006	18:00	6/6/2006 18:00	28.04	6.69	46.3	41.8	3.27	0.01
6/6/2006	18:15	6/6/2006 18:15	28.24	6.94	47.9	68.9	5.37	0.01
6/6/2006	18:30	6/6/2006 18:30	28.06	6.79	47.5	49.7	3.89	0.01
6/6/2006	18:45	6/6/2006 18:45	28.08	6.77	47.5	46.5	3.63	0.01
6/6/2006	19:00	6/6/2006 19:00	28.07	6.74	47.6	42.4	3.32	0.01
6/6/2006	19:15	6/6/2006 19:15	28.27	6.84	47.7	59.1	4.6	0.01

6/6/2006	19:30	6/6/2006 19:30	28.31	6.86	47.7	61.4	4.78	0.01
6/6/2006	19:45	6/6/2006 19:45	28.25	6.83	47.8	63.9	4.98	0.01
6/6/2006	20:00	6/6/2006 20:00	28.21	6.85	48.2	54.2	4.23	0.01
6/6/2006	20:15	6/6/2006 20:15	28.25	6.86	47.9	60.5	4.71	0.01
6/6/2006	20:30	6/6/2006 20:30	28.28	6.91	48.2	66.5	5.18	0.01
6/6/2006	20:45	6/6/2006 20:45	28.16	6.86	48.5	54.9	4.29	0.01
6/6/2006	21:00	6/6/2006 21:00	28.22	6.88	48.3	60.6	4.72	0.01
6/6/2006	21:15	6/6/2006 21:15	28.17	6.84	48.3	54.7	4.27	0.01
6/6/2006	21:30	6/6/2006 21:30	28.14	6.85	48.4	54.4	4.25	0.01
6/6/2006	21:45	6/6/2006 21:45	28.1	6.82	48.7	48.1	3.76	0.01
6/6/2006	22:00	6/6/2006 22:00	28.14	6.8	48	44.4	3.47	0.01
6/6/2006	22:15	6/6/2006 22:15	28.21	6.81	48.3	47.5	3.7	0.01
6/6/2006	22:30	6/6/2006 22:30	28.21	6.78	48.2	47.5	3.71	0.01
6/6/2006	22:45	6/6/2006 22:45	28.17	6.76	47.6	43.8	3.42	0.01
6/6/2006	23:00	6/6/2006 23:00	28.08	6.78	47.9	43.7	3.42	0.01
6/6/2006	23:15	6/6/2006 23:15	28.17	6.76	47.2	45.3	3.54	0.01
6/6/2006	23:30	6/6/2006 23:30	28.2	6.74	47.9	46.9	3.66	0.01
6/6/2006	23:45	6/6/2006 23:45	28.23	6.8	47.9	47.3	3.69	0.01
6/7/2006	0:00	6/7/2006 00:00	28.31	6.8	47.8	50.1	3.9	0.01
6/7/2006	0:15	6/7/2006 00:15	28.34	6.78	47.8	47.2	3.67	0.01
6/7/2006	0:30	6/7/2006 00:30	28.36	6.77	47.8	46.8	3.64	0.01
6/7/2006	0:45	6/7/2006 00:45	28.37	6.74	47.8	39.6	3.08	0.01
6/7/2006	1:00	6/7/2006 01:00	28.39	6.74	47.4	45.4	3.53	0.01
6/7/2006	1:15	6/7/2006 01:15	28.48	6.74	47.5	50.8	3.94	0.01
6/7/2006	1:30	6/7/2006 01:30	28.75	6.85	46.9	61	4.71	0.01
6/7/2006	1:45	6/7/2006 01:45	28.29	6.68	47.4	37.5	2.92	0.01
6/7/2006	2:00	6/7/2006 02:00	28.24	6.74	48.3	38.8	3.03	0.01
6/7/2006	2:15	6/7/2006 02:15	28.02	6.74	49.4	33.9	2.65	0.01
6/7/2006	2:30	6/7/2006 02:30	28.11	6.75	49	34.8	2.72	0.01
6/7/2006	2:45	6/7/2006 02:45	28.57	6.85	47	57.3	4.44	0.01
6/7/2006	3:00	6/7/2006 03:00	28.58	6.96	47	73.8	5.72	0.01
6/7/2006	3:15	6/7/2006 03:15	28.52	6.97	46.9	75.3	5.84	0.01
6/7/2006	3:30	6/7/2006 03:30	28.48	6.96	47.1	76.4	5.93	0.01
6/7/2006	3:45	6/7/2006 03:45	28.45	6.98	47.1	75.5	5.86	0.01
6/7/2006	4:00	6/7/2006 04:00	28.32	6.88	47.4	57.8	4.5	0.01
6/7/2006	4:15	6/7/2006 04:15	28.29	6.8	47.8	40.9	3.19	0.01
6/7/2006	4:30	6/7/2006 04:30	28.31	6.85	47.3	54.9	4.27	0.01
6/7/2006	4:45	6/7/2006 04:45	28.23	6.78	47.9	39.8	3.1	0.01
6/7/2006	5:00	6/7/2006 05:00	28.24	6.85	47.4	56.6	4.41	0.01
6/7/2006	5:15	6/7/2006 05:15	28.25	6.92	46.7	67.2	5.24	0.01
6/7/2006	5:30	6/7/2006 05:30	28.24	6.89	47	64.8	5.05	0.01
6/7/2006	5:45	6/7/2006 05:45	28.2	6.88	47	62.4	4.87	0.01
6/7/2006	6:00	6/7/2006 06:00	28.16	6.85	47.5	58.2	4.54	0.01
6/7/2006	6:15	6/7/2006 06:15	28.14	6.88	47.5	58.2	4.54	0.01
6/7/2006	6:30	6/7/2006 06:30	28.12	6.83	47.5	60.6	4.73	0.01
6/7/2006	6:45	6/7/2006 06:45	28.08	6.86	47.7	57	4.45	0.01
6/7/2006	7:00	6/7/2006 07:00	28.07	6.9	47.9	61.1	4.77	0.01
6/7/2006	7:15	6/7/2006 07:15	28.04	6.85	47.6	57.8	4.52	0.01
6/7/2006	7:30	6/7/2006 07:30	28.01	6.84	47.8	55.8	4.37	0.01

6/7/2006	7:45	6/7/2006 07:45	27.99	6.85	47.4	57.3	4.48	0.01
6/7/2006	8:00	6/7/2006 08:00	27.96	6.85	47.4	57.3	4.49	0.01
6/7/2006	8:15	6/7/2006 08:15	27.94	6.86	47.4	58.1	4.56	0.01
6/7/2006	8:30	6/7/2006 08:30	27.93	6.85	47.5	57.3	4.49	0.01
6/7/2006	8:45	6/7/2006 08:45	27.95	6.84	47.5	54.3	4.25	0.01
6/7/2006	9:00	6/7/2006 09:00	27.97	6.84	47.8	54.7	4.28	0.01
6/7/2006	9:15	6/7/2006 09:15	27.96	6.83	47.5	53.5	4.19	0.01
6/7/2006	9:30	6/7/2006 09:30	28.02	6.85	47.4	55.8	4.37	0.01
6/7/2006	9:45	6/7/2006 09:45	28.03	6.86	47.6	54.8	4.28	0.01
6/7/2006	10:00	6/7/2006 10:00	27.98	6.85	47.6	54.7	4.29	0.01
6/7/2006	10:15	6/7/2006 10:15	27.99	6.85	47.4	54.4	4.26	0.01
6/7/2006	10:30	6/7/2006 10:30	28.03	6.85	47.6	55.8	4.37	0.01
6/7/2006	10:45	6/7/2006 10:45	27.97	6.83	47.8	51.3	4.02	0.01
6/7/2006	11:00	6/7/2006 11:00	27.98	6.82	47.6	52.3	4.1	0.01
6/7/2006	11:15	6/7/2006 11:15	28	6.84	47.4	53.8	4.21	0.01
6/7/2006	11:30	6/7/2006 11:30	28	6.81	48	53.3	4.17	0.01
6/7/2006	11:45	6/7/2006 11:45	28.05	6.83	47.9	53.3	4.17	0.01
6/7/2006	12:00	6/7/2006 12:00	28.02	6.82	47.6	52.8	4.13	0.01
6/7/2006	12:15	6/7/2006 12:15	28.2	6.87	47.8	62.2	4.85	0.01
6/7/2006	12:30	6/7/2006 12:30	28.25	6.88	47.5	65.3	5.09	0.01
6/7/2006	12:45	6/7/2006 12:45	28.17	6.89	47.5	66	5.15	0.01
6/7/2006	13:00	6/7/2006 13:00	28.19	6.87	47.5	63.4	4.94	0.01
6/7/2006	13:15	6/7/2006 13:15	28.12	6.83	47.6	59	4.61	0.01
6/7/2006	13:30	6/7/2006 13:30	28.06	6.82	47.6	54.4	4.26	0.01
6/7/2006	13:45	6/7/2006 13:45	28.05	6.83	47.7	54.3	4.24	0.01
6/7/2006	14:00	6/7/2006 14:00	28.3	6.9	47.3	69.5	5.41	0.01
6/7/2006	14:15	6/7/2006 14:15	28.09	6.85	47.5	55.3	4.32	0.01
6/7/2006	14:30	6/7/2006 14:30	28.05	6.82	47.7	54.1	4.23	0.01
6/7/2006	14:45	6/7/2006 14:45	28.08	6.83	47.6	51.6	4.03	0.01
6/7/2006	15:00	6/7/2006 15:00	28.04	6.82	47.6	55.2	4.32	0.01
6/7/2006	15:15	6/7/2006 15:15	28.06	6.81	47.7	52.9	4.14	0.01
6/7/2006	15:30	6/7/2006 15:30	28.08	6.82	47.7	53.8	4.2	0.01
6/7/2006	15:45	6/7/2006 15:45	28.16	6.82	47.4	56.2	4.39	0.01
6/7/2006	16:00	6/7/2006 16:00	28.19	6.76	47.8	49.4	3.86	0.01
6/7/2006	16:15	6/7/2006 16:15	28.2	6.82	47.6	56.9	4.43	0.01
6/7/2006	16:30	6/7/2006 16:30	28.33	6.86	47.8	50.4	3.92	0.01
6/7/2006	16:45	6/7/2006 16:45	28.44	6.81	47.6	57.5	4.47	0.01
6/7/2006	17:00	6/7/2006 17:00	28.2	6.85	47.6	55.3	4.31	0.01
6/7/2006	17:15	6/7/2006 17:15	28.31	6.83	47.5	60.2	4.69	0.01
6/7/2006	17:30	6/7/2006 17:30	28.25	6.76	47.7	49.7	3.87	0.01
6/7/2006	17:45	6/7/2006 17:45	28.25	6.79	47.4	51.7	4.03	0.01
6/7/2006	18:00	6/7/2006 18:00	28.28	6.72	47.1	50	3.9	0.01
6/7/2006	18:15	6/7/2006 18:15	28.6	6.77	47	59.9	4.64	0.01
6/7/2006	18:30	6/7/2006 18:30	28.19	6.73	47.4	45.5	3.55	0.01
6/7/2006	18:45	6/7/2006 18:45	28.22	6.7	47.8	40	3.12	0.01
6/7/2006	19:00	6/7/2006 19:00	28.23	6.73	48.2	44.9	3.5	0.01
6/7/2006	19:15	6/7/2006 19:15	28.2	6.82	48.3	53.5	4.17	0.01
6/7/2006	19:30	6/7/2006 19:30	28.17	6.81	48.5	45.3	3.53	0.01
6/7/2006	19:45	6/7/2006 19:45	28.28	6.84	48.4	55.5	4.32	0.01

6/7/2006	20:00	6/7/2006 20:00	28.49	6.87	47.9	63.8	4.95	0.01
6/7/2006	20:15	6/7/2006 20:15	28.57	6.92	48.1	72.3	5.6	0.01
6/7/2006	20:30	6/7/2006 20:30	28.64	6.88	47.5	71.2	5.51	0.01
6/7/2006	20:45	6/7/2006 20:45	28.78	6.9	47.7	74.5	5.75	0.01
6/7/2006	21:00	6/7/2006 21:00	28.91	6.9	47.8	75.1	5.79	0.01
6/7/2006	21:15	6/7/2006 21:15	28.85	6.91	47.6	64.3	4.96	0.01
6/7/2006	21:30	6/7/2006 21:30	29	6.86	47.4	66.4	5.11	0.01
6/7/2006	21:45	6/7/2006 21:45	28.82	6.82	47.6	57.9	4.47	0.01
6/7/2006	22:00	6/7/2006 22:00	28.75	6.86	47.6	64.1	4.95	0.01
6/7/2006	22:15	6/7/2006 22:15	28.78	6.84	47.5	61	4.71	0.01
6/7/2006	22:30	6/7/2006 22:30	28.81	6.8	47.6	49.8	3.84	0.01
6/7/2006	22:45	6/7/2006 22:45	28.73	6.8	47.7	52.1	4.02	0.01
6/7/2006	23:00	6/7/2006 23:00	28.7	6.8	47.8	52.8	4.08	0.01
6/7/2006	23:15	6/7/2006 23:15	28.64	6.78	47.5	45.8	3.54	0.01
6/7/2006	23:30	6/7/2006 23:30	28.61	6.76	47.7	45.7	3.54	0.01
6/7/2006	23:45	6/7/2006 23:45	28.56	6.76	47.8	47	3.64	0.01
6/8/2006	0:00	6/8/2006 00:00	28.57	6.77	47.7	48.7	3.77	0.01
6/8/2006	0:15	6/8/2006 00:15	28.61	6.78	47.5	47.9	3.71	0.01
6/8/2006	0:30	6/8/2006 00:30	28.61	6.77	47.7	47.1	3.65	0.01
6/8/2006	0:45	6/8/2006 00:45	28.64	6.76	47.8	40.3	3.12	0.01
6/8/2006	1:00	6/8/2006 01:00	28.67	6.76	47.7	45.7	3.53	0.01
6/8/2006	1:15	6/8/2006 01:15	28.68	6.75	47.6	46	3.56	0.01
6/8/2006	1:30	6/8/2006 01:30	28.63	6.76	47.5	46.2	3.57	0.01
6/8/2006	1:45	6/8/2006 01:45	28.59	6.74	47.5	45.7	3.54	0.01
6/8/2006	2:00	6/8/2006 02:00	28.64	6.73	47.4	42.1	3.26	0.01
6/8/2006	2:15	6/8/2006 02:15	28.61	6.75	47.7	39.9	3.09	0.01
6/8/2006	2:30	6/8/2006 02:30	28.63	6.71	47.4	37.5	2.9	0.01
6/8/2006	2:45	6/8/2006 02:45	28.61	6.71	47.7	36.2	2.81	0.01
6/8/2006	3:00	6/8/2006 03:00	28.66	6.74	47.8	34.5	2.67	0.01
6/8/2006	3:15	6/8/2006 03:15	28.69	6.72	48	36.8	2.85	0.01
6/8/2006	3:30	6/8/2006 03:30	28.63	6.72	47.5	39.2	3.03	0.01
6/8/2006	3:45	6/8/2006 03:45	28.65	6.76	47.5	45.5	3.52	0.01
6/8/2006	4:00	6/8/2006 04:00	28.74	6.82	47.7	53	4.1	0.01
6/8/2006	4:15	6/8/2006 04:15	28.73	6.92	47.9	68.3	5.28	0.01
6/8/2006	4:30	6/8/2006 04:30	28.7	6.92	47.7	68.7	5.31	0.01
6/8/2006	4:45	6/8/2006 04:45	28.68	6.92	47.8	67.3	5.21	0.01
6/8/2006	5:00	6/8/2006 05:00	28.66	6.92	47.8	68.4	5.29	0.01
6/8/2006	5:15	6/8/2006 05:15	28.64	6.91	47.8	67.8	5.25	0.01
6/8/2006	5:30	6/8/2006 05:30	28.61	6.9	47.7	64.2	4.97	0.01
6/8/2006	5:45	6/8/2006 05:45	28.58	6.92	47.7	67.9	5.26	0.01
6/8/2006	6:00	6/8/2006 06:00	28.56	6.89	47.8	65.5	5.08	0.01
6/8/2006	6:15	6/8/2006 06:15	28.54	6.88	47.6	62.5	4.84	0.01
6/8/2006	6:30	6/8/2006 06:30	28.51	6.84	48	55.2	4.28	0.01
6/8/2006	6:45	6/8/2006 06:45	28.48	6.89	48	58.2	4.52	0.01
6/8/2006	7:00	6/8/2006 07:00	28.47	6.81	47.9	57.8	4.48	0.01
6/8/2006	7:15	6/8/2006 07:15	28.45	6.84	48.3	56.1	4.36	0.01
6/8/2006	7:30	6/8/2006 07:30	28.43	6.82	48.3	51.6	4.01	0.01
6/8/2006	7:45	6/8/2006 07:45	28.41	6.81	48.1	56	4.35	0.01
6/8/2006	8:00	6/8/2006 08:00	28.42	6.83	48	56.9	4.42	0.01

6/8/2006	8:15	6/8/2006 08:15	28.41	6.84	48.3	56.5	4.39	0.01
6/8/2006	8:30	6/8/2006 08:30	28.43	6.86	48.1	58.8	4.57	0.01
6/8/2006	8:45	6/8/2006 08:45	28.44	6.85	48	58.5	4.54	0.01
6/8/2006	9:00	6/8/2006 09:00	28.48	6.87	48.2	59.8	4.64	0.01
6/8/2006	9:15	6/8/2006 09:15	28.5	6.87	48	60.1	4.66	0.01
6/8/2006	9:30	6/8/2006 09:30	28.44	6.83	48	54.5	4.23	0.01
6/8/2006	9:45	6/8/2006 09:45	28.41	6.8	48.3	50.9	3.95	0.01
6/8/2006	10:00	6/8/2006 10:00	28.42	6.78	48.3	47.9	3.72	0.01
6/8/2006	10:15	6/8/2006 10:15	28.75	7.07	0.1	85.9	6.64	-0.01
6/8/2006	10:30	6/8/2006 10:30	29.03	7.08	2.9	85.8	6.59	0
6/8/2006	10:45	6/8/2006 10:45	29.68	7.09	0.4	85.2	6.48	-0.01
6/8/2006	11:00	6/8/2006 11:00	30.32	7.09	0.3	84.6	6.36	-0.01
6/8/2006	11:15	6/8/2006 11:15	30.9	7.14	14.3	87.5	6.51	0
6/8/2006	11:30	6/8/2006 11:30	31.78	7.13	10.2	88.1	6.46	0
6/8/2006	11:45	6/8/2006 11:45	32.52	7.16	2.6	89.3	6.46	0
6/8/2006	12:00	6/8/2006 12:00	33.44	7.14	3.3	89.4	6.38	0
6/8/2006	12:15	6/8/2006 12:15	35.47	7.14	12.8	91.4	6.3	0
6/8/2006	12:30	6/8/2006 12:30	35.09	7.18	34.7	93.5	6.49	0
6/8/2006	12:45	6/8/2006 12:45	34.67	7.16	26.8	95.5	6.67	0
6/8/2006	13:00	6/8/2006 13:00	35.58	7.13	1	97.8	6.73	0
6/8/2006	13:15	6/8/2006 13:15	36.05	7.14	37	99.9	6.82	0
6/8/2006	13:30	6/8/2006 13:30	36.11	7.15	8.1	100.6	6.87	0
6/8/2006	13:45	6/8/2006 13:45	36.65	7.14	27.1	102.6	6.94	0
6/8/2006	14:00	6/8/2006 14:00	37.07	7.11	32	101.6	6.83	0
		Site BGC05						
		Average	28.6572	6.84	45.033	56.72740385	4.37	0.009087
		Minimum	27.76	6.68	0.1	33.9	2.65	-0.01
		Maximum	37.07	7.18	49.4	102.6	6.94	0.01

Appendix F5 – BOD Calculations

Big Creek 101506
Lab BOD Calculations Summary

Site ID	CBOD1 (mg/l)	k rate (1/day)	CBOD2 (mg/l)	k rate (1/day)	NBOD (mg/l)	k rate (1/day)
BGC01	9.7808	0.1482	5.8308	0.0389	3.1278	0.1024
BGC02	7.7073	0.2130	7.3965	0.0299	3.5904	0.0713
BGC03	8.5167	0.1700	5.7985	0.0314	2.6087	0.1058
BGC04	8.4151	0.1631	5.7014	0.0252	2.5393	0.1287
BGC05	7.8370	0.1345	5.0311	0.0314	2.4180	0.2204
CAB01	9.3222	0.1459	6.1034	0.0329	3.3513	0.1012

Min	0.1345	0.0252431	0.0712674
Max	0.2130	0.0328819	0.2204167

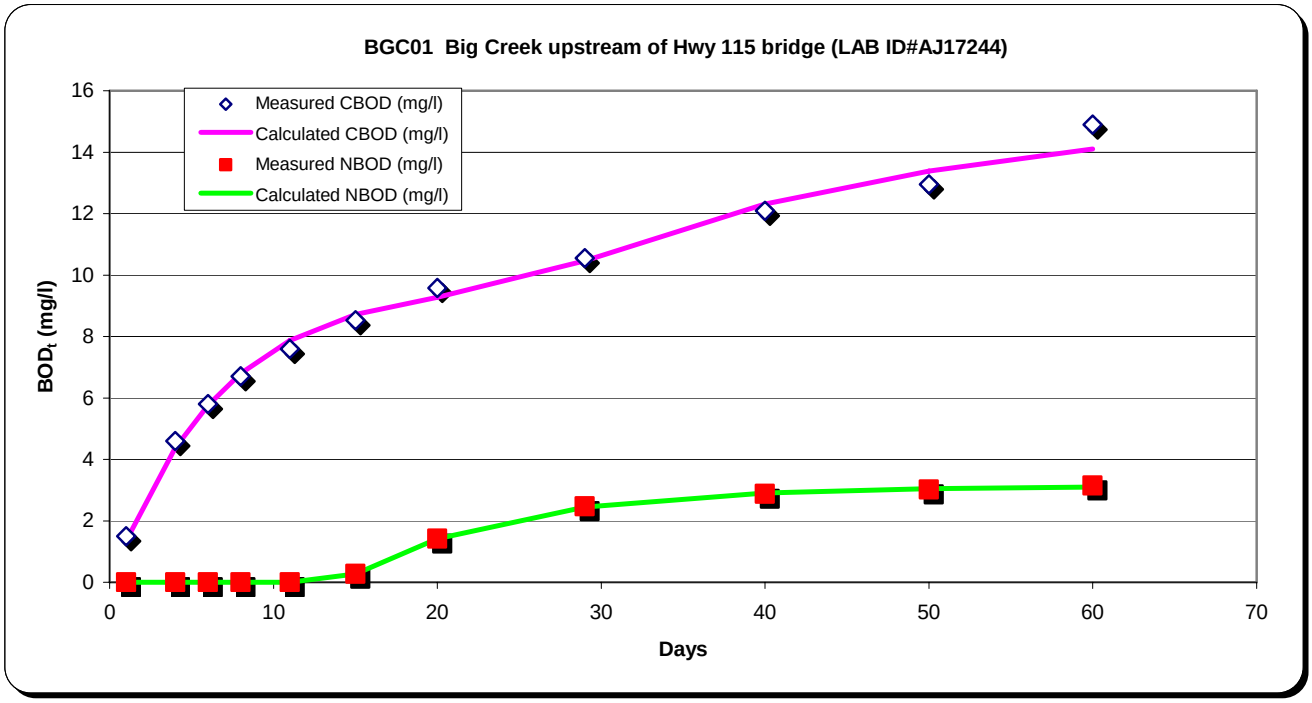
Big Creek 101506
BOD Decay Rates By Reach

Reach	CBOD 1 k rate (1/day)	CBOD 2 k rate (1/day)	NBOD k rate (1/day)	Justification
1	0.1806	0.0344	0.0868	Average (BGC01,BGC02)
2	0.1915	0.0306	0.0886	Average (BGC02,BGC03)
3	0.1666	0.0283	0.1173	Average (BGC03,BGC04)

Select Site to Graph:

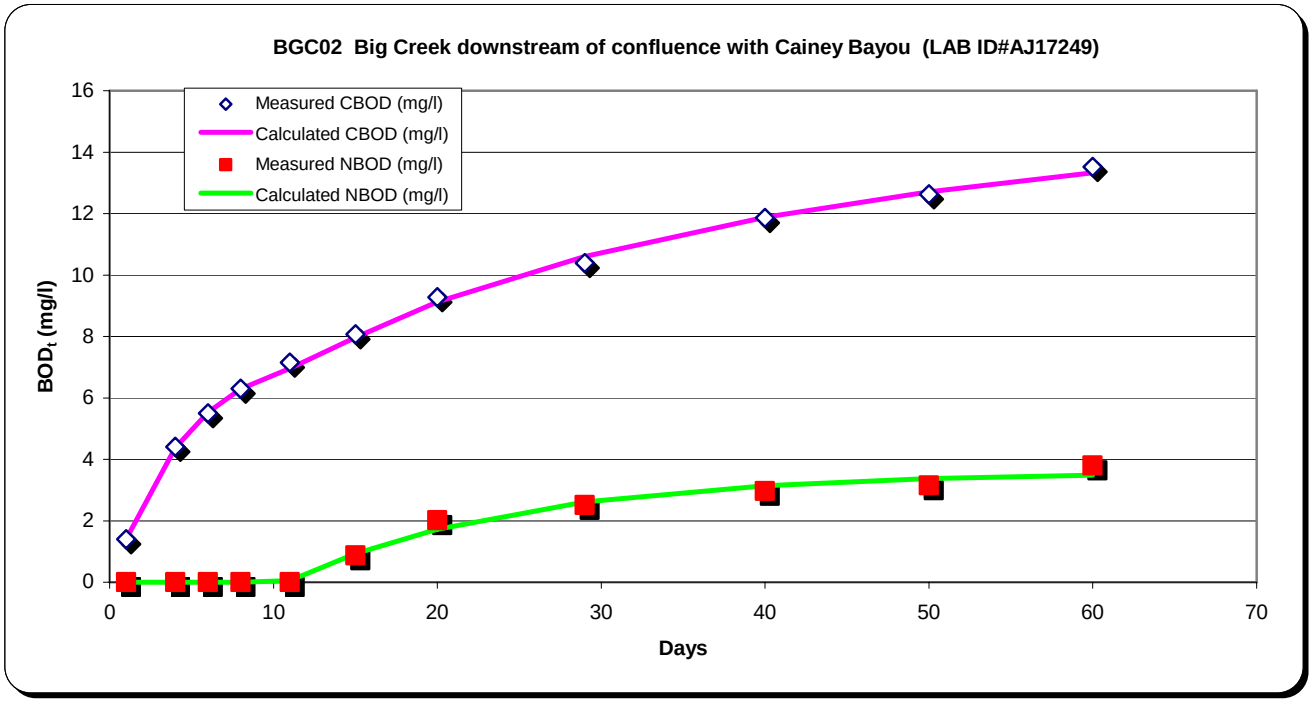
	NBOD	CBOD1	CBOD2
UBOD (mg/l)	3.1277525	9.7808332	5.83083963
k rate (1/day)	0.1023958	0.1482292	0.03887331
Lag time (days)	14.097222	0	25.1534642

Breakpoint: 20th day



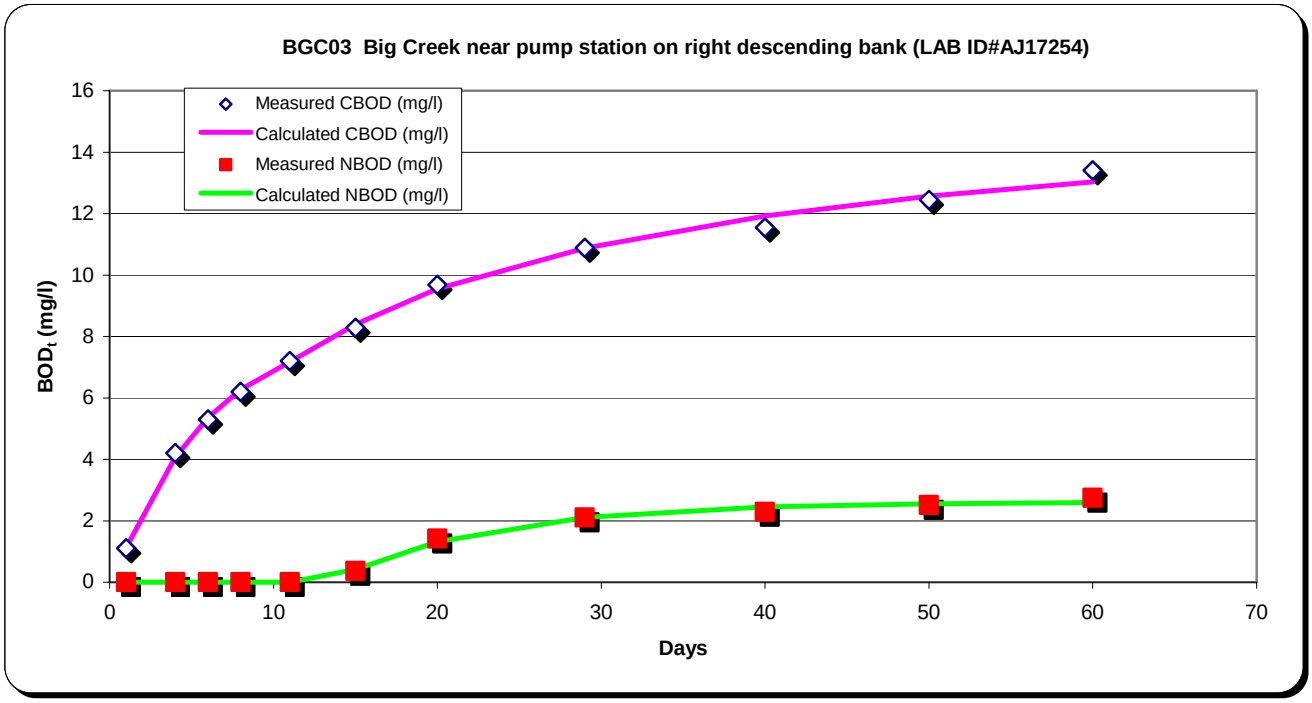
	NBOD	CBOD1	CBOD2
UBOD (mg/l)	3.5904212	7.7072911	7.39650488
k rate (1/day)	0.0712674	0.2129688	0.02989005
Lag time (days)	10.801794	0.0607639	12.25

Breakpoint: 8th day



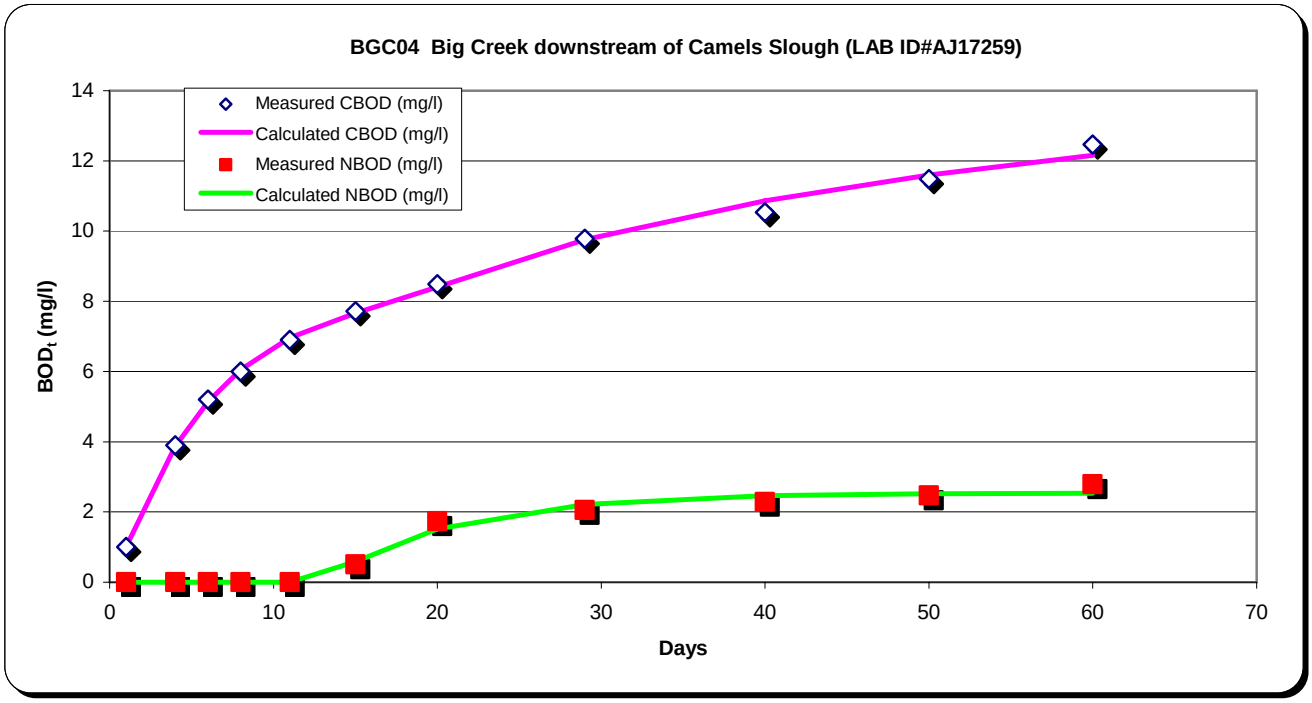
	NBOD	CBOD1	CBOD2
UBOD (mg/l)	2.6087084	8.5166674	5.79854918
k rate (1/day)	0.1058333	0.17	0.03135417
Lag time (days)	13.368055	0.1701389	11.7436352

Breakpoint: 11th day



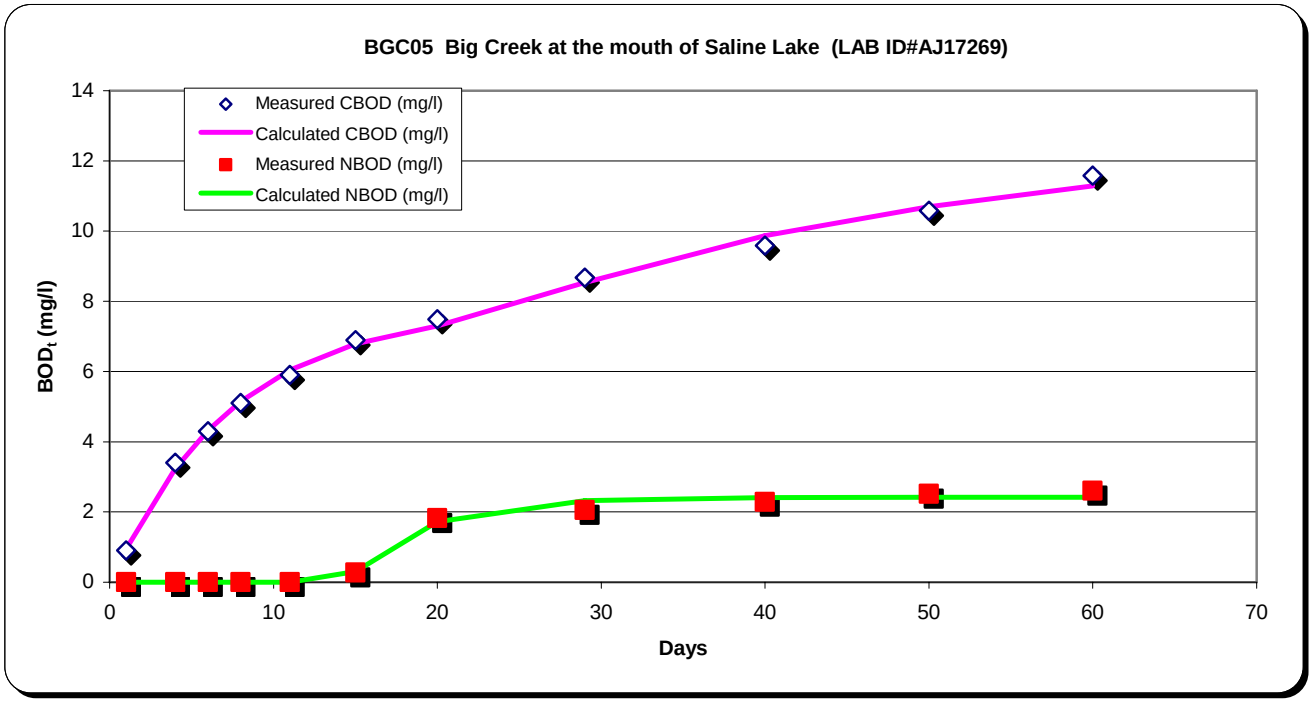
	NBOD	CBOD1	CBOD2
UBOD (mg/l)	2.5392592	8.4150734	5.70140505
k rate (1/day)	0.12875	0.163125	0.02524305
Lag time (days)	12.979166	0.21875	17.6505604

Breakpoint: 15th day



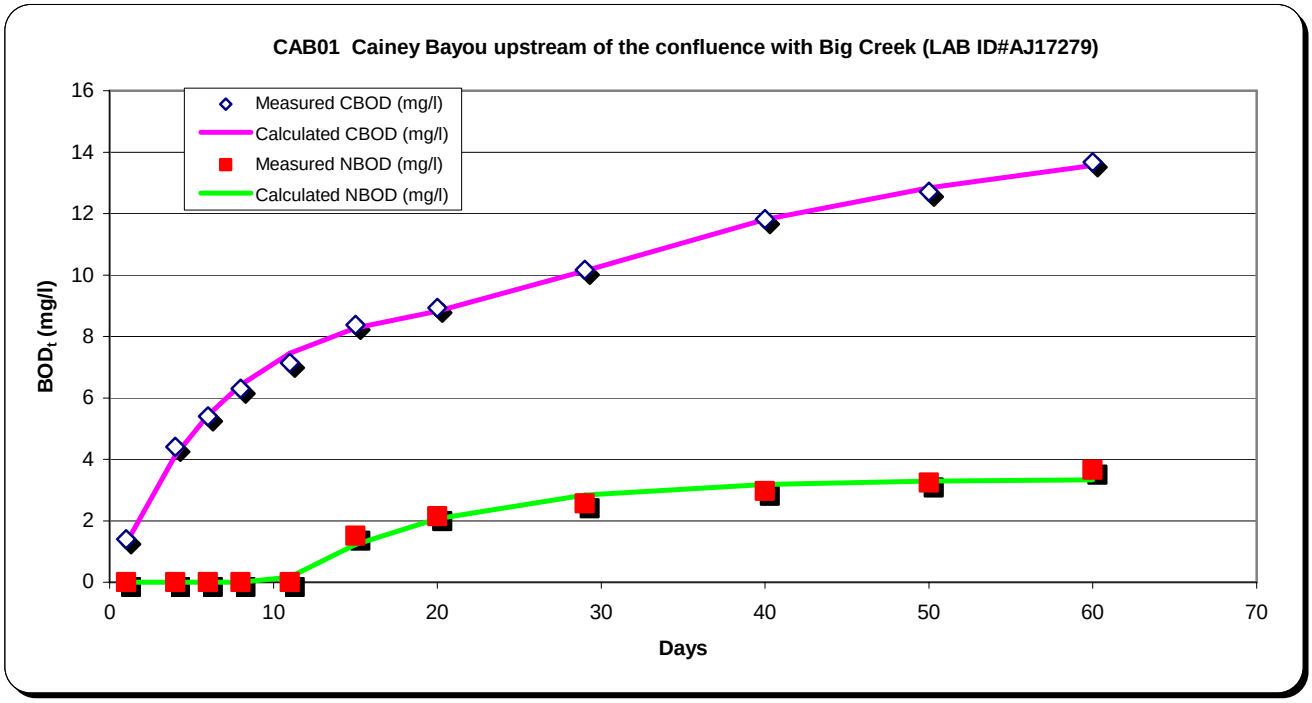
	NBOD	CBOD1	CBOD2
UBOD (mg/l)	2.4179742	7.8370018	5.03113127
k rate (1/day)	0.2204167	0.1344792	0.03141782
Lag time (days)	14.388888	0.0364583	23.0926399

Breakpoint: 15th day



	NBOD	CBOD1	CBOD2
UBOD (mg/l)	3.3513331	9.322196	6.10339355
k rate (1/day)	0.10125	0.1459375	0.03288194
Lag time (days)	10.5	0	23.8259697

Breakpoint: 20th day



Appendix F6– Dispersion and Dye Data

Big Creek Dye Arc Table Calculations Page 1 of 4

Y	X	RUN	Value	RKM	Kilometers Distance from Dye Dump	Meters Distance from Dye Dump	TEMP	Date + Time	Run - Dump	PROJECTION	ZONE
		dump		7.18				6/6/06 17:35		NAD 83 CONUS	Zone 15 North
3463781	582788	RUN 1 BG	1.8	6.92	0.26	256.88	31.45	6/6/06 11:22:59 PM	0.241528	NAD 83 CONUS	Zone 15 North
3463773	582732	RUN 1 01	2.9	6.98	0.20	199.98	32.15	6/6/06 11:24:05 PM	0.242292	NAD 83 CONUS	Zone 15 North
3463784	582702	RUN 1 02	4.1	7.01	0.17	168.16	32.14	6/6/06 11:24:51 PM	0.242824	NAD 83 CONUS	Zone 15 North
3463802	582672	RUN 1 03	8.3	7.05	0.13	133.34	32.3	6/6/06 11:25:42 PM	0.243414	NAD 83 CONUS	Zone 15 North
3463831	582640	RUN 1 04	10.9	7.10	0.08	84.41	32.55	6/6/06 11:26:42 PM	0.244109	NAD 83 CONUS	Zone 15 North
3463864	582625	RUN 1 05	20.1	7.14	0.04	44.50	32.28	6/6/06 11:27:35 PM	0.244722	NAD 83 CONUS	Zone 15 North
3463919	582619	RUN 1 06	20.2	7.19	-0.01	-10.77	31.81	6/6/06 11:28:45 PM	0.245532	NAD 83 CONUS	Zone 15 North
3463966	582622	RUN 1 07	22.2	7.24	-0.06	-57.87	30.81	6/6/06 11:29:56 PM	0.246354	NAD 83 CONUS	Zone 15 North
3464002	582624	RUN 1 08	31.7	7.28	-0.10	-95.42	30.35	6/6/06 11:30:54 PM	0.247025	NAD 83 CONUS	Zone 15 North
3464048	582643	RUN 1 09	28.6	7.32	-0.14	-143.99	30.55	6/6/06 11:32:03 PM	0.247824	NAD 83 CONUS	Zone 15 North
3464096	582638	RUN 1 10	27.0	7.37	-0.19	-190.07	31.01	6/6/06 11:33:11 PM	0.248611	NAD 83 CONUS	Zone 15 North
3464117	582593	RUN 1 11	43.5	7.41	-0.23	-230.93	29.81	6/6/06 11:34:24 PM	0.249456	NAD 83 CONUS	Zone 15 North
3464098	582547	RUN 1 12	26.4	7.46	-0.28	-280.58	29.86	6/6/06 11:35:34 PM	0.250266	NAD 83 CONUS	Zone 15 North
3464074	582511	RUN 1 13	24.3	7.50	-0.32	-322.57	29.86	6/6/06 11:36:34 PM	0.250961	NAD 83 CONUS	Zone 15 North
3464058	582484	RUN 1 14	6.7	7.53	-0.35	-353.92	30.02	6/6/06 11:37:21 PM	0.251505	NAD 83 CONUS	Zone 15 North
3464042	582457	RUN 1 15	3.3	7.57	-0.39	-385.29	29.95	6/6/06 11:38:21 PM	0.252199	NAD 83 CONUS	Zone 15 North
3464022	582431	RUN 1 BG2	1.6	7.60	-0.42	-416.37	29.84	6/6/06 11:39:17 PM	0.252847	NAD 83 CONUS	Zone 15 North
								Dye Run 1			
								Average Time	0.247145		
								Average Time in Hours	5.931487		
								Average Time in Seconds	**21353.352941**		

Big Creek Dye Arc Table Calculations Page 2 of 4

Y	X	RUN	Value	RKM	Kilometers Distance from Dye Dump	Meters Distance from Dye Dump	TEMP	Date + Time	Run - Dump	PROJECTION	ZONE
3463979	582183	RUN 2 BG	1.7	7.861	-0.68	-680.961	28.09	6/7/06 1:09:57 PM	0.815810	NAD 83 CONUS	Zone 15 North
3463971	582223	RUN 2 01	2.1	7.8191	-0.64	-639.114	28.11	6/7/06 1:11:10 PM	0.816655	NAD 83 CONUS	Zone 15 North
3463965	582262	RUN 2 02	3.0	7.7786	-0.60	-598.599	28.11	6/7/06 1:12:11 PM	0.817361	NAD 83 CONUS	Zone 15 North
3463972	582300	RUN 2 03	5.3	7.7386	-0.56	-558.629	28.11	6/7/06 1:13:10 PM	0.818044	NAD 83 CONUS	Zone 15 North
3463982	582323	RUN 2 04	11.5	7.7138	-0.53	-533.849	28.13	6/7/06 1:13:58 PM	0.818600	NAD 83 CONUS	Zone 15 North
3463998	582357	RUN 2 05	13.4	7.6746	-0.49	-494.582	28.16	6/7/06 1:14:58 PM	0.819294	NAD 83 CONUS	Zone 15 North
3464012	582387	RUN 2 06	16.2	7.64	-0.46	-461.131	28.19	6/7/06 1:16:09 PM	0.820116	NAD 83 CONUS	Zone 15 North
3464033	582424	RUN 2 07	18.3	7.5992	-0.42	-419.168	28.25	6/7/06 1:17:19 PM	0.820926	NAD 83 CONUS	Zone 15 North
3464052	582461	RUN 2 08	19.6	7.557	-0.38	-377	28.28	6/7/06 1:18:32 PM	0.821771	NAD 83 CONUS	Zone 15 North
3464070	582491	RUN 2 09	16.2	7.5223	-0.34	-342.29	28.32	6/7/06 1:19:35 PM	0.822500	NAD 83 CONUS	Zone 15 North
3464095	582535	RUN 2 10	13.4	7.4718	-0.29	-291.78	28.35	6/7/06 1:20:50 PM	0.823368	NAD 83 CONUS	Zone 15 North
3464117	582583	RUN 2 11	15.2	7.4204	-0.24	-240.421	28.39	6/7/06 1:22:07 PM	0.824259	NAD 83 CONUS	Zone 15 North
3464111	582632	RUN 2 12	15.3	7.3787	-0.20	-198.723	28.4	6/7/06 1:23:24 PM	0.825150	NAD 83 CONUS	Zone 15 North
3464056	582646	RUN 2 13	12.3	7.3325	-0.15	-152.465	28.43	6/7/06 1:24:51 PM	0.826157	NAD 83 CONUS	Zone 15 North
3464022	582634	RUN 2 14	16.3	7.2964	-0.12	-116.413	28.5	6/7/06 1:25:55 PM	0.826898	NAD 83 CONUS	Zone 15 North
3463996	582628	RUN 2 15	21.0	7.2694	-0.09	-89.4203	28.5	6/7/06 1:26:50 PM	0.827535	NAD 83 CONUS	Zone 15 North
3463954	582620	RUN 2 16	14.7	7.2258	-0.05	-45.828	28.5	6/7/06 1:28:00 PM	0.828345	NAD 83 CONUS	Zone 15 North
3463911	582622	RUN 2 17	12.1	7.1828	0.00	-2.76818	28.6	6/7/06 1:29:14 PM	0.829201	NAD 83 CONUS	Zone 15 North
3463875	582626	RUN 2 18	8.9	7.1465	0.03	33.53636	28.5	6/7/06 1:30:12 PM	0.829873	NAD 83 CONUS	Zone 15 North
3463826	582648	RUN 2 19	8.6	7.0871	0.09	92.88866	28.6	6/7/06 1:31:30 PM	0.830775	NAD 83 CONUS	Zone 15 North
3463804	582679	RUN 2 20	8.9	7.0409	0.14	139.1428	28.6	6/7/06 1:32:39 PM	0.831574	NAD 83 CONUS	Zone 15 North
3463790	582705	RUN 2 21	5.1	7.0104	0.17	169.5626	28.7	6/7/06 1:33:42 PM	0.832303	NAD 83 CONUS	Zone 15 North
3463776	582752	RUN 2 22	3.7	6.9615	0.22	218.5081	28.7	6/7/06 1:35:07 PM	0.833287	NAD 83 CONUS	Zone 15 North
3463776	582789	RUN 2 23	2.5	6.9223	0.26	257.7368	28.7	6/7/06 1:36:02 PM	0.833924	NAD 83 CONUS	Zone 15 North
3463800	582821	RUN 2 BG2	1.8	6.8679	0.31	312.1388	28.7	6/7/06 1:37:08 PM	0.834687	NAD 83 CONUS	Zone 15 North
								Dye Run 2			
								Average Time	0.825137		
								Average Time in Hours	19.803278		
								Average Time in Seconds	**71291.800000**		

Big Creek Dye Arc Table Calculations Page 3 of 4

Y	X	RUN	Value	RKM	Kilometers Distance from Dye Dump	Meters Distance from Dye Dump	TEMP	Date + Time	Run - Dump	PROJECTION	ZONE
3463982	582041	RUN 03 BG	1.86	8.01	-0.83	-825.277	29.73	6/7/06 10:01:50 PM	1.185174	NAD 83 CONUS	Zone 15 North
3463992	582067	RUN 03 01	2.19	7.98	-0.80	-798.217	30.53	6/7/06 10:02:42 PM	1.185775	NAD 83 CONUS	Zone 15 North
3463995	582104	RUN 03 02	2.52	7.94	-0.76	-761.83	30.35	6/7/06 10:03:46 PM	1.186516	NAD 83 CONUS	Zone 15 North
3463989	582148	RUN 03 03	4.82	7.90	-0.72	-717.33	30.59	6/7/06 10:04:47 PM	1.187222	NAD 83 CONUS	Zone 15 North
3463974	582209	RUN 03 04	6.58	7.83	-0.65	-653.069	30.72	6/7/06 10:06:09 PM	1.188171	NAD 83 CONUS	Zone 15 North
3463965	582248	RUN 03 05	9.61	7.79	-0.61	-612.599	30.58	6/7/06 10:06:58 PM	1.188738	NAD 83 CONUS	Zone 15 North
3463971	582296	RUN 03 06	11.60	7.74	-0.56	-562.928	30.49	6/7/06 10:08:16 PM	1.189641	NAD 83 CONUS	Zone 15 North
3463998	582355	RUN 03 07	12.21	7.68	-0.50	-497.672	30.45	6/7/06 10:09:49 PM	1.190718	NAD 83 CONUS	Zone 15 North
3464015	582391	RUN 03 08	13.29	7.64	-0.46	-456.344	30.78	6/7/06 10:10:48 PM	1.191400	NAD 83 CONUS	Zone 15 North
3464054	582458	RUN 03 09	14.39	7.56	-0.38	-378.682	30.32	6/7/06 10:12:24 PM	1.192512	NAD 83 CONUS	Zone 15 North
3464084	582508	RUN 03 10	13.99	7.50	-0.32	-320.867	30.55	6/7/06 10:13:42 PM	1.193414	NAD 83 CONUS	Zone 15 North
3464117	582585	RUN 03 11	14.61	7.42	-0.24	-238.523	31	6/7/06 10:15:27 PM	1.194630	NAD 83 CONUS	Zone 15 North
3464101	582639	RUN 03 12	13.72	7.37	-0.19	-193.897	31.14	6/7/06 10:16:38 PM	1.195451	NAD 83 CONUS	Zone 15 North
3464016	582630	RUN 03 13	9.63	7.29	-0.11	-109.765	30.88	6/7/06 10:19:00 PM	1.197095	NAD 83 CONUS	Zone 15 North
3463944	582617	RUN 03 14	8.31	7.22	-0.04	-35.3894	30.7	6/7/06 10:20:33 PM	1.198171	NAD 83 CONUS	Zone 15 North
3463892	582621	RUN 03 15	6.74	7.16	0.02	16.37415	30.65	6/7/06 10:21:50 PM	1.199062	NAD 83 CONUS	Zone 15 North
3463847	582631	RUN 03 16	4.08	7.11	0.07	66.07072	30.6	6/7/06 10:23:06 PM	1.199942	NAD 83 CONUS	Zone 15 North
3463815	582656	RUN 03 17	3.37	7.07	0.11	107.1814	30.48	6/7/06 10:24:08 PM	1.200660	NAD 83 CONUS	Zone 15 North
3463781	582725	RUN 03 18	3.32	6.99	0.19	191.1366	30.9	6/7/06 10:25:40 PM	1.201725	NAD 83 CONUS	Zone 15 North
3463776	582767	RUN 03 19	2.37	6.94	0.24	235.7453	30.71	6/7/06 10:26:43 PM	1.202454	NAD 83 CONUS	Zone 15 North
3463800	582816	RUN 03 20	2.33	6.87	0.31	310.3655	31.01	6/7/06 10:28:00 PM	1.203345	NAD 83 CONUS	Zone 15 North
3463846	582845	RUN 03 21	2.03	6.82	0.36	363.4341	30.88	6/7/06 10:29:13 PM	1.204190	NAD 83 CONUS	Zone 15 North
3463898	582898	RUN 03 BG2	1.81	6.75	0.43	433.9185	31.04	6/7/06 10:30:52 PM	1.205336	NAD 83 CONUS	Zone 15 North

Dye Run 3	
Average Time	1.194841
Average Time in Hours	28.676184
Average Time in Seconds	**103234.260869**

Big Creek Dye Arc Table Calculations Page 4 of 4

Y	X	RUN	Value	RKM	Kilometers Distance from Dye Dump	Meters Distance from Dye Dump	TEMP	Date + Time	Run - Dump	PROJECTION	ZONE
3463761	581895	RUN 04 BG	1.76	8.29	-1.11	-1109.99	28.3	6/8/06 1:39:04 PM	1.836030	NAD 83 CONUS	Zone 15 North
3463800	581903	RUN 04 01	1.98	8.25	-1.07	-1070.4	28.32	6/8/06 1:40:09 PM	1.836782	NAD 83 CONUS	Zone 15 North
3463903	581937	RUN 04 02	2.86	8.14	-0.96	-959.561	28.33	6/8/06 1:42:15 PM	1.838241	NAD 83 CONUS	Zone 15 North
3463982	582034	RUN 04 03	3.71	8.01	-0.83	-831.78	28.37	6/8/06 1:44:39 PM	1.839907	NAD 83 CONUS	Zone 15 North
3463993	582099	RUN 04 04	5.32	7.95	-0.77	-766.83	28.42	6/8/06 1:46:05 PM	1.840903	NAD 83 CONUS	Zone 15 North
3463975	582200	RUN 04 05	6.24	7.84	-0.66	-663.513	28.43	6/8/06 1:48:02 PM	1.842257	NAD 83 CONUS	Zone 15 North
3463969	582291	RUN 04 06	7.93	7.75	-0.57	-568.31	28.55	6/8/06 1:49:59 PM	1.843611	NAD 83 CONUS	Zone 15 North
3463985	582333	RUN 04 07	8.48	7.70	-0.52	-523.031	28.61	6/8/06 1:51:02 PM	1.844340	NAD 83 CONUS	Zone 15 North
3464018	582399	RUN 04 08	10.10	7.63	-0.45	-447.8	28.6	6/8/06 1:52:31 PM	1.845370	NAD 83 CONUS	Zone 15 North
3464057	582466	RUN 04 09	10.35	7.55	-0.37	-370.22	28.63	6/8/06 1:54:05 PM	1.846458	NAD 83 CONUS	Zone 15 North
3464107	582547	RUN 04 10	9.75	7.46	-0.28	-277.735	28.59	6/8/06 1:55:55 PM	1.847731	NAD 83 CONUS	Zone 15 North
3464111	582628	RUN 04 11	9.18	7.38	-0.20	-201.024	28.55	6/8/06 1:57:32 PM	1.848854	NAD 83 CONUS	Zone 15 North
3463989	582624	RUN 04 12	8.70	7.26	-0.08	-82.4203	28.49	6/8/06 1:59:54 PM	1.850498	NAD 83 CONUS	Zone 15 North
3463871	582622	RUN 04 13	6.15	7.14	0.04	37.39614	28.67	6/8/06 2:02:05 PM	1.852014	NAD 83 CONUS	Zone 15 North
3463794	582681	RUN 04 14	5.01	7.04	0.14	144.6313	28.77	6/8/06 2:03:59 PM	1.853333	NAD 83 CONUS	Zone 15 North
3463773	582782	RUN 04 15	4.28	6.93	0.25	250.6562	28.81	6/8/06 2:05:57 PM	1.854699	NAD 83 CONUS	Zone 15 North
3463820	582837	RUN 04 16	3.85	6.84	0.34	336.5132	28.74	6/8/06 2:07:31 PM	1.855787	NAD 83 CONUS	Zone 15 North
3463901	582907	RUN 04 17	3.28	6.74	0.44	440.0538	28.72	6/8/06 2:09:31 PM	1.857176	NAD 83 CONUS	Zone 15 North
3463904	583004	RUN 04 18	2.71	6.65	0.53	529.8041	28.89	6/8/06 2:11:48 PM	1.858762	NAD 83 CONUS	Zone 15 North
3463851	583077	RUN 04 19	2.37	6.57	0.61	612.6475	28.8	6/8/06 2:13:35 PM	1.860000	NAD 83 CONUS	Zone 15 North
3463848	583169	RUN 04 20	2.00	6.44	0.74	741.601	28.99	6/8/06 2:15:29 PM	1.861319	NAD 83 CONUS	Zone 15 North
3463876	583184	RUN 04 BG2	1.85	6.4071	0.77	772.8874	28.86	6/8/06 2:16:30 PM	1.862025	NAD 83 CONUS	Zone 15 North
								Dye Run 3			
								Average Time	1.848914		
								Average Time in Hours	44.373927		
								Average Time in Seconds	**159746.136364**		

Big Creek Cross Section Summary

SITE	WIDTH (feet)	WIDTH (meters)	DEPTH (feet)	DEPTH (meters)
Big Creek XS 1	165.000	50.292	4.114	1.254
Big Creek XS 2	159.000	48.463	4.949	1.509
Big Creek XS 3	186.000	56.693	3.811	1.162
Big Creek XS 4	182.000	55.474	4.922	1.500
Dye Run 1 (Average XS2, XS3)	172.500	52.578	4.380	1.335
Dye Run 2 (XS2)	159.000	48.463	4.949	1.509
Dye Run 3 (Average XS2, XS3)	172.500	52.578	4.380	1.335
Dye Run 4 (Average XS1,2,3,4)	173.000	52.730	4.449	1.356

Big Creek Subsegment 101506 Dispersion Summary

Run Number	Dispersion Coefficeint (Kd)	Elapsed Time (hrs)
Dye Run 1	0.530	5.931
Dye Run 2	0.483	19.803
Dye Run 3	0.343	28.676
Dye Run 4	0.644	44.374

For the purposes of this TMDL the Dispersion coefficient for Dye Run 4 will be used.
This is because the data was gathered over the longest time period allowing for a better dispersion of the dye into the water body.

Any changes to the locations of the data on this page will result in the macro not working.

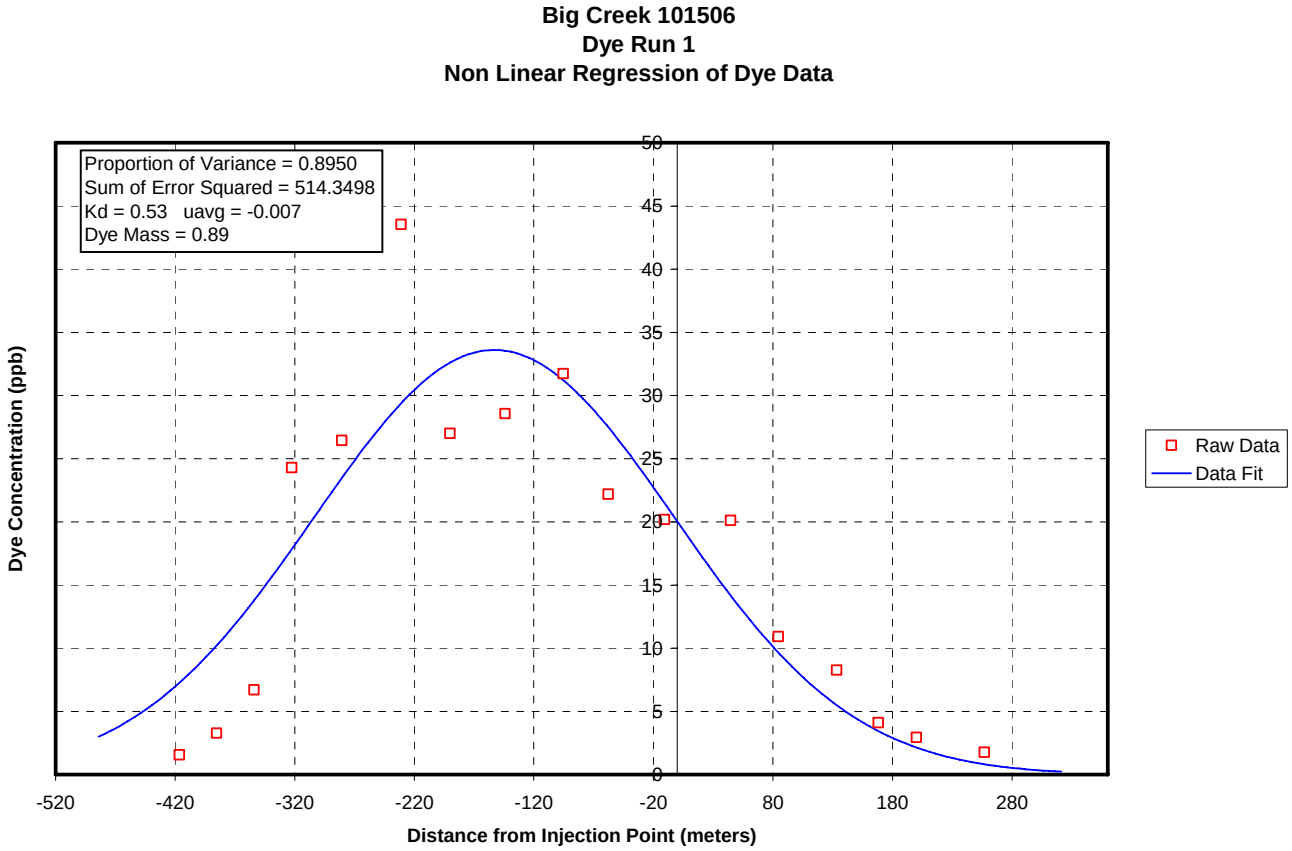
Dye Run 1 User Inputs	Depth of Stream (meters)	1.335
	Width of Stream (meters)	52.578
	Time Elapsed Since Dye Injection (sec)	21353
	[1]Mass of Solution Injected (kg)	35.000
	Number of Iterations	20
[2]Initial Guess	K_d : Diffusion (m^2/s)	0.5000

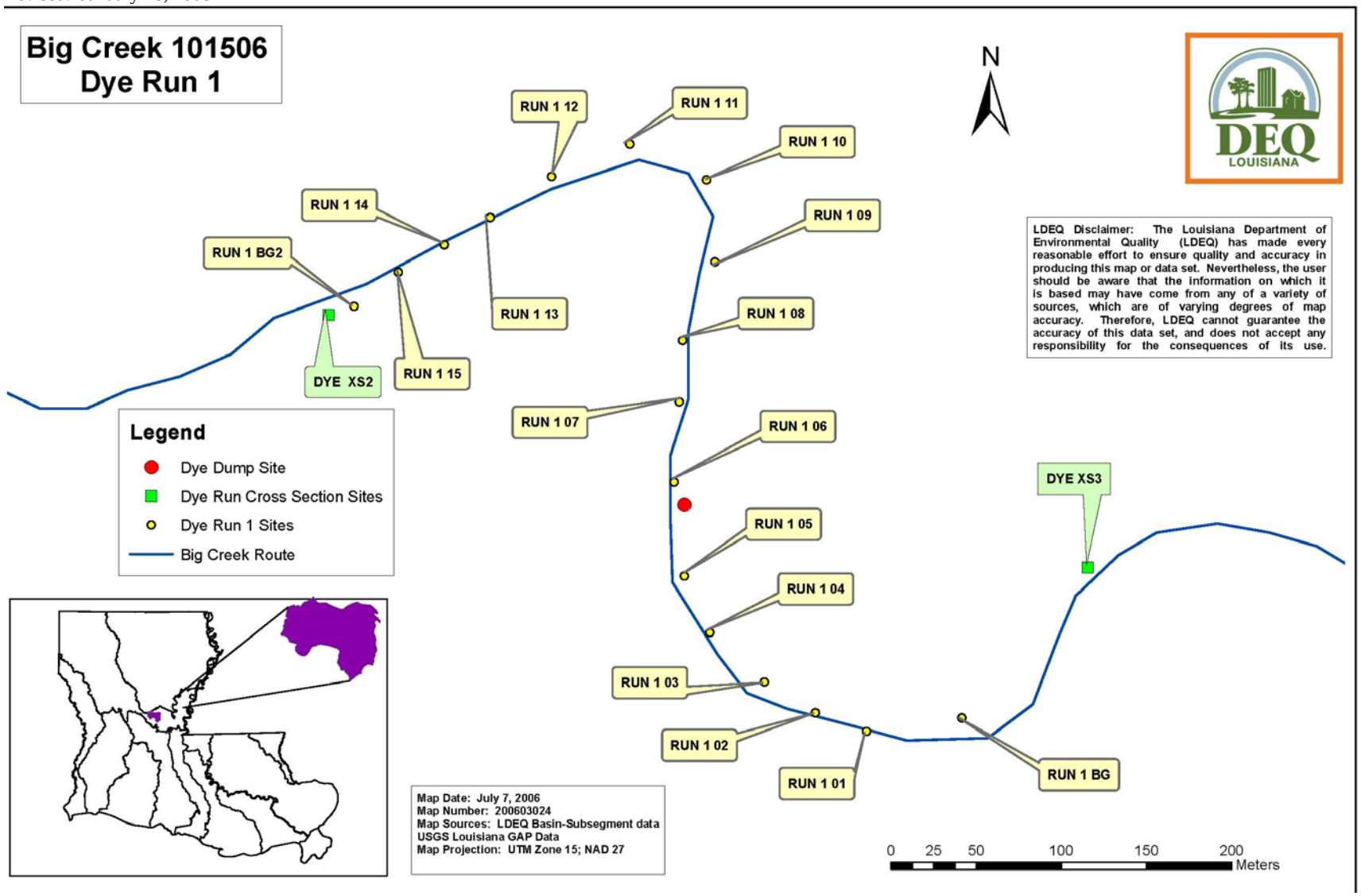
Run Dispersion Routine

[1]Mass of solution injected is multiplied by 0.2 since the solution is 20% dye

[2]Initial guesses must be chosen carefully chosen since they control to a great degree the success and rate of convergence of the Gauss–Newton algorithm

Dye Run 1 Observed Dye Data	
f(X): Concentration (ppb)	**X: Distance From Injection Point (meters)**
1.76	256.876025
2.94	199.975698
4.1	168.164430
8.26	133.343684
10.92	84.408682
20.11	44.495366
20.18	-10.768185
22.2	-57.866602
31.74	-95.420259
28.56	-143.985887
27	-190.070465
43.54	-230.933737
26.44	-280.581496
24.29	-322.567827
6.7	-353.923825
3.28	-385.286338
1.56	-416.373956


Big Creek 101506
Dye Run 1
Non Linear Regression of Dye Data
Proportion of Variance = 0.8950
Sum of Error Squared = 514.3498
Kd = 0.53 uavg = -0.007
Dye Mass = 0.89
Dye Concentration (ppb)
Distance from Injection Point (meters)
Raw Data
Data Fit
0
5
10
15
20
25
30
35
40
45
50
-520
-420
-320
-220
-120
-20
80
180
280


Big Creek 101506
Dye Run 1
N
DEQ
LOUISIANA
RUN 1 12
RUN 1 11
RUN 1 10
RUN 1 09
RUN 1 08
RUN 1 07
RUN 1 06
RUN 1 05
RUN 1 04
RUN 1 03
RUN 1 02
RUN 1 01
RUN 1 BG
RUN 1 14
RUN 1 BG2
RUN 1 13
RUN 1 15
DYE XS2
DYE XS3
LDEQ Disclaimer: The Louisiana Department of Environmental Quality (LDEQ) has made every reasonable effort to ensure quality and accuracy in producing this map or data set. Nevertheless, the user should be aware that the information on which it is based may have come from any of a variety of sources, which are of varying degrees of map accuracy. Therefore, LDEQ cannot guarantee the accuracy of this data set, and does not accept any responsibility for the consequences of its use.
Legend
Dye Dump Site
Dye Run Cross Section Sites
Dye Run 1 Sites
Big Creek Route
Map Date: July 7, 2006
Map Number: 200603024
Map Sources: LDEQ Basin-Subsegment data
USGS Louisiana GAP Data
Map Projection: UTM Zone 15; NAD 27
0 25 50 100 150 200
Meters

Dye Run 2 User Inputs	Depth of Stream (meters)	1.509
	Width of Stream (meters)	48.463
	Time Elapsed Since Dye Injection (sec)	71292
	[1]Mass of Solution Injected (kg)	35.000
	Number of Iterations	20
[2]Initial Guess	K_d : Diffusion (m^2/s)	0.5000

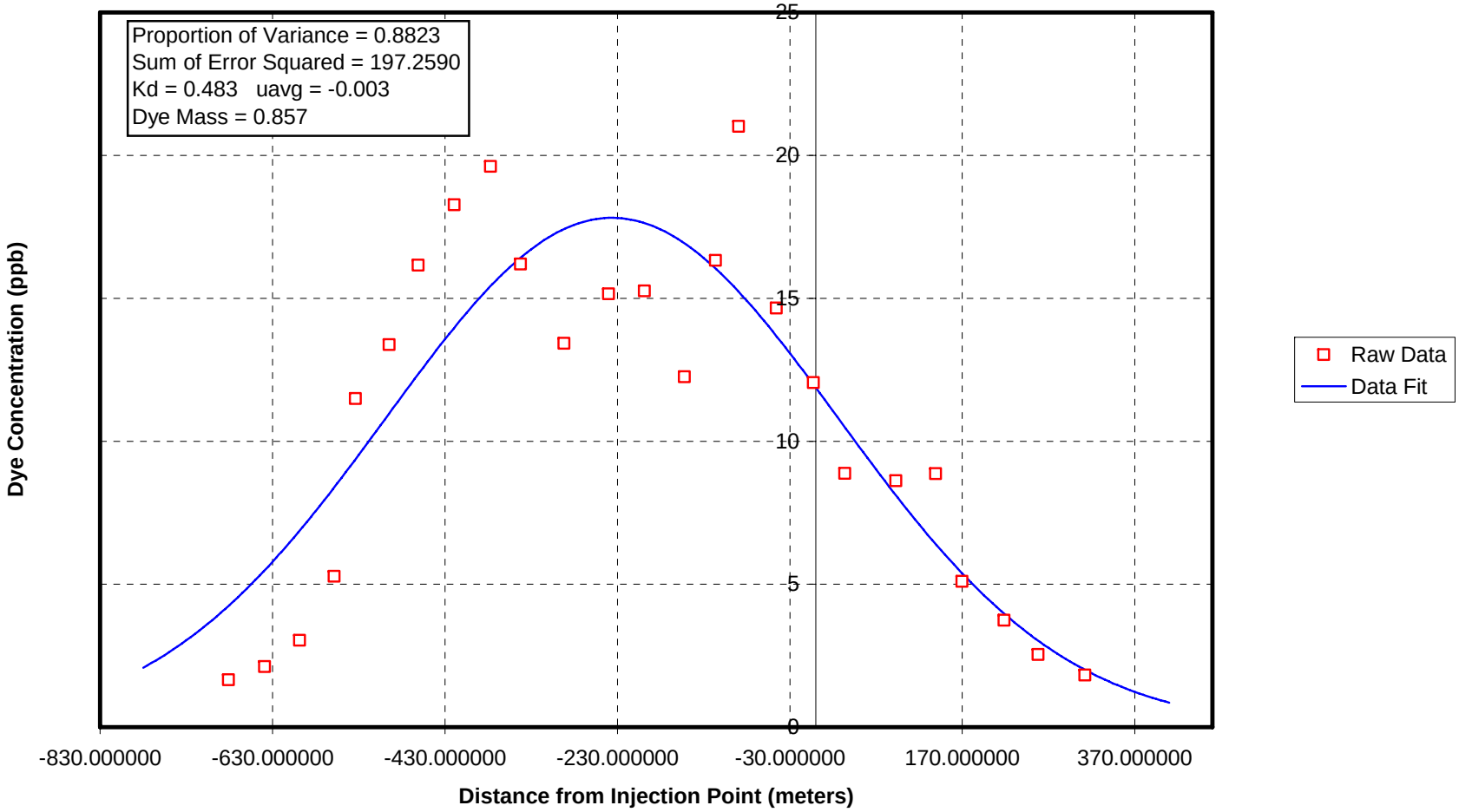
Run Dispersion Routine

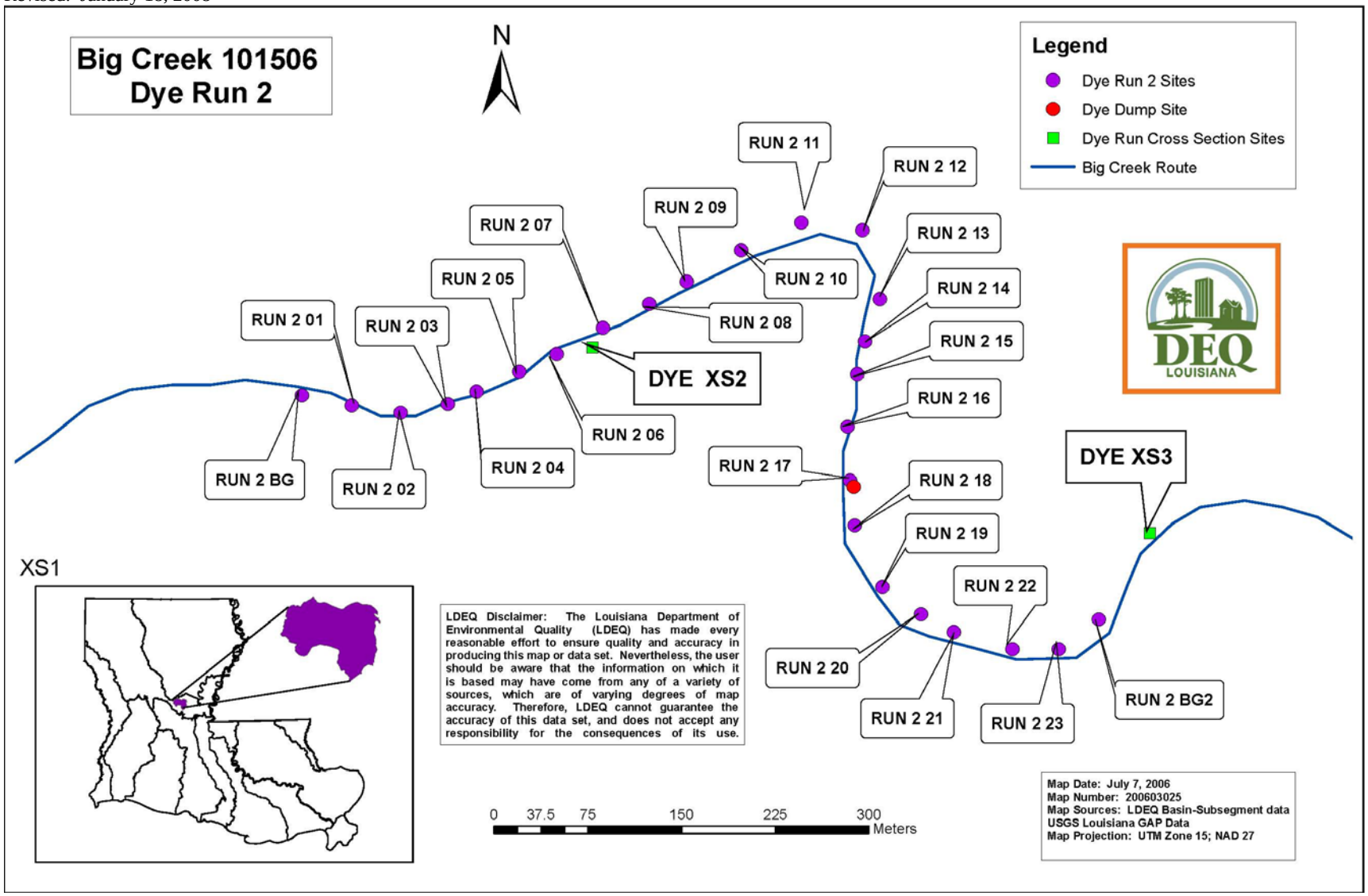
[1]Mass of solution injected is multiplied by 0.2 since the solution is 20% dye

[2]Initial guesses must be chosen carefully chosen since they control to a great degree the success and rate of convergence of the Gauss–Newton algorithm

Dye Run 2 Observed Dye Data	
f(X): Concentration (ppb)	**X: Distance From Injection Point (meters)**
1.66	-680.960846
2.12	-639.113935
3.04	-598.599437
5.28	-558.628741
11.49	-533.849324
13.38	-494.582242
16.16	-461.131176
18.27	-419.168419
19.61	-377.000005
16.2	-342.290373
13.43	-291.780016
15.16	-240.420570
15.26	-198.723361
12.26	-152.465104
16.33	-116.412611
21.01	-89.420259
14.66	-45.827961
12.05	-2.768185
8.88	33.536362
8.62	92.888665
8.87	139.142824
5.10	169.562648
3.74	218.508093
2.54	257.7368043
1.82	312.1387993

Big Creek 101605
Dye Run 2
Non Linear Regression of Dye Data




Big Creek 101506
Dye Run 2
N
Legend
Dye Run 2 Sites
Dye Dump Site
Dye Run Cross Section Sites
Big Creek Route
RUN 2 11
RUN 2 12
RUN 2 09
RUN 2 07
RUN 2 13
RUN 2 05
RUN 2 10
RUN 2 14
RUN 2 01
RUN 2 03
RUN 2 08
RUN 2 15
DYE XS2
RUN 2 16
RUN 2 06
RUN 2 04
RUN 2 17
RUN 2 18
DYE XS3
RUN 2 BG
RUN 2 02
RUN 2 19
XS1
RUN 2 22
RUN 2 20
RUN 2 21
RUN 2 23
RUN 2 BG2
LDEQ Disclaimer: The Louisiana Department of Environmental Quality (LDEQ) has made every reasonable effort to ensure quality and accuracy in producing this map or data set. Nevertheless, the user should be aware that the information on which it is based may have come from any of a variety of sources, which are of varying degrees of map accuracy. Therefore, LDEQ cannot guarantee the accuracy of this data set, and does not accept any responsibility for the consequences of its use.
0 37.5 75 150 225 300
Meters
Map Date: July 7, 2006
Map Number: 200603025
Map Sources: LDEQ Basin-Subsegment data
USGS Louisiana GAP Data
Map Projection: UTM Zone 15; NAD 27
DEQ
LOUISIANA

Dye Run 3 User Inputs	Depth of Stream (meters)	1.335
	Width of Stream (meters)	52.578
	Time Elapsed Since Dye Injection (sec)	103234
	[1]Mass of Solution Injected (kg)	35.000
	Number of Iterations	20
[2]Initial Guess	K_d : Diffusion (m^2/s)	0.5000

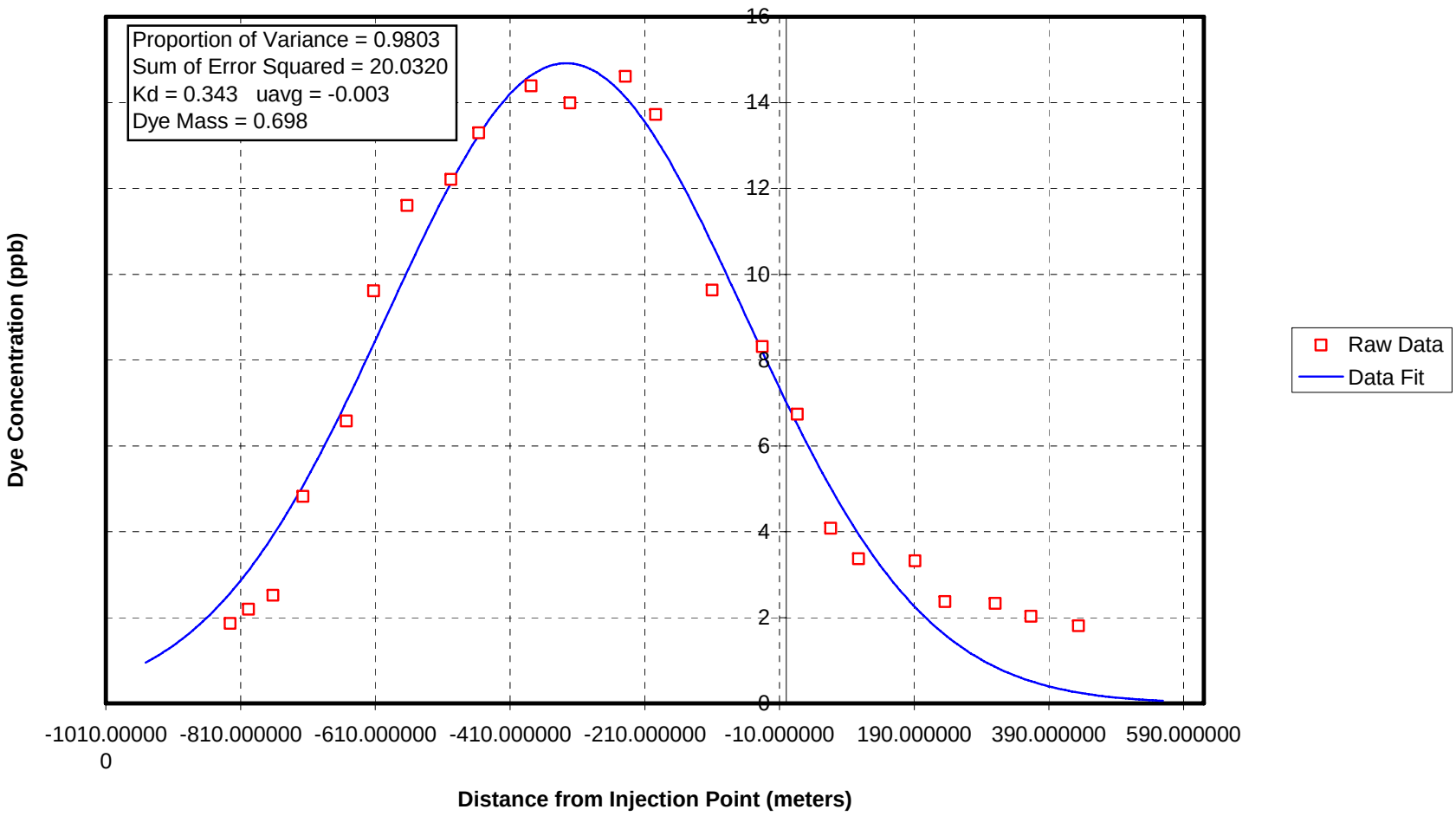
Run Dispersion Routine

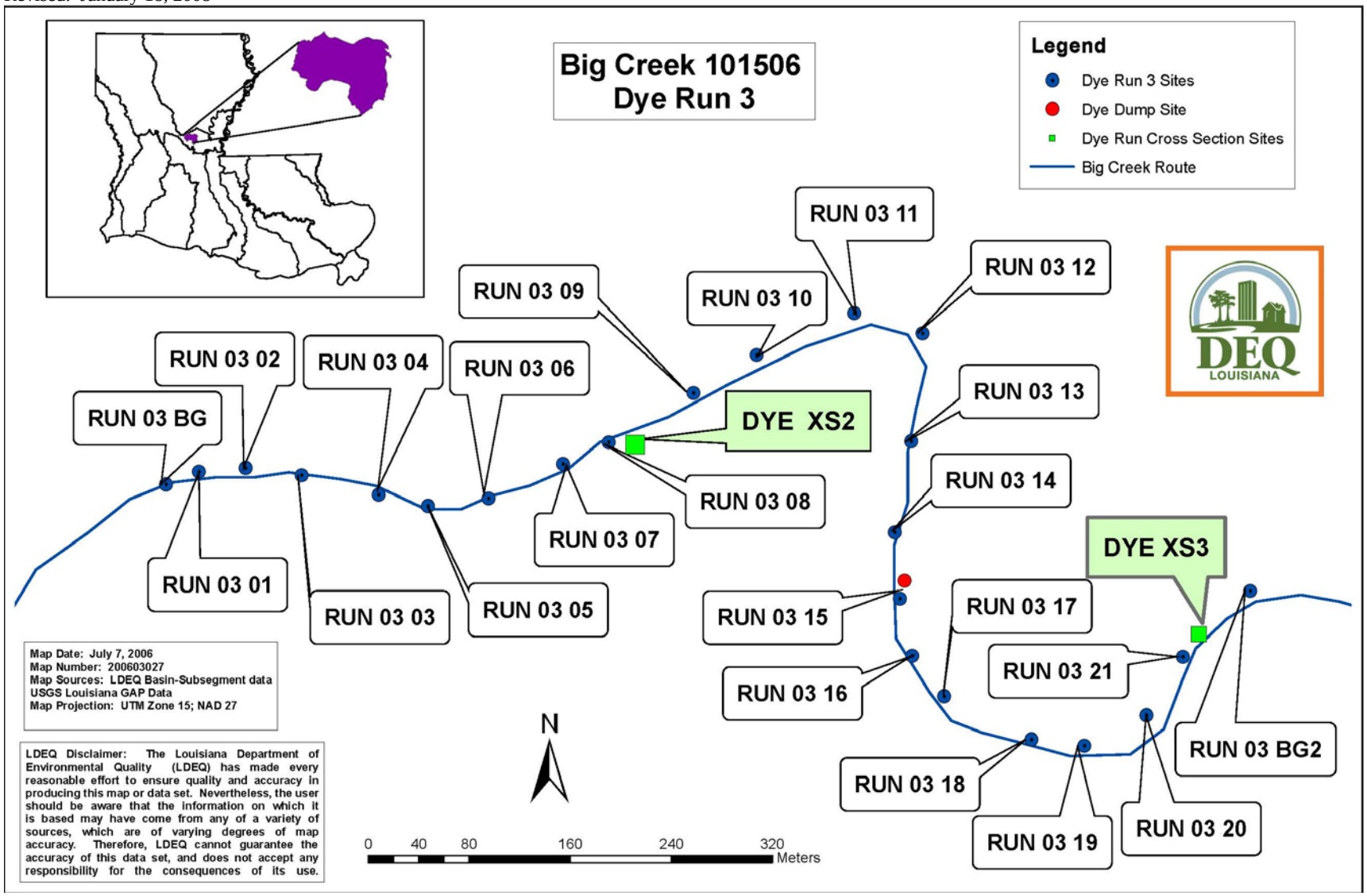
[1]Mass of solution injected is multiplied by 0.2 since the solution is 20% dye

[2]Initial guesses must be chosen carefully chosen since they control to a great degree the success and rate of convergence of the Gauss–Newton algorithm

Dye Run 3 Observed Dye Data	
f(X): Concentration (ppb)	**X: Distance From Injection Point (meters)**
1.86	-825.276856
2.19	-798.216524
2.52	-761.829799
4.82	-717.330958
6.58	-653.069156
9.61	-612.599437
11.6	-562.928293
12.21	-497.671602
13.29	-456.343940
14.39	-378.682382
13.99	-320.866949
14.61	-238.523204
13.72	-193.896560
9.63	-109.765183
8.31	-35.389392
6.74	16.374149
4.08	66.070718
3.37	107.181371
3.32	191.136600
2.37	235.745287
2.33	310.365528
2.03	363.434087
1.81	433.918533

Big Creek 101506
Dye Run 3
Non Linear Regression of Dye Data




Big Creek 101506
Dye Run 3
Legend
Dye Run 3 Sites
Dye Dump Site
Dye Run Cross Section Sites
Big Creek Route
RUN 03 BG
RUN 03 01
RUN 03 02
RUN 03 03
RUN 03 04
RUN 03 05
RUN 03 06
RUN 03 07
RUN 03 08
RUN 03 09
RUN 03 10
RUN 03 11
RUN 03 12
RUN 03 13
RUN 03 14
RUN 03 15
RUN 03 16
RUN 03 17
RUN 03 18
RUN 03 19
RUN 03 20
RUN 03 21
RUN 03 BG2
DYE XS2
DYE XS3
DEQ
LOUISIANA
Map Date: July 7, 2006
Map Number: 200603027
Map Sources: LDEQ Basin-Subsegment data
USGS Louisiana GAP Data
Map Projection: UTM Zone 15; NAD 27
LDEQ Disclaimer: The Louisiana Department of Environmental Quality (LDEQ) has made every reasonable effort to ensure quality and accuracy in producing this map or data set. Nevertheless, the user should be aware that the information on which it is based may have come from any of a variety of sources, which are of varying degrees of map accuracy. Therefore, LDEQ cannot guarantee the accuracy of this data set, and does not accept any responsibility for the consequences of its use.
N
0 40 80 160 240 320
Meters

Dye Run 4 User Inputs	Depth of Stream (meters)	1.356
	Width of Stream (meters)	52.730
	Time Elapsed Since Dye Injection (sec)	159746
	[1]Mass of Solution Injected (kg)	35.000
	Number of Iterations	20
[2]Initial Guess	K_d : Diffusion (m^2/s)	0.5000

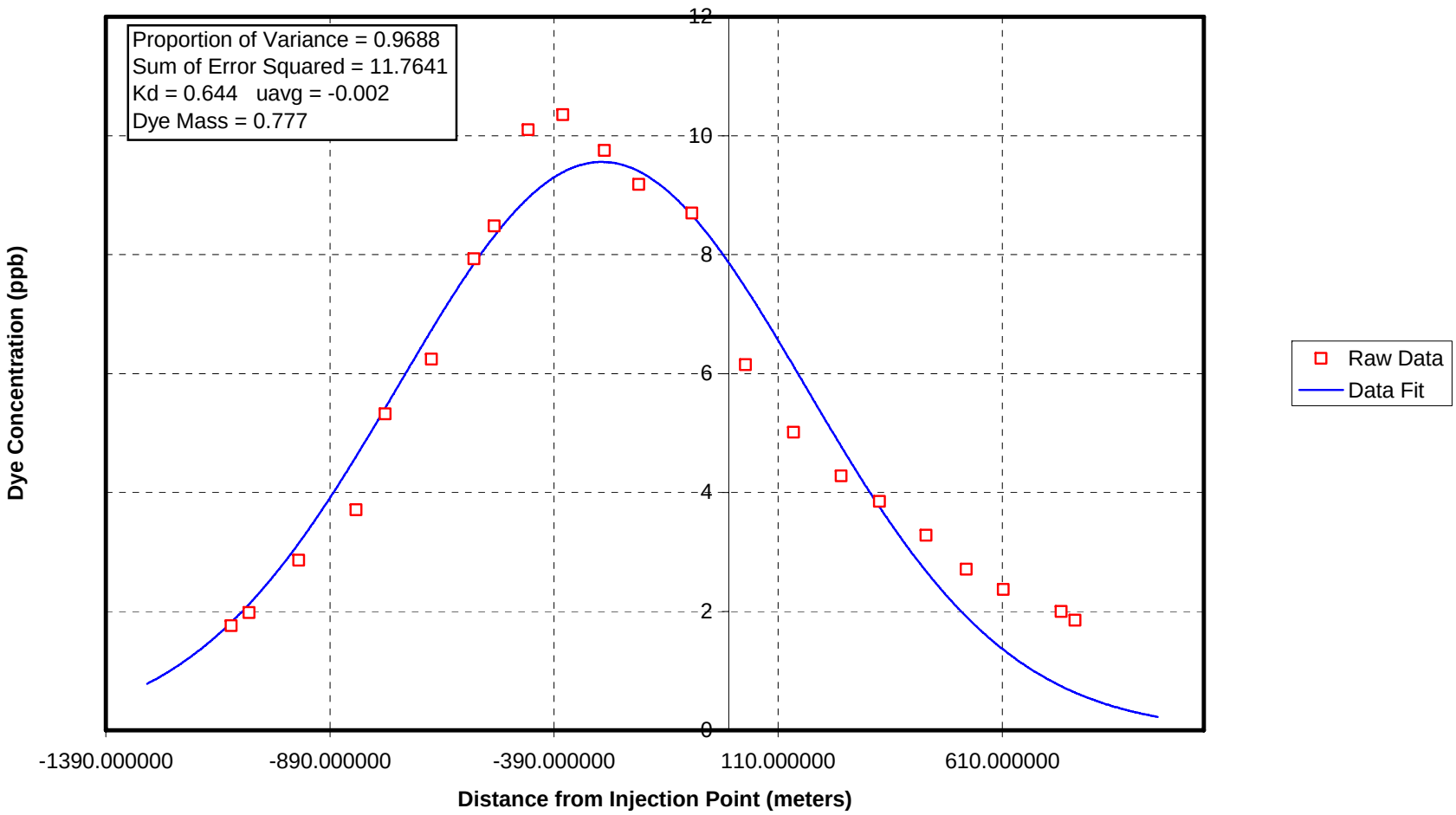
Run Dispersion Routine

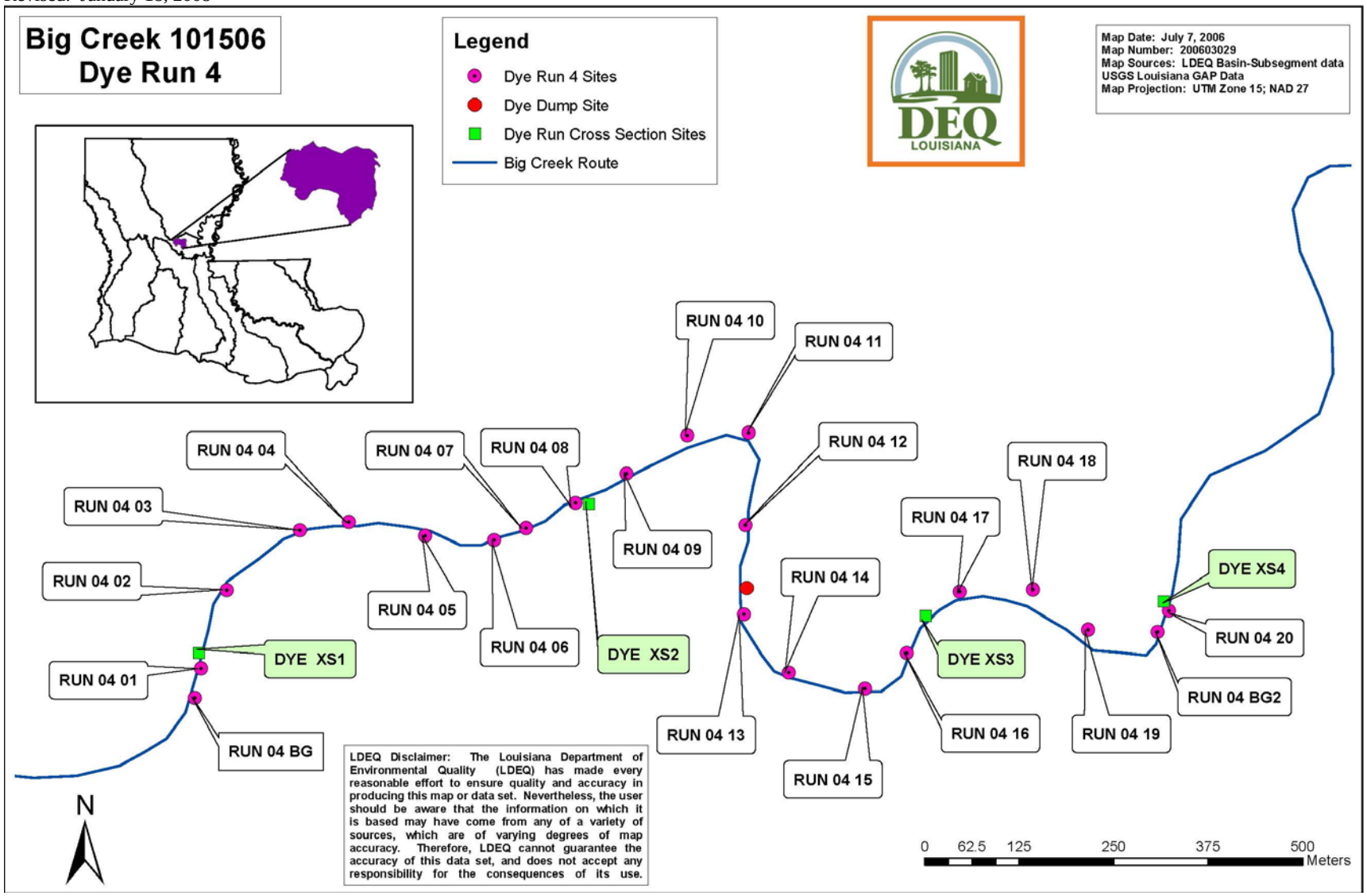
[1]Mass of solution injected is multiplied by 0.2 since the solution is 20% dye

[2]Initial guesses must be chosen carefully chosen since they control to a great degree the success and rate of convergence of the Gauss–Newton algorithm

Dye Run 4 Observed Dye Data	
f(X): Concentration (ppb)	**X: Distance From Injection Point (meters)**
1.76	-1109.992874
1.98	-1070.399713
2.86	-959.561216
3.71	-831.776193
5.32	-766.829799
6.24	-663.512642
7.93	-568.309628
8.48	-523.030583
10.1	-447.800213
10.35	-370.220279
9.75	-277.735447
9.18	-201.024063
8.7	-82.420259
6.15	37.396137
5.01	144.631296
4.28	250.656202
3.85	336.513218
3.28	440.053839
2.71	529.804059
2.37	612.647466
2.00	741.600954
1.85	772.887384

Big Creek 101506
Dye Run 4
Non Linear Regression of Dye Data



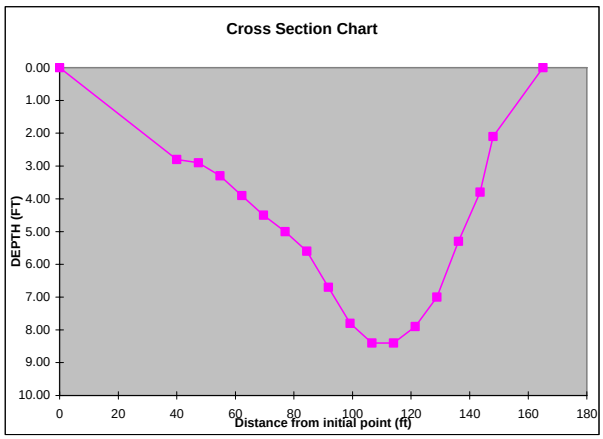

Big Creek 101506
Dye Run 4
Legend
Dye Run 4 Sites
Dye Dump Site
Dye Run Cross Section Sites
Big Creek Route
DEQ
LOUISIANA
Map Date: July 7, 2006
Map Number: 200603029
Map Sources: LDEQ Basin-Subsegment data
USGS Louisiana GAP Data
Map Projection: UTM Zone 15; NAD 27
RUN 04 01
RUN 04 02
RUN 04 03
RUN 04 04
RUN 04 05
RUN 04 06
RUN 04 07
RUN 04 08
RUN 04 09
RUN 04 10
RUN 04 11
RUN 04 12
RUN 04 13
RUN 04 14
RUN 04 15
RUN 04 16
RUN 04 17
RUN 04 18
RUN 04 19
RUN 04 20
RUN 04 BG
RUN 04 BG2
DYE XS1
DYE XS2
DYE XS3
DYE XS4
N
0 62.5 125 250 375 500
Meters
LDEQ Disclaimer: The Louisiana Department of Environmental Quality (LDEQ) has made every reasonable effort to ensure quality and accuracy in producing this map or data set. Nevertheless, the user should be aware that the information on which it is based may have come from any of a variety of sources, which are of varying degrees of map accuracy. Therefore, LDEQ cannot guarantee the accuracy of this data set, and does not accept any responsibility for the consequences of its use.

STREAM CROSS-SECTION SPREADSHEET

Site Number: BGC Dye XS1 **Subsegment:** 101506 **Waterbody:** Big Creek
Site Description:
Type of Equipment: ☑ Fathometer ☐ Hydrotrac ☐ Manual
Initial Bank: ☐ RDB ☑ LDB
Tapedown: N/A
Guage Height: N/A
Date: 6/8/2006

WIDTH[1] (ft):	165.00
AREA[2] (ft^2):	678.83
AVG. DEPTH[3] (ft):	4.11

Subsection	Distance from initial point (ft)	Width[4] (ft)	Depth (ft)	Area[5] (sq.ft.)	Area of element as % of Total Area[6 & 7]
1	0.0	20.00	0.00	0.00	
2	40.0	23.70	2.80	66.36	9.78%
3	47.4	7.40	2.90	21.46	3.16%
4	54.8	7.40	3.30	24.42	3.60%
5	62.2	7.40	3.90	28.86	4.25%
6	69.6	7.40	4.50	33.30	4.91%
7	77.0	7.40	5.00	37.00	5.45%
8	84.4	7.40	5.60	41.44	6.10%
9	91.8	7.40	6.70	49.58	7.30%
10	99.2	7.40	7.80	57.72	8.50%
11	106.6	7.40	8.40	62.16	9.16%
12	114.0	7.40	8.40	62.16	9.16%
13	121.4	7.40	7.90	58.46	8.61%
14	128.8	7.40	7.00	51.80	7.63%
15	136.2	7.40	5.30	39.22	5.78%
16	143.6	5.90	3.80	22.42	3.30%
17	148.0	10.70	2.10	22.47	3.31%
18	165.0	8.50	0.00	0.00	0.00%
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
	Total	165.00		678.83	100.00%



Data Collection Crew		Office Data Work	
Measurement made by:	C. Schwartzenburg	Data Inputed by / Date:	C. Schwartzenburg 6/13/06
Notetaker/Recorder:	E. Garner	Data Input Checked by / Date:	E. Garner 6/13/06
Other:			

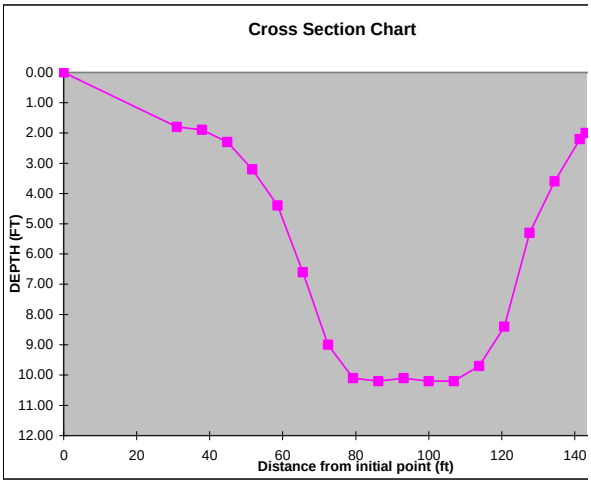
Note 1: WIDTH (ft) = sum of the width column
Note 2: AREA (sq.ft.) = sum of the area column
Note 3: AVG. DEPTH (ft) = area/width (using the values from this table)
Note 4: Width of element
Note 5: Area=Width*Depth for element
Note 6: Percent area = element area/total area x 100%
Note 7: Percent area should be less than 10% as per USGS standard.
Note 8: Blank fields are cleared from all calculations.
Note 9: The cross sections are taken at areas representative of the stream.

STREAM CROSS-SECTION SPREADSHEET

Site Number: BGC Dye XS 2 **Subsegment:** 101506 **Waterbody:** Big Creek
Site Description:
Type of Equipment: ☑ Fathometer ☐ Hydrotrac ☐ Manual
Initial Bank: ☐ RDB ☑ LDB
Tapedown: N/A
Guage Height: N/A
Date: 6/8/2006

WIDTH[1] (ft):	159.00
AREA[2] (ft[2]):	786.94
AVG. DEPTH[3](ft):	4.95

Subsection	Distance from initial point (ft)	Width[4] (ft)	Depth (ft)	Area[5] (sq.ft.)	Area of element as % of Total Area[6 & 7]
1	0.0	15.50	0.00	0.00	
2	31.0	18.95	1.80	34.11	4.33%
3	37.9	6.90	1.90	13.11	1.67%
4	44.8	6.90	2.30	15.87	2.02%
5	51.7	6.90	3.20	22.08	2.81%
6	58.6	6.90	4.40	30.36	3.86%
7	65.5	6.90	6.60	45.54	5.79%
8	72.4	6.90	9.00	62.10	7.89%
9	79.3	6.90	10.10	69.69	8.86%
10	86.2	6.90	10.20	70.38	8.94%
11	93.1	6.90	10.10	69.69	8.86%
12	100.0	6.90	10.20	70.38	8.94%
13	106.9	6.90	10.20	70.38	8.94%
14	113.8	6.90	9.70	66.93	8.51%
15	120.7	6.90	8.40	57.96	7.37%
16	127.6	6.90	5.30	36.57	4.65%
17	134.5	6.90	3.60	24.84	3.16%
18	141.4	4.25	2.20	9.35	1.19%
19	143.0	8.80	2.00	17.60	2.24%
20	159.0	8.00	0.00	0.00	0.00%
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
	Total	159.00		786.94	100.00%



Data Collection Crew		Office Data Work	
Measurement made by:	C. Schwartzenburg	Data Inputed by / Date:	C. Schwartzenburg 6/13/06
Notetaker/Recorder:	E. Garner	Data Input Checked by / Date:	E. Garner 6/13/06
Other:			

Note 1: WIDTH (ft) = sum of the width column
Note 2: AREA (sq.ft.) = sum of the area column
Note 3: AVG. DEPTH (ft) = area/width (using the values from this table)
Note 4: Width of element
Note 5: Area=Width*Depth for element
Note 6: Percent area = element area/total area x 100%
Note 7: Percent area should be less than 10% as per USGS standard.
Note 8: Blank fields are cleared from all calculations.
Note 9: The cross sections are taken at areas representative of the stream.

STREAM CROSS-SECTION SPREADSHEET

Site Number: BGC Dye XS 3 **Subsegment:** 101506 **Waterbody:** Big Creek

Site Description:

Type of Equipment: ☑ Fathometer ☐ Hydrotrac ☐ Manual

Initial Bank: ☐ RDB ☑ LDB

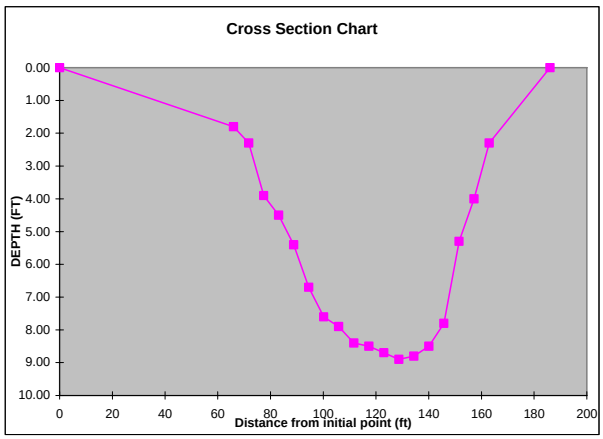
Tapedown: N/A

Guage Height: N/A

Date: 6/8/2006

WIDTH[1] (ft):	186.00
AREA[2] (ft^2):	708.89
AVG. DEPTH[3] (ft):	3.81

Subsection	Distance from initial point (ft)	Width[4] (ft)	Depth (ft)	Area[5] (sq.ft.)	Area of element as % of Total Area[6 & 7]
1	0.0	33.00	0.00	0.00	
2	66.0	35.85	1.80	64.53	9.10%
3	71.7	5.70	2.30	13.11	1.85%
4	77.4	5.70	3.90	22.23	3.14%
5	83.1	5.70	4.50	25.65	3.62%
6	88.8	5.70	5.40	30.78	4.34%
7	94.5	5.70	6.70	38.19	5.39%
8	100.2	5.70	7.60	43.32	6.11%
9	105.9	5.70	7.90	45.03	6.35%
10	111.6	5.70	8.40	47.88	6.75%
11	117.3	5.70	8.50	48.45	6.83%
12	123.0	5.70	8.70	49.59	7.00%
13	128.7	5.70	8.90	50.73	7.16%
14	134.4	5.70	8.80	50.16	7.08%
15	140.1	5.70	8.50	48.45	6.83%
16	145.8	5.70	7.80	44.46	6.27%
17	151.5	5.70	5.30	30.21	4.26%
18	157.2	5.75	4.00	23.00	3.24%
19	163.0	14.40	2.30	33.12	4.67%
20	186.0	11.50	0.00	0.00	0.00%
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
	Total	186.00		708.89	100.00%



Data Collection Crew		Office Data Work	
Measurement made by:	C. Schwartzenburg	Data Inputed by / Date:	C. Schwartzenburg 6/13/06
Notetaker/Recorder:	E. Garner	Data Input Checked by / Date:	E. Garner 6/13/06
Other:			

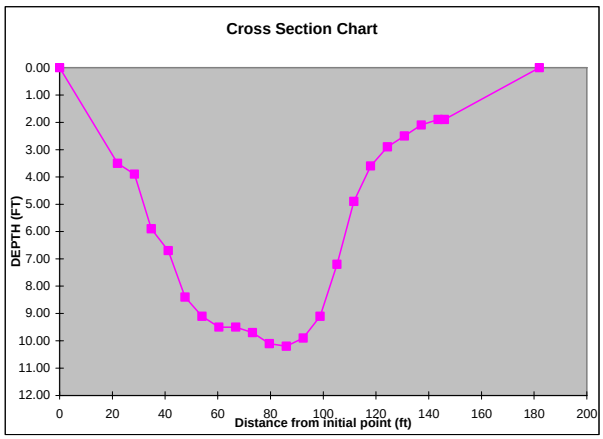
Note 1: WIDTH (ft) = sum of the width column
Note 2: AREA (sq.ft.) = sum of the area column
Note 3: AVG. DEPTH (ft) = area/width (using the values from this table)
Note 4: Width of element
Note 5: Area=Width*Depth for element
Note 6: Percent area = element area/total area x 100%
Note 7: Percent area should be less than 10% as per USGS standard.
Note 8: Blank fields are cleared from all calculations.
Note 9: The cross sections are taken at areas representative of the stream.

STREAM CROSS-SECTION SPREADSHEET

Site Number: BGC Dye XS 4 **Subsegment:** 101506 **Waterbody:** Big Creek
Site Description:
Type of Equipment: ☑ Fathometer ☐ Hydrotrac ☐ Manual
Initial Bank: ☑ RDB ☐ LDB
Tapedown: N/A
Guage Height: N/A
Date: 6/8/2006

WIDTH[1] (ft):	182.00
AREA[2] (ft^2):	895.82
AVG. DEPTH[3] (ft):	4.92

Subsection	Distance from initial point (ft)	Width[4] (ft)	Depth (ft)	Area[5] (sq.ft.)	Area of element as % of Total Area[6 & 7]
1	0.0	11.00	0.00	0.00	
2	22.0	14.20	3.50	49.70	5.55%
3	28.4	6.40	3.90	24.96	2.79%
4	34.8	6.40	5.90	37.76	4.22%
5	41.2	6.40	6.70	42.88	4.79%
6	47.6	6.40	8.40	53.76	6.00%
7	54.0	6.40	9.10	58.24	6.50%
8	60.4	6.40	9.50	60.80	6.79%
9	66.8	6.40	9.50	60.80	6.79%
10	73.2	6.40	9.70	62.08	6.93%
11	79.6	6.40	10.10	64.64	7.22%
12	86.0	6.40	10.20	65.28	7.29%
13	92.4	6.40	9.90	63.36	7.07%
14	98.8	6.40	9.10	58.24	6.50%
15	105.2	6.40	7.20	46.08	5.14%
16	111.6	6.40	4.90	31.36	3.50%
17	118.0	6.40	3.60	23.04	2.57%
18	124.4	6.40	2.90	18.56	2.07%
19	130.8	6.40	2.50	16.00	1.79%
20	137.2	6.40	2.10	13.44	1.50%
21	143.6	4.40	1.90	8.36	0.93%
22	146.0	19.20	1.90	36.48	4.07%
23	182.0	18.00	0.00	0.00	0.00%
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
	Total	182.00		895.82	100.00%



Data Collection Crew		Office Data Work	
Measurement made by:	C. Schwartzenburg	Data Inputed by / Date:	C. Schwartzenburg 6/13/06
Notetaker/Recorder:	E. Garner	Data Input Checked by / Date:	E. Garner 6/13/06
Other:			

Note 1: WIDTH (ft) = sum of the width column
Note 2: AREA (sq.ft.) = sum of the area column
Note 3: AVG. DEPTH (ft) = area/width (using the values from this table)
Note 4: Width of element
Note 5: Area=Width*Depth for element
Note 6: Percent area = element area/total area x 100%
Note 7: Percent area should be less than 10% as per USGS standard.
Note 8: Blank fields are cleared from all calculations.
Note 9: The cross sections are taken at areas representative of the stream.

Appendix G– Historical and Ambient Data

Appendix G1 – Ambient Data

Critical Temperature and DO Determinations:

SITE NUMBER: 1227

SITE DESCRIPTION: Big Creek at North Point, Louisiana

	Summer Season	***Winter Season***
90th Percentile Temperature(°C):	30.50	23.14
90 % DO Sat (mg/L):	6.74	7.70
Months:	May To Oct	Nov To Apr

Date	***Water Temp. (°C)***	***DO (mg/L)***
9/28/2005	27.94	2.46
9/9/2005	26.66	4.67
8/22/2005	28.99	2.63
8/8/2005	29.26	3.16
7/25/2005	30.18	2.72
7/13/2005	30.35	3.95
6/23/2005	29.08	5.01
6/13/2005	29.56	4.40
5/23/2005	27.71	4.39
5/5/2005	20.19	5.66
4/25/2005	21.29	5.18
4/11/2005	22.60	6.75
12/17/2002	13.06	6.00
11/18/2002	14.22	5.05
10/22/2002	19.36	4.60
9/24/2002	24.88	4.88
8/20/2002	31.29	5.35
7/23/2002	30.65	1.05
6/18/2002	27.00	5.80
5/21/2002	23.57	3.97
4/16/2002	24.39	5.06
3/26/2002	15.80	6.44
2/18/2002	13.02	8.25
1/22/2002	11.26	7.10

Appendix G2 – Land Use Summary

Land Use Summary

Subsegment: 101506

Data Source Name: LA-GAP June 2000

Grid Name	Area (Acres)	% Land Use
Wetland Forest Deciduous	70344.27	61.07
Agriculture/Cropland/Grassland	27935.42	24.25
Water	7838.96	6.81
Vegetated Urban	4705.87	4.09
Fresh Marsh	2068.94	1.80
Wetland S/S Deciduous	781.49	0.68
Upland Forest Mixed	596.02	0.52
Non-Vegetated Urban	408.32	0.35
Upland Barren	188.59	0.16
Upland S/S Mixed	167.24	0.15
Upland Forest Deciduous	112.09	0.10
Wetland Barren	33.36	0.03

Appendix G3 – 303(d) Report

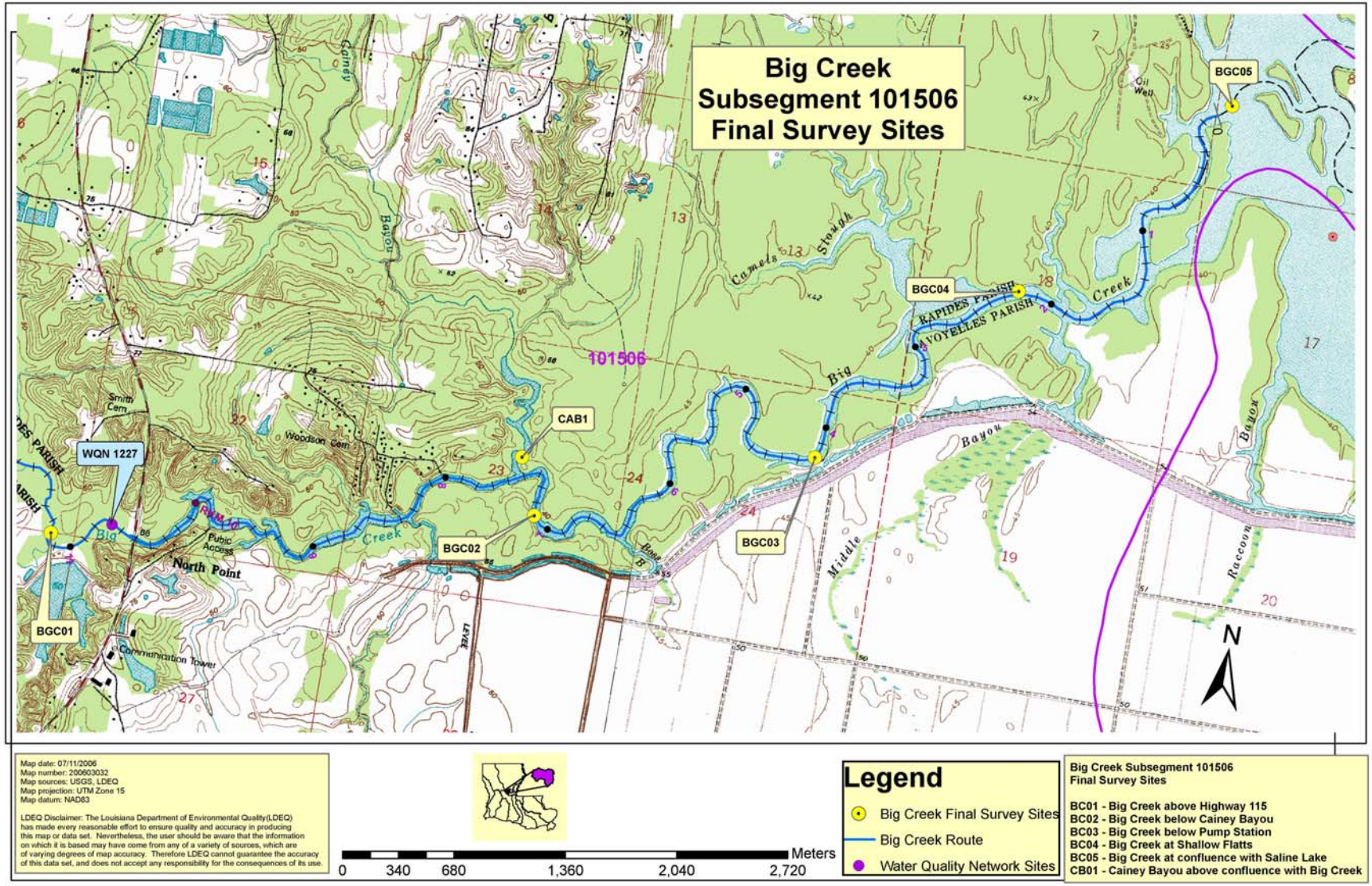
Subsegment Number	Subsegment Description	Type	Size Miles	PCR	SCR	FWP	DWS	ONR	SFP	AGR	LAL	Suspected Causes of Impairment	Suspected Sources of Impairment	IR Cat	TMDL Due Date	TMDL Priority	DEQ or EPA Listing ?
101506	Big Creek-Headwaters to Saline Lake	River	11	Fully Supporting	Fully Supporting	Non-Supporting						Mercury	Atmospheric Deposition - Toxics	5	2007	1	LDEQ
101506	Big Creek-Headwaters to Saline Lake	River	11	Fully Supporting	Fully Supporting	Non-Supporting						Mercury	Source Unknown	5	2007	1	LDEQ
101506	Big Creek-Headwaters to Saline Lake	River	11	Fully Supporting	Fully Supporting	Non-Supporting						Oxygen, Dissolved	Source Unknown	3			LDEQ
101506	Big Creek-Headwaters to Saline Lake	River	11	Fully Supporting	Fully Supporting	Non-Supporting						pH	Naturally Occurring Organic Acids	3			LDEQ

Abbreviations:

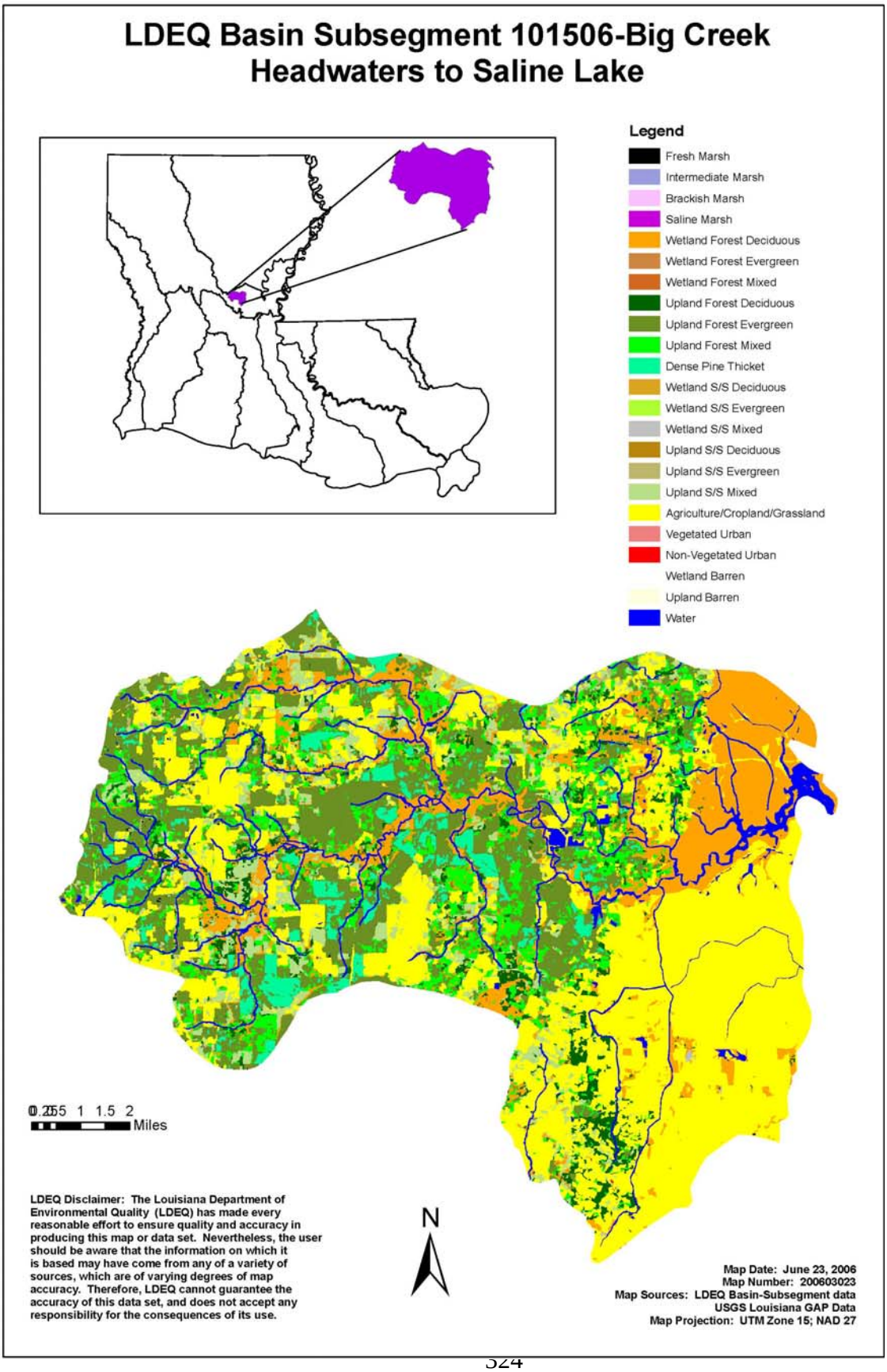
PCR - Primary Contact Recreation
SCR - Secondary Contact Recreation
FWP - Fish and Wildlife Propagation
DWS - Drinking Water Supply
ONR - Outstanding Natural Resource
SFP - Shellfish Propagation
AGR - Agriculture
LAL - Limited Aquatic Life

Appendix H – Maps and Diagrams

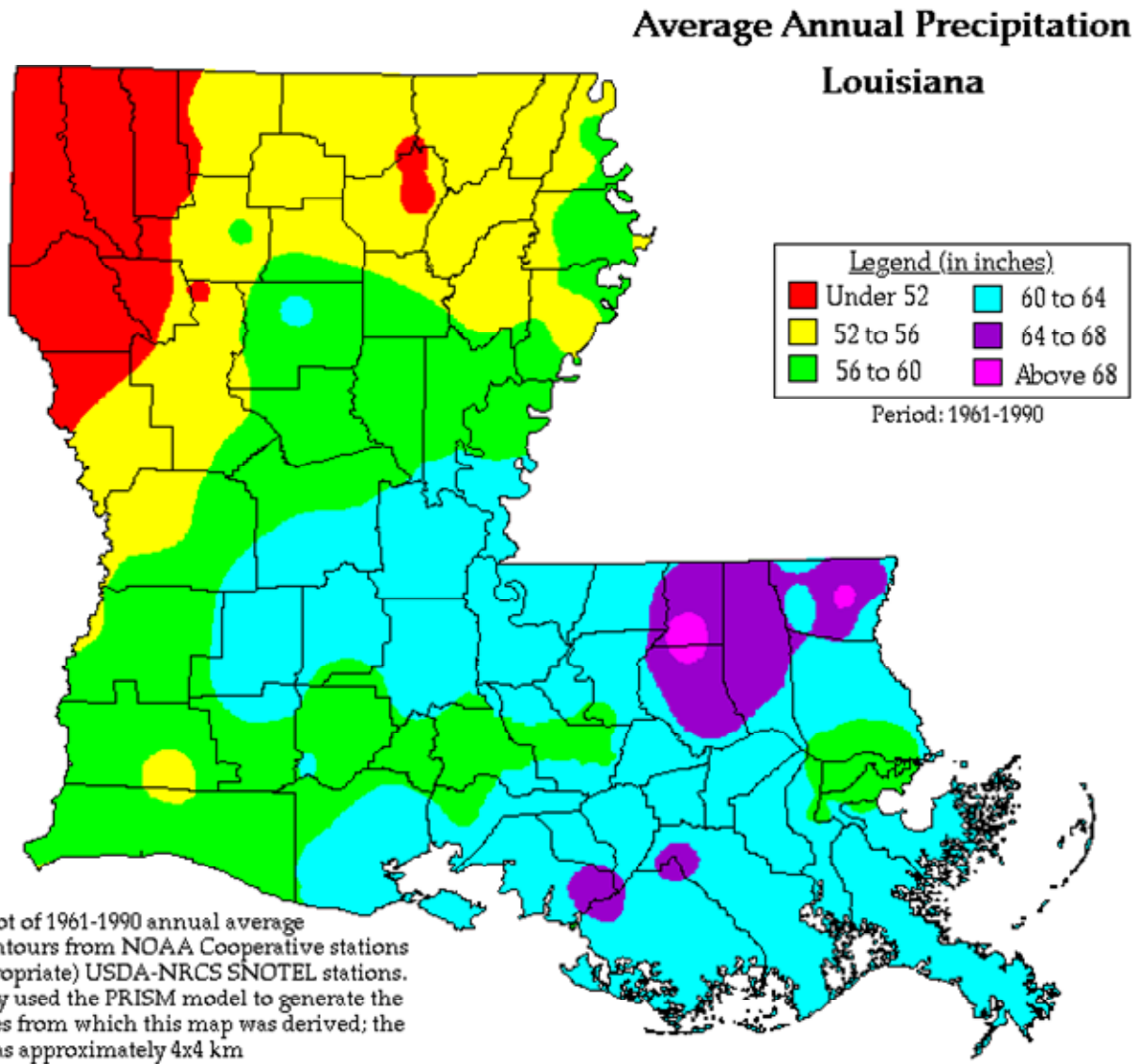
Appendix H1- Overview map


Big Creek
Subsegment 101506
Final Survey Sites
BGC05
BGC04
CAB1
BGC02
BGC03
BGC01
WQN 1227
101506
Big Creek
Cainey Bayou
Comets Stretch
Middle Bayou
Raccoon Bayou
North Point
Public Access
Communication Tower
Smith Cem
Woodson Cem
Oil Well
RAPIDES PARISH
AVOYELLES PARISH
N
Map date: 07/11/2006
Map number: 200603032
Map sources: USGS, LDEQ
Map projection: UTM Zone 15
Map datum: NAD83
LDEQ Disclaimer: The Louisiana Department of Environmental Quality(LDEQ) has made every reasonable effort to ensure quality and accuracy in producing this map or data set. Nevertheless, the user should be aware that the information on which it is based may have come from any of a variety of sources, which are of varying degrees of map accuracy. Therefore LDEQ cannot guarantee the accuracy of this data set, and does not accept any responsibility for the consequences of its use.
0 340 680 1,360 2,040 2,720 Meters
Legend
Big Creek Final Survey Sites
Big Creek Route
Water Quality Network Sites
Big Creek Subsegment 101506
Final Survey Sites
BC01 - Big Creek above Highway 115
BC02 - Big Creek below Cainey Bayou
BC03 - Big Creek below Pump Station
BC04 - Big Creek at Shallow Flatts
BC05 - Big Creek at confluence with Saline Lake
CB01 - Cainey Bayou above confluence with Big Creek

Appendix H2 – Land Use Map


LDEQ Basin Subsegment 101506-Big Creek
Headwaters to Saline Lake
Legend
Fresh Marsh
Intermediate Marsh
Brackish Marsh
Saline Marsh
Wetland Forest Deciduous
Wetland Forest Evergreen
Wetland Forest Mixed
Upland Forest Deciduous
Upland Forest Evergreen
Upland Forest Mixed
Dense Pine Thicket
Wetland S/S Deciduous
Wetland S/S Evergreen
Wetland S/S Mixed
Upland S/S Deciduous
Upland S/S Evergreen
Upland S/S Mixed
Agriculture/Cropland/Grassland
Vegetated Urban
Non-Vegetated Urban
Wetland Barren
Upland Barren
Water
0 0.25 0.5 1 1.5 2
Miles
LDEQ Disclaimer: The Louisiana Department of Environmental Quality (LDEQ) has made every reasonable effort to ensure quality and accuracy in producing this map or data set. Nevertheless, the user should be aware that the information on which it is based may have come from any of a variety of sources, which are of varying degrees of map accuracy. Therefore, LDEQ cannot guarantee the accuracy of this data set, and does not accept any responsibility for the consequences of its use.
N
Map Date: June 23, 2006
Map Number: 200603023
Map Sources: LDEQ Basin-Subsegment data
USGS Louisiana GAP Data
Map Projection: UTM Zone 15; NAD 27

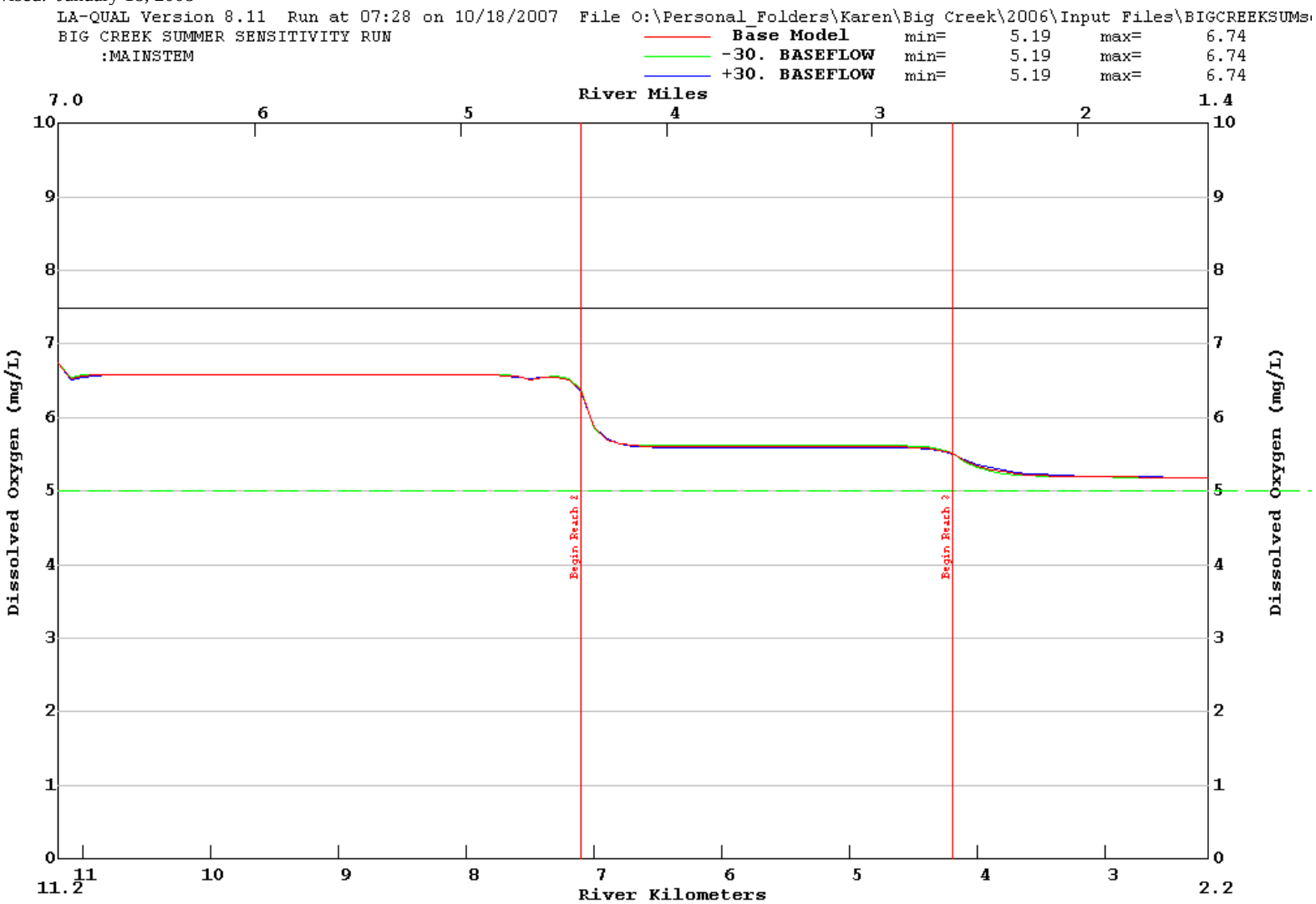
Appendix H3 – La Precipitation Map

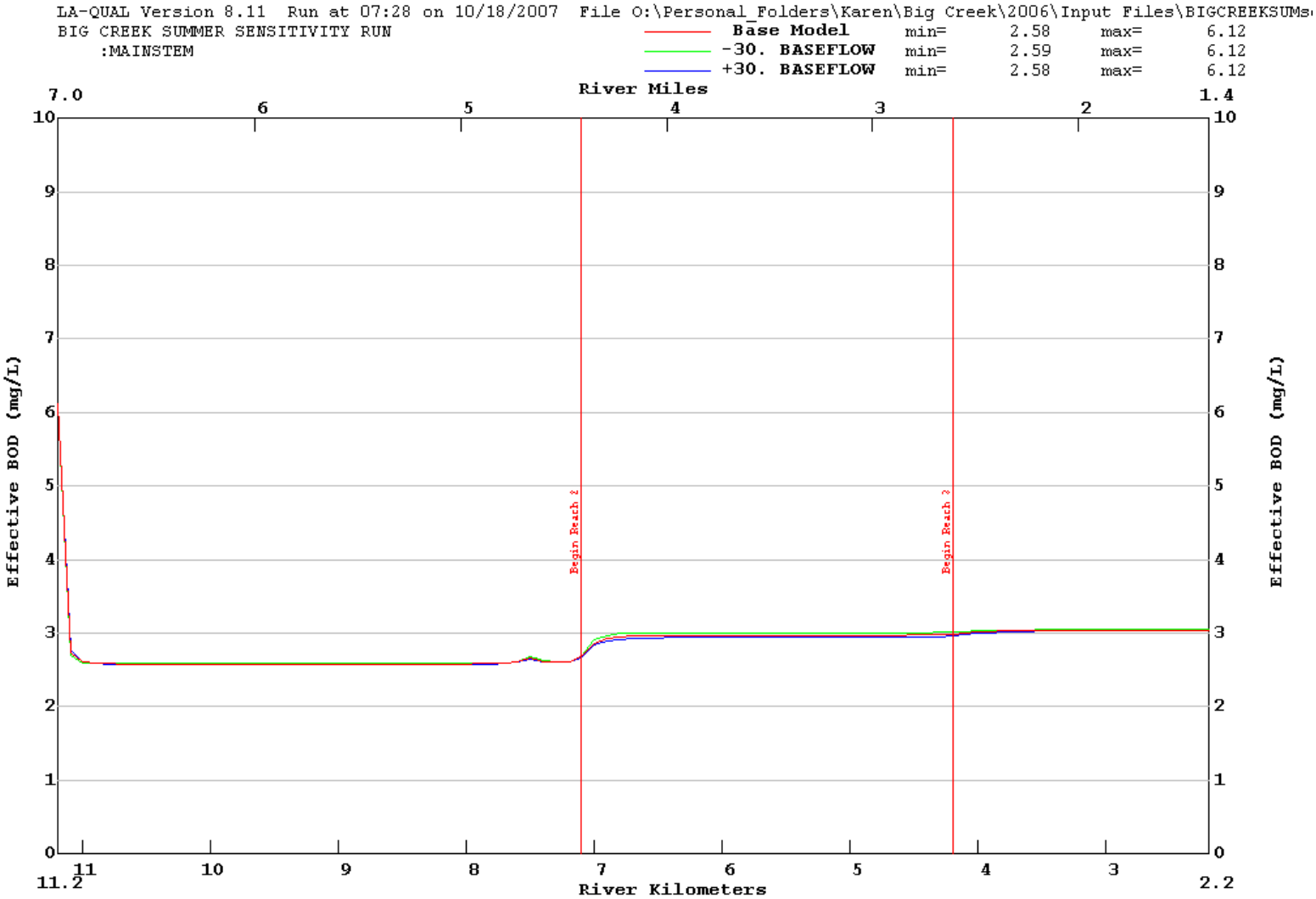


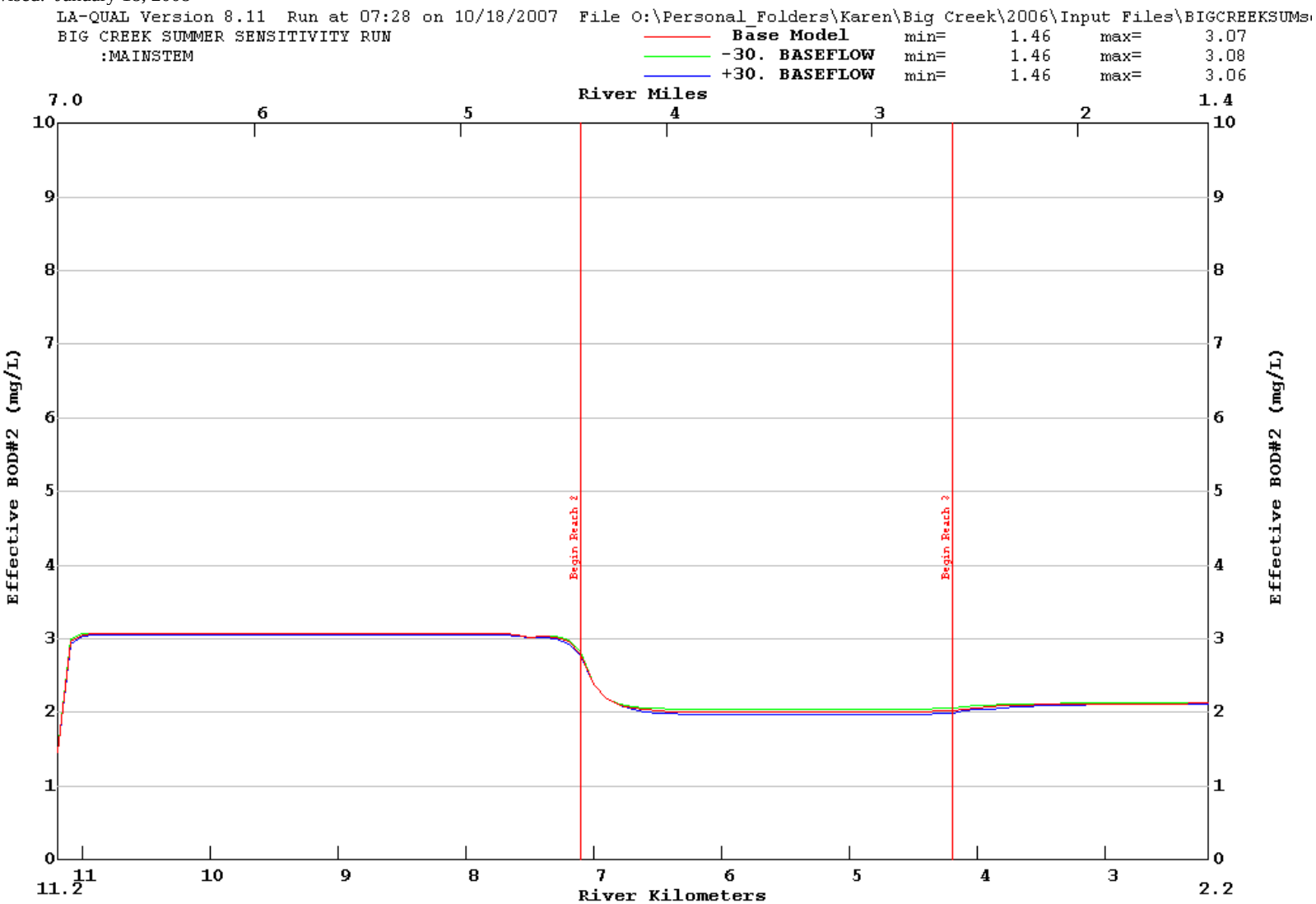
This map is a plot of 1961-1990 annual average precipitation contours from NOAA Cooperative stations and (where appropriate) USDA-NRCS SNOTEL stations. Christopher Daly used the PRISM model to generate the gridded estimates from which this map was derived; the modeled grid was approximately 4x4 km latitude/longitude, and was resampled to 2x2 km using a Gaussian filter. Mapping was performed by Jenny Weisburg. Funding was provided by USDA-NRCS National Water and Climate Center.

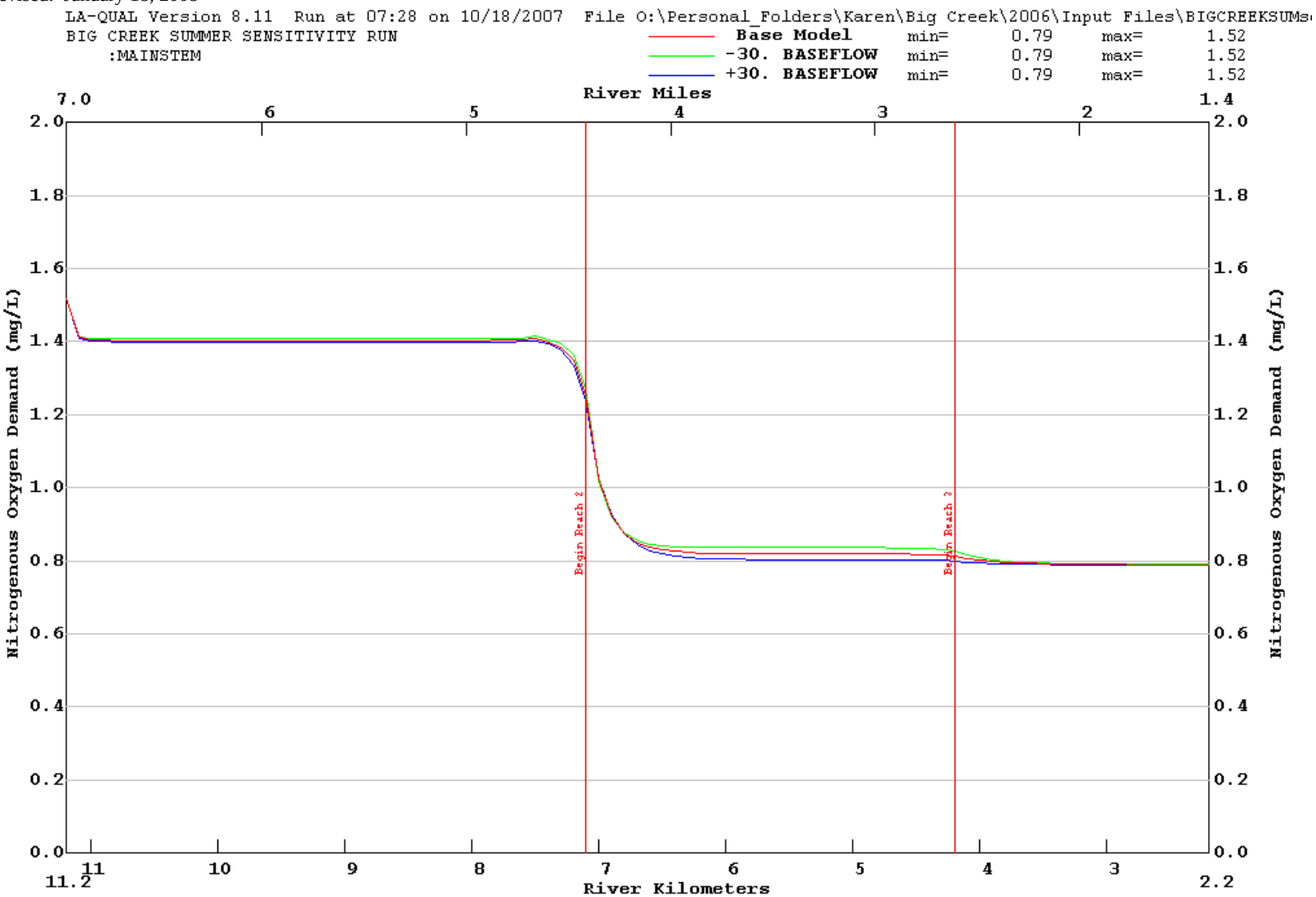
Appendix I – Sensitivity Analysis

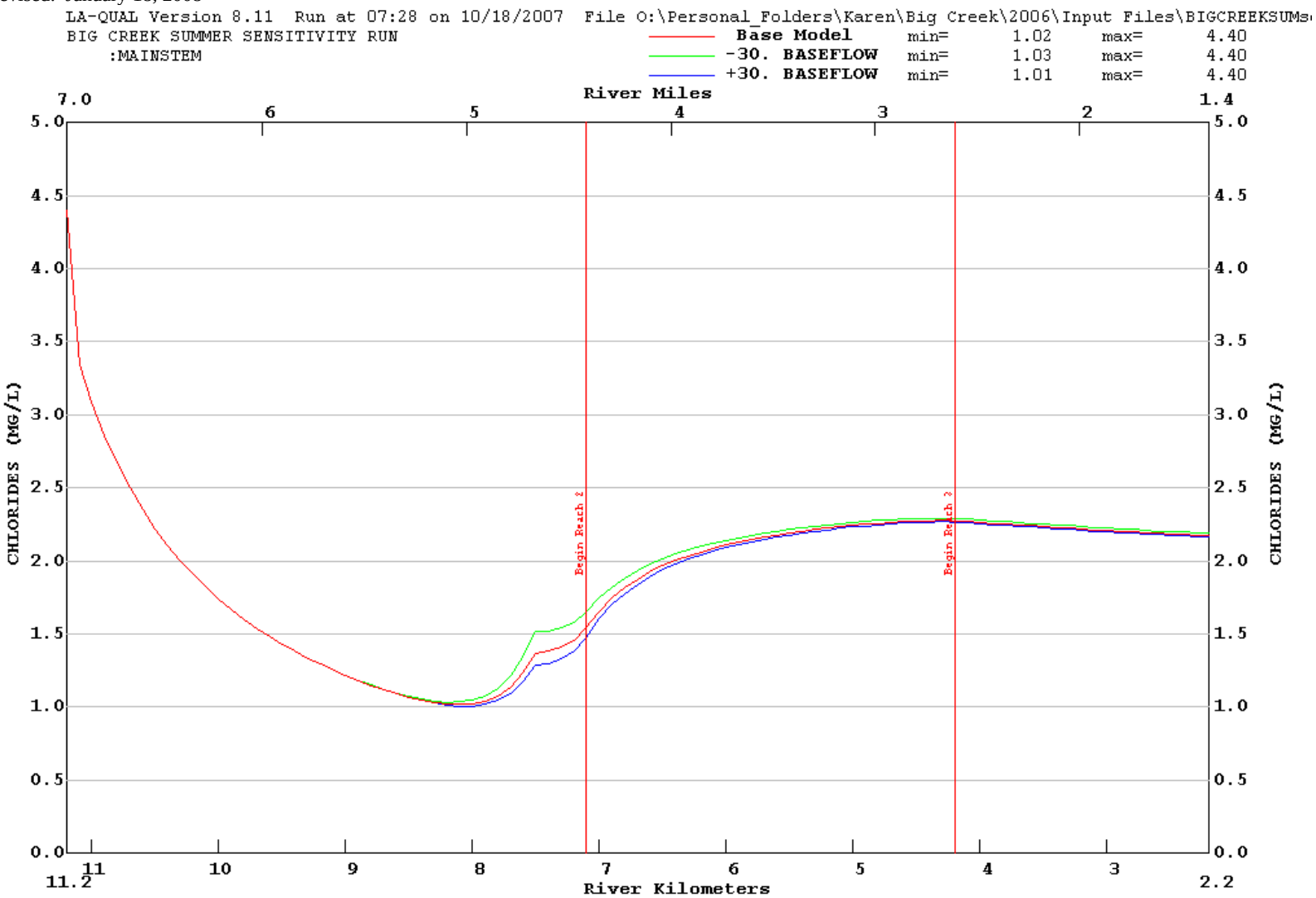
Appendix I1 – Sensitivity Output Graphs

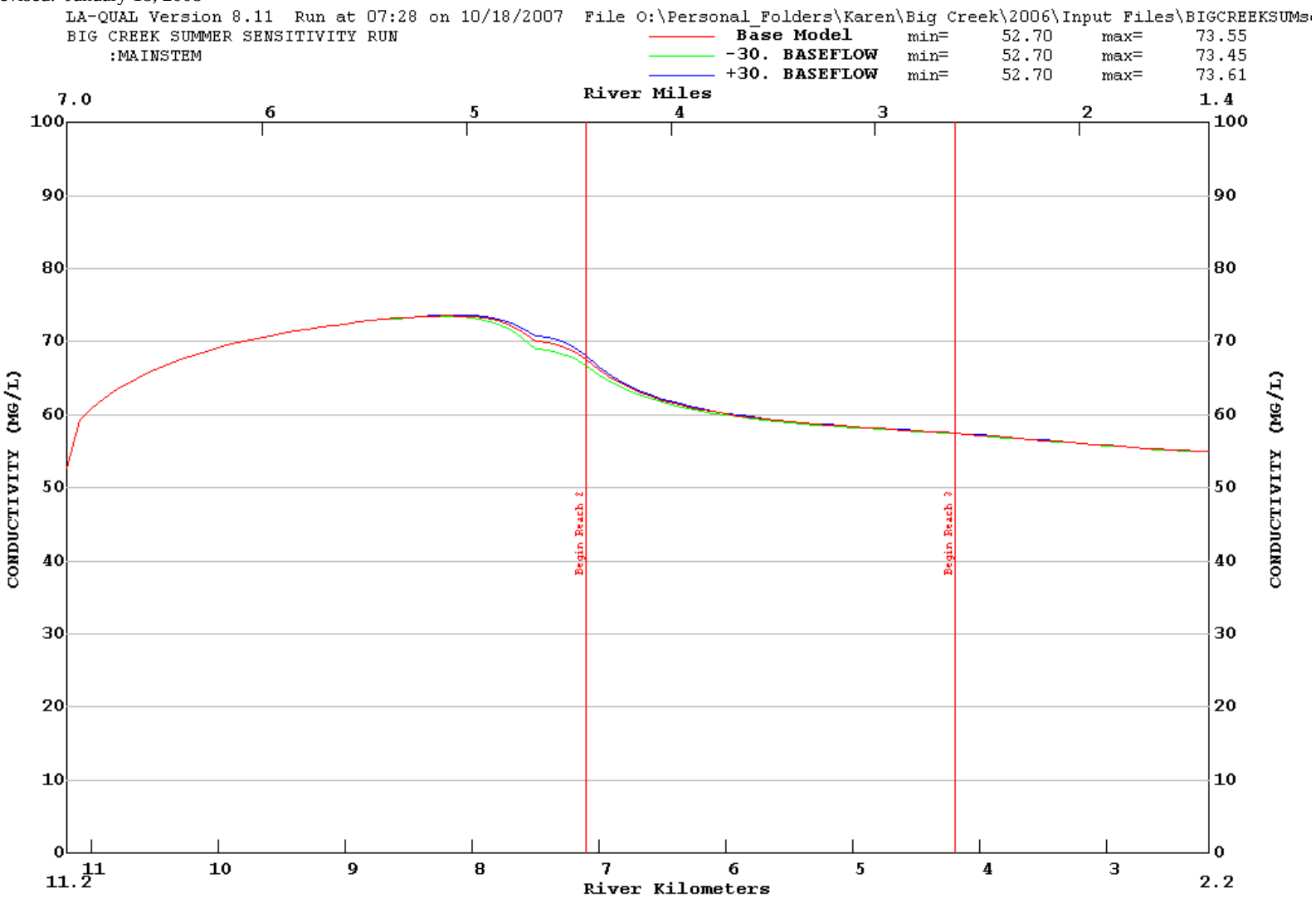

LA-QUAL Version 8.11 Run at 07:28 on 10/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKSUMs
BIG CREEK SUMMER SENSITIVITY RUN
:MAINSTEM
Base Model min= 5.19 max= 6.74
-30. BASEFLOW min= 5.19 max= 6.74
+30. BASEFLOW min= 5.19 max= 6.74
River Miles
7.0
6
5
4
3
2
1.4
Dissolved Oxygen (mg/L)
Begin Reach 2
Begin Reach 3
11.2
11
10
9
8
7
6
5
4
3
2.2
River Kilometers

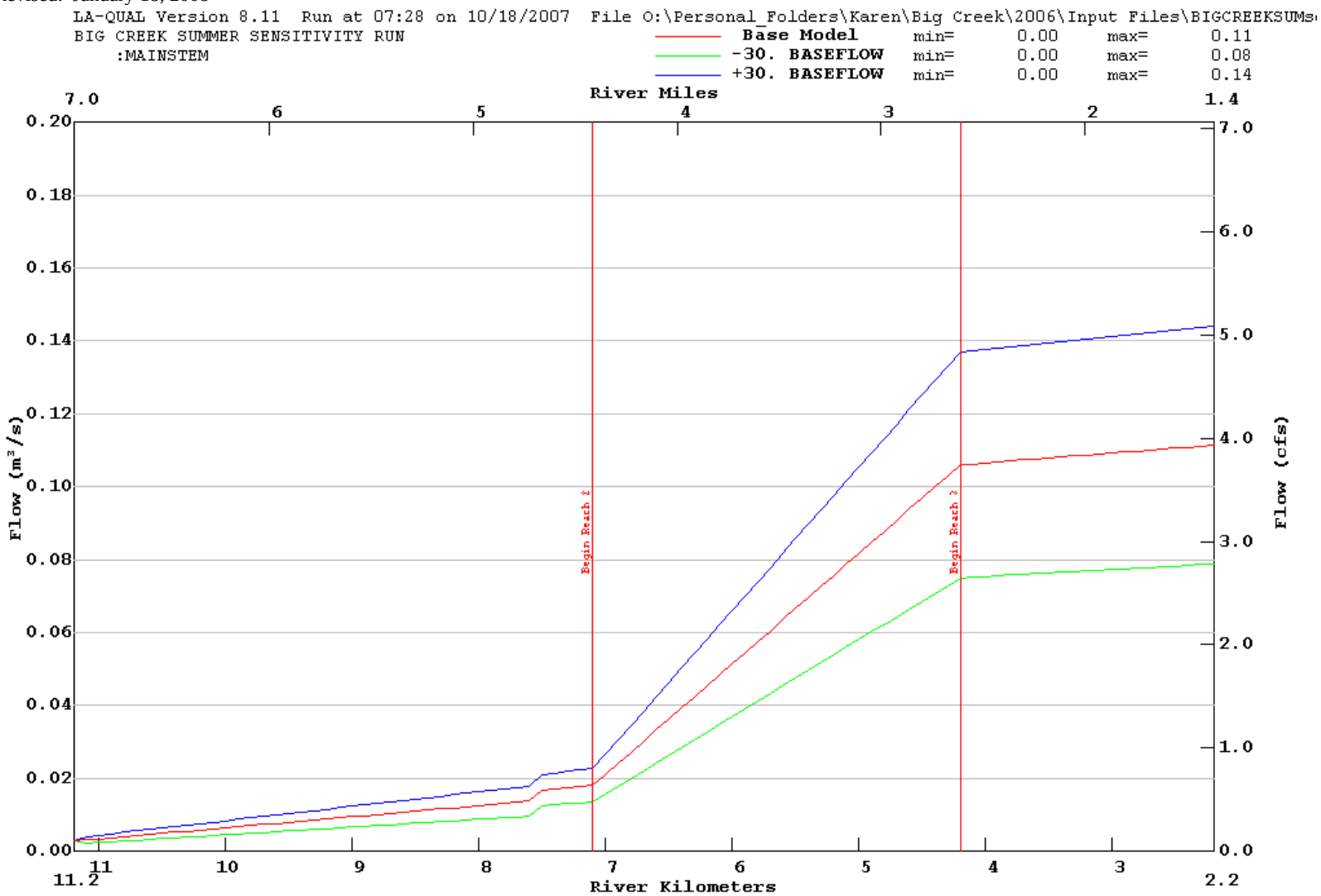

LA-QUAL Version 8.11 Run at 07:28 on 10/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKSUMs
BIG CREEK SUMMER SENSITIVITY RUN
:MAINSTEM
Base Model min= 2.58 max= 6.12
-30. BASEFLOW min= 2.59 max= 6.12
+30. BASEFLOW min= 2.58 max= 6.12
River Miles
7.0
6
5
4
3
2
1.4
Effective BOD (mg/L)
Begin Reach 2
Begin Reach 2
11.2
11
10
9
8
7
6
5
4
3
2.2
River Kilometers

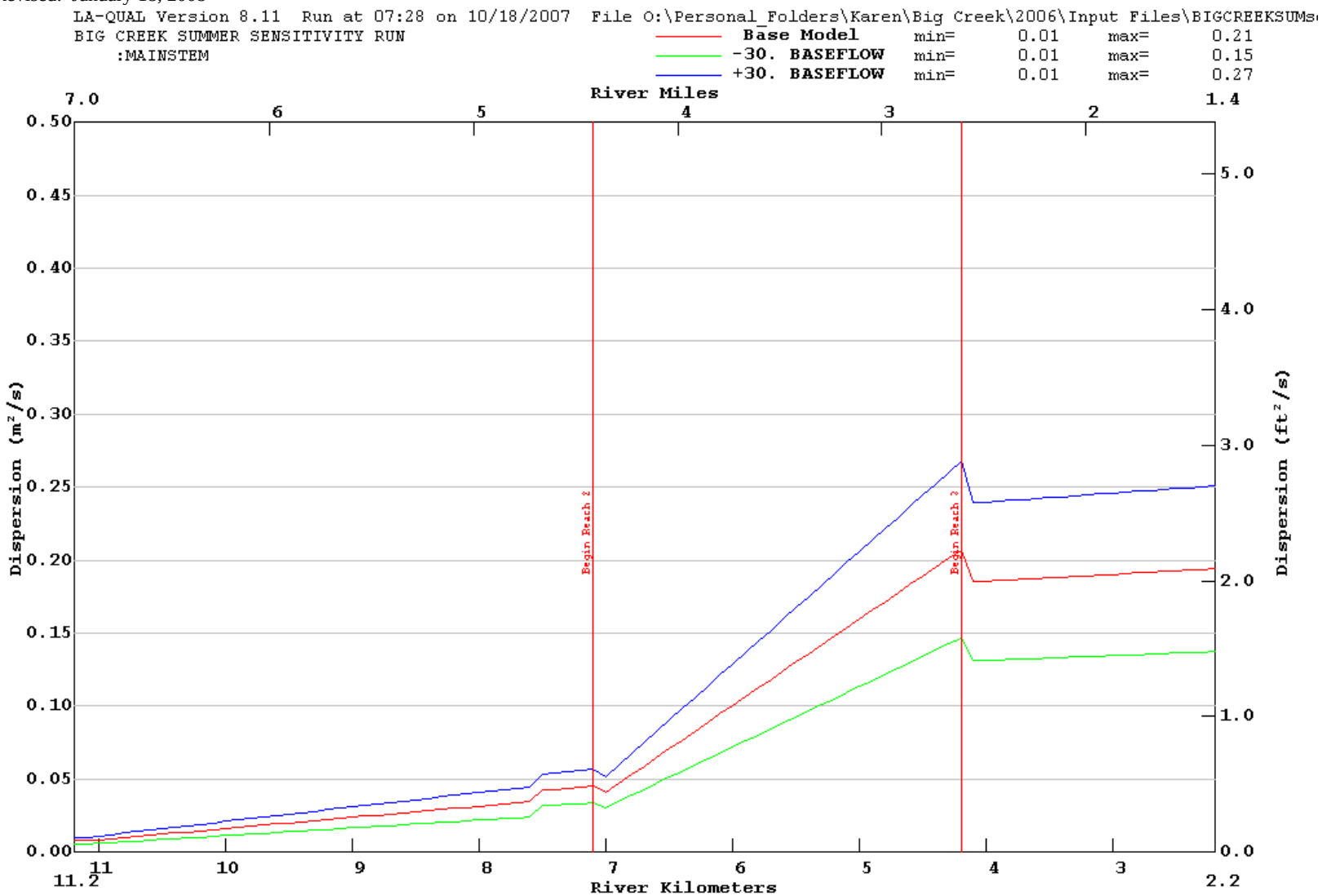

LA-QUAL Version 8.11 Run at 07:28 on 10/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKSUMs
BIG CREEK SUMMER SENSITIVITY RUN
:MAINSTEM
Base Model min= 1.46 max= 3.07
-30. BASEFLOW min= 1.46 max= 3.08
+30. BASEFLOW min= 1.46 max= 3.06
River Miles
7.0
6
5
4
3
2
1.4
Effective BOD#2 (mg/L)
Begin Reach 2
Begin Reach 3
11.2
11
10
9
8
7
6
5
4
3
2.2
River Kilometers


LA-QUAL Version 8.11 Run at 07:28 on 10/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKSUMs
BIG CREEK SUMMER SENSITIVITY RUN
:MAINSTEM
Base Model min= 0.79 max= 1.52
-30. BASEFLOW min= 0.79 max= 1.52
+30. BASEFLOW min= 0.79 max= 1.52
River Miles
River Kilometers
Nitrogenous Oxygen Demand (mg/L)
Begin Reach 2
Begin Reach 3


LA-QUAL Version 8.11 Run at 07:28 on 10/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKSUMs
BIG CREEK SUMMER SENSITIVITY RUN
:MAINSTEM
Base Model min= 1.02 max= 4.40
-30. BASEFLOW min= 1.03 max= 4.40
+30. BASEFLOW min= 1.01 max= 4.40
River Miles
7.0
6
5
4
3
2
1.4
CHLORIDES (MG/L)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Begin Reach 2
Begin Reach 3
11
10
9
8
7
6
5
4
3
11.2
2.2
River Kilometers


LA-QUAL Version 8.11 Run at 07:28 on 10/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKSUMs
BIG CREEK SUMMER SENSITIVITY RUN
:MAINSTEM
Base Model min= 52.70 max= 73.55
-30. BASEFLOW min= 52.70 max= 73.45
+30. BASEFLOW min= 52.70 max= 73.61
River Miles
7.0
6
5
4
3
2
1.4
CONDUCTIVITY (MG/L)
100
90
80
70
60
50
40
30
20
10
0
Begin Reach 2
Begin Reach 3
11
10
9
8
7
6
5
4
3
11.2
2.2
River Kilometers


LA-QUAL Version 8.11 Run at 07:28 on 10/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKSUMs
BIG CREEK SUMMER SENSITIVITY RUN
:MAINSTEM
Base Model min= 0.00 max= 0.11
-30. BASEFLOW min= 0.00 max= 0.08
+30. BASEFLOW min= 0.00 max= 0.14
River Miles
7.0
6
5
4
3
2
1.4
Flow (m³/s)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
Flow (cfs)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Begin Reach 2
Begin Reach 3
11
10
9
8
7
6
5
4
3
11.2
2.2
River Kilometers


LA-QUAL Version 8.11 Run at 07:28 on 10/18/2007 File O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKSUMs
BIG CREEK SUMMER SENSITIVITY RUN
:MAINSTEM
Base Model min= 0.01 max= 0.21
-30. BASEFLOW min= 0.01 max= 0.15
+30. BASEFLOW min= 0.01 max= 0.27
River Miles
7.0
6
5
4
3
2
1.4
Dispersion (m²/s)
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Dispersion (ft²/s)
5.0
4.0
3.0
2.0
1.0
0.0
Begin Reach 2
Begin Reach 3
11
10
9
8
7
6
5
4
3
11.2
2.2
River Kilometers

Appendix I2 – Sensitivity Output Data Set

SENSITIVITY ANALYSIS SUMMARY

:MAINSTEM
BIG CREEK SUMMER SENSITIVITY RUN

Plot 1 Base Model Minimum DO = 5.19

Parameter	%Param Chg	Min D.O.	%D.O. Chg	%Param Chg	Min D.O.	%D.O. Chg
Stream Baseflow	30.	5.19	0.0	-30.	5.19	0.0
Initial Chorophyll a	30.	5.19	0.0	-30.	5.19	0.0
Stream Velocity	30.	4.66	-10.3	-30.	5.73	10.4
Initial Temperature	2.	4.86	-6.3	-2.	5.52	6.4
CBOD Aerobic Decay Rate	30.	5.02	-3.3	-30.	5.42	4.5
CBOD2 Aerobic Decay Rate	30.	5.15	-0.7	-30.	5.23	0.8
CBOD Settling Rate	30.	5.36	3.3	-30.	4.96	-4.4
CBOD2 Settling Rate	30.	5.19	0.0	-30.	5.19	0.0
NBOD Decay Rate	30.	5.16	-0.5	-30.	5.23	0.8
NBOD Settling Rate	30.	5.22	0.5	-30.	5.15	-0.7
Benthal Demand	30.	4.64	-10.5	-30.	5.73	10.5
Stream Dispersion	30.	5.19	0.0	-30.	5.19	0.0
Stream Reaeration	30.	5.72	10.2	-30.	4.21	-18.8
Headwater Flow	30.	5.19	0.0	-30.	5.19	0.0
Headwater DO	30.	5.19	0.0	-30.	5.19	0.0
Headwater CBOD	30.	5.19	0.0	-30.	5.19	0.0
Headwater CBOD2	30.	5.19	0.0	-30.	5.19	0.0
Headwater NBOD	30.	5.19	0.0	-30.	5.19	0.0
Stream Depth	30.	5.58	7.6	-30.	4.80	-7.6
Wasteload Flow	30.	5.19	0.0	-30.	5.19	0.0
Wasteload Temperature	2.	5.19	0.0	-2.	5.19	0.0
Wasteload DO	30.	5.19	0.0	-30.	5.19	0.0
Wasteload CBOD	30.	5.19	0.0	-30.	5.19	0.0
Wasteload CBOD2	30.	5.19	0.0	-30.	5.19	0.0
Wasteload NBOD	30.	5.19	0.0	-30.	5.19	0.0
Lower Boundary Temperature	2.	5.19	0.0	-2.	5.19	0.0
Lower Boundary DO	30.	5.19	0.0	-30.	5.19	0.0
Lower Boundary CBOD	30.	5.19	0.0	-30.	5.19	0.0
Lower Boundary CBOD2	30.	5.19	0.0	-30.	5.19	0.0
Lower Boundary NBOD	30.	5.19	0.0	-30.	5.19	0.0

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

Input file is O:\Personal_Folders\Karen\Big Creek\2006\Input Files\BIGCREEKSUMsensi.txt
Output produced at 07:28 on 10/18/2007

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

CARD TYPE       CONTROL TITLES

TITLE01         BIG CREEK WATERSHED MODEL
TITLE02         BIG CREEK SUMMER SENSITIVITY RUN
CNTROL04  YES   METRIC UNITS
ENDATA01

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

CARD TYPE       MODEL OPTION

MODOPT01   NO   TEMPERATURE
MODOPT02   NO   SALINITY
MODOPT03  YES   CONSERVATIVE MATERIAL  I = CHLORIDES                 IN MG/L
MODOPT04  YES   CONSERVATIVE MATERIAL II = CONDUCTIVITY              IN MG/L
MODOPT05  YES   DISSOLVED OXYGEN
MODOPT06  YES   BOD1 BIOCHEMICAL OXYGEN DEMAND
MODOPT06  YES   BOD2 BIOCHEMICAL OXYGEN DEMAND
MODOPT08  YES   NBOD OXYGEN DEMAND
MODOPT10   NO   PHOSPHORUS
MODOPT11   NO   CHLOROPHYLL A
MODOPT12   NO   MACROPHYTES
MODOPT13   NO   COLIFORM
ENDATA02

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

CARD TYPE       DESCRIPTION OF CONSTANT                       VALUE

PROGRAM         KL MINIMUM                        =         0.70000 meters/day
PROGRAM         INHIBITION CONTROL VALUE          =         3.00000 (inhibit all rates but SOD)
PROGRAM         K2 MAXIMUM                        =        25.00000 per day
PROGRAM         HYDRAULIC CALCULATION METHOD      =         2.00000 (widths and depths)
PROGRAM         SETTLING RATE UNITS               =         2.00000 (values entered as per day)
PROGRAM         ALGAE OXYGEN PROD                 =         0.00000 mg O/ug chl a/day
PROGRAM         DISPERSION EQUATION               =         3.00000 (values entered as a function of D,Q,Vmean)
PROGRAM         OCEAN EXCHANGE RATIO              =         0.00000
ENDATA03

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

 CARD TYPE     RATE CODE     THETA VALUE

ENDATA04

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

CARD TYPE       DESCRIPTION OF CONSTANT                       VALUE
```

```
ENDATA05

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

CARD TYPE       DESCRIPTION OF CONSTANT                        VALUE

ENDATA06

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

CARD TYPE       DESCRIPTION OF CONSTANT                        VALUE

ENDATA07

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

REACH ID      1   BG     BGC1 TO BGC2                    11.20  TO    7.10   0.1000     4.10      41        1     41
REACH ID      2   BG     BGC2 TO BGC3                     7.10  TO    4.20   0.1000     2.90      29       42     70
REACH ID      3   BG     BGC3 TO BGC4                     4.20  TO    2.20   0.1000     2.00      20       71     90
ENDATA08

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

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

HYDR-1        1   BG       0.000       0.000      59.436       0.000       0.000       1.527     0.00000   0.000
HYDR-1        2   BG       0.000       0.000      75.895       0.000       0.000       1.576     0.00000   0.000
HYDR-1        3   BG       0.000       0.000      86.868       0.000       0.000       1.396     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"

HYDR          1   BG      1.00      160.000          0.833          0.000          1.000
HYDR          2   BG      1.00      160.000          0.833          0.000          1.000
HYDR          3   BG      1.00      160.000          0.833          0.000          1.000
ENDATA10

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

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

INITIAL          1   BG       30.50      0.01      5.00      0.00      0.00      0.00     10.00     10.00
INITIAL          2   BG       30.50      0.01      5.00      0.00      0.00      0.00     10.00     10.00
INITIAL          3   BG       30.50      0.01      5.00      0.00      0.00      0.00     10.00     10.00
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

COEF-1     1   BG  11 TEXAS            0.000     0.000     0.000     0.114     0.181     0.200     0.000     0.000     0.034     0.200     0.000     0.000
COEF-1     2   BG  11 TEXAS            0.000     0.000     0.000     0.478     0.191     0.200     0.000     0.000     0.031     0.200     0.000     0.000
COEF-1     3   BG  11 TEXAS            0.000     0.000     0.000     0.803     0.167     0.200     0.000     0.000     0.028     0.200     0.000     0.000
ENDATA12

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

CARD TYPE      REACH  ID        NBOD      NBOD   ORGN CONV       NH3       NH3      PHOS     DENIT
                                DECA      SETT  TO NH3 SRCE     DECA      SRCE      SRCE      RATE

COEF-2           1   BG       0.087     0.100     0.000       0.000     0.000     0.000     0.000
COEF-2           2   BG       0.089     0.100     0.000       0.000     0.000     0.000     0.000
COEF-2           3   BG       0.117     0.100     0.000       0.000     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

INCR-1           1   BG       0.00000     0.01250     30.50      0.00      0.00     80.00   0.00305   0.00000
INCR-1           2   BG       0.00000     0.08790     30.50      0.00      2.50     55.00   0.03031   0.00000
INCR-1           3   BG       0.00000     0.00540     30.50      0.00      0.00      0.00   0.00270   0.00000
ENDATA16

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

CARD TYPE      REACH  ID          DO       BOD      NBOD                        BOD#2

INCR-2           1   BG        2.00      0.00      0.00      0.00      0.00      0.00
INCR-2           2   BG        2.00      0.00      0.00      0.00      0.00      0.00
INCR-2           3   BG        2.00      0.00      0.00      0.00      0.00      0.00
ENDATA17

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

 CARD TYPE      REACH  ID        PHOS     CHL A      COLI       NCM

INCR-3           1   BG        0.00      0.00      0.00      0.00
INCR-3           2   BG        0.00      0.00      0.00      0.00
INCR-3           3   BG        0.00      0.00      0.00      0.00
ENDATA18
```

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

CARD TYPE      REACH  ID       BOD#1     NBOD       COLI       NCM        DO     BOD#2

NONPOINT         1   BG      530.63    155.40      0.00      0.00      0.00    360.07
NONPOINT         2   BG      606.97     90.13      0.00      0.00      0.00    228.07
NONPOINT         3   BG      389.94     66.90      0.00      0.00      0.00    156.74
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      MG/L      MG/L

HDWTR-1          1     HEADWATER              0   0.00280    0.099   30.50     0.01     4.400    52.700   0.00
ENDATA20

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

CARD TYPE     ELEMENT   NAME                        DO     BOD#1     NBOD                          BOD#2
                                                  mg/L      mg/L      mg/L      mg/L      mg/L      mg/L

HDWTR-2          1     HEADWATER                 6.74      6.12      1.52      0.00      0.00      1.46
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

HDWTR-3          1     HEADWATER                  0.00     10.00      0.00      0.00
ENDATA22

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

CARD TYPE   JUNCTION   UPSTRM     RIVER     NAME
             ELEMENT  ELEMENT     KILOM

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      MG/L      MG/L

WSTLD-1       37       7.60  CAINEY BAYOU           0.00280    0.09887    0.064   30.50     0.01     3.700    51.500
ENDATA24

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

WSTLD-2          37     CAINEY BAYOU               5.00      5.96      0.00      1.63      0.00      0.00      0.00      1.53
ENDATA25

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

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

WSTLD-3          37     CAINEY BAYOU                0.00      0.00      0.00      0.00
ENDATA26

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

CARD TYPE    CONSTITUENT                     CONCENTRATION

LOWER BC     TEMPERATURE                        =     30.500     deg C
LOWER BC     SALINITY                           =      0.010     ppt
LOWER BC     CONSERVATIVE MATERIAL I            =      2.800     MG/L
LOWER BC     CONSERVATIVE MATERIAL II           =     47.700     MG/L
LOWER BC     DISSOLVED OXYGEN                   =      5.000     mg/L
LOWER BC     BOD1 BIOCHEMICAL OXYGEN DEMAND     =      7.837     mg/L
LOWER BC     BOD2 BIOCHEMICAL OXYGEN DEMAND     =      5.031     mg/L
LOWER BC     NBOD                               =      2.418     mg/L
LOWER BC     CHLOROPHYLL A                      =     10.000     µg/L
ENDATA27

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

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

ENDATA28

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

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

SENSITIV         BASEFLOW      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         CHLOR A       30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         VELOCITY      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         TEMPERAT       2.0      -2.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         BOD DECA      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         BOD2 DEC      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         BOD SETT      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         BOD2 SET      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         NBOD DEC      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         NBOD SET      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         BENTHAL       30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         DISPERSI      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         REAERATI      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         HDW FLOW      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         HDW DO        30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         HDW BOD       30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         HDW BOD2      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         HDW NBOD      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         DEPTH         30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         WSL FLOW      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         WSL TEMP       2.0      -2.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         WSL DO        30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         WSL BOD       30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         WSL BOD2      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         WSL NBOD      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         LBC TEMP       2.0      -2.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         LBC DO        30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
```

```
SENSITIV         LBC BOD       30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         LBC BOD2      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
SENSITIV         LBC NBOD      30.0     -30.0       0.0       0.0       0.0       0.0       0.0       0.0
ENDATA29

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


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

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


OVERLAY 1 BIGCREEKOVLPROJ.TXT                  :MAINSTEM
ENDATA31



     .....NO ERRORS DETECTED IN INPUT DATA
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 21


FINAL REPORT    HEADWATER                                       BIG CREEK WATERSHED MODEL
REACH NO.  1       BGC1 TO BGC2                                 BIG CREEK SUMMER SENSITIVITY RUN
```

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

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
1	HDWTR	0.00280	30.50	0.01	4.40	52.70	6.74	6.12	1.46	6.12	1.46	1.52	0.00	0.00	0.00	10.00	0.00	0.00
EACH	INCR	0.00030	30.50	0.00	0.00	80.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	
37	WSTLD	0.00280	30.50	0.01	3.70	51.50	5.00	5.96	1.53	5.96	1.53	1.63	0.00	0.00	0.00	0.00	0.00	0.00

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m^3/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m^3	SURFACE AREA m^2	X-SECT AREA m^2	TIDAL PRISM m^3	TIDAL VELO m/s	DISPRSN m^2/s	MEAN VELO m/s
1	11.20	11.10	0.00310	0.0	0.00003	33.83	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.008	0.000
2	11.10	11.00	0.00341	0.0	0.00004	30.81	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.009	0.000
3	11.00	10.90	0.00371	0.0	0.00004	28.28	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.009	0.000
4	10.90	10.80	0.00402	0.0	0.00004	26.13	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.010	0.000
5	10.80	10.70	0.00432	0.0	0.00005	24.29	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.011	0.000
6	10.70	10.60	0.00463	0.0	0.00005	22.69	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.012	0.000
7	10.60	10.50	0.00493	0.0	0.00005	21.29	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.012	0.000
8	10.50	10.40	0.00524	0.0	0.00006	20.05	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.013	0.000
9	10.40	10.30	0.00554	0.0	0.00006	18.95	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.014	0.000

10	10.30	10.20	0.00585	0.0	0.00006	17.96	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.015	0.000
11	10.20	10.10	0.00615	0.0	0.00007	17.07	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.015	0.000
12	10.10	10.00	0.00646	0.0	0.00007	16.26	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.016	0.000
13	10.00	9.90	0.00676	0.0	0.00007	15.53	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.017	0.000
14	9.90	9.80	0.00707	0.0	0.00008	14.86	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.018	0.000
15	9.80	9.70	0.00737	0.0	0.00008	14.25	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.018	0.000
16	9.70	9.60	0.00768	0.0	0.00008	13.68	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.019	0.000
17	9.60	9.50	0.00798	0.0	0.00009	13.16	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.020	0.000
18	9.50	9.40	0.00829	0.0	0.00009	12.67	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.021	0.000
19	9.40	9.30	0.00859	0.0	0.00009	12.22	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.022	0.000
20	9.30	9.20	0.00890	0.0	0.00010	11.81	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.022	0.000
21	9.20	9.10	0.00920	0.0	0.00010	11.41	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.023	0.000
22	9.10	9.00	0.00951	0.0	0.00010	11.05	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.024	0.000
23	9.00	8.90	0.00981	0.0	0.00011	10.71	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.025	0.000
24	8.90	8.80	0.01012	0.0	0.00011	10.38	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.025	0.000
25	8.80	8.70	0.01042	0.0	0.00011	10.08	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.026	0.000
26	8.70	8.60	0.01073	0.0	0.00012	9.79	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.027	0.000
27	8.60	8.50	0.01103	0.0	0.00012	9.52	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.028	0.000
28	8.50	8.40	0.01134	0.0	0.00012	9.27	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.028	0.000
29	8.40	8.30	0.01164	0.0	0.00013	9.02	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.029	0.000
30	8.30	8.20	0.01195	0.0	0.00013	8.79	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.030	0.000
31	8.20	8.10	0.01225	0.0	0.00013	8.57	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.031	0.000
32	8.10	8.00	0.01256	0.0	0.00014	8.37	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.031	0.000
33	8.00	7.90	0.01286	0.0	0.00014	8.17	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.032	0.000
34	7.90	7.80	0.01317	0.0	0.00015	7.98	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.033	0.000
35	7.80	7.70	0.01347	0.0	0.00015	7.80	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.034	0.000
36	7.70	7.60	0.01378	0.0	0.00015	7.63	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.035	0.000
37	7.60	7.50	0.01688	16.6	0.00019	6.22	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.042	0.000
38	7.50	7.40	0.01719	16.3	0.00019	6.11	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.043	0.000
39	7.40	7.30	0.01749	16.0	0.00019	6.01	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.044	0.000
40	7.30	7.20	0.01780	15.7	0.00020	5.90	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.045	0.000
41	7.20	7.10	0.01810	15.5	0.00020	5.80	1.53	59.44	9075.88	5943.60	90.76	0.00	0.000	0.045	0.000
TOT						564.39			372110.91	243687.52					
AVG					0.0001		1.53	59.44			90.76				
CUM						564.39									

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

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
1	11.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
2	11.000	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
3	10.900	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
4	10.800	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
5	10.700	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
6	10.600	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
7	10.500	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
8	10.400	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
9	10.300	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
10	10.200	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
11	10.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
12	10.000	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
13	9.900	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
14	9.800	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00

15	9.700	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
16	9.600	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
17	9.500	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
18	9.400	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
19	9.300	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
20	9.200	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
21	9.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
22	9.000	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
23	8.900	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
24	8.800	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
25	8.700	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
26	8.600	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
27	8.500	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
28	8.400	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
29	8.300	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
30	8.200	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
31	8.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
32	8.000	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
33	7.900	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
34	7.800	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
35	7.700	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
36	7.600	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
37	7.500	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
38	7.400	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
39	7.300	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
40	7.200	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
41	7.100	7.49	0.56	0.29	0.26	0.00	0.06	0.26	0.00	0.22	0.22	0.22	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
AVG 20 DEG C RATE			0.46	0.18	0.20	0.00	0.03	0.20	0.00	0.11			0.09	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
1	11.100	30.50	0.01	3.34	59.25	6.53	2.73	2.96	2.73	2.96	1.41	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
2	11.000	30.50	0.01	3.08	60.87	6.56	2.60	3.05	2.60	3.05	1.41	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
3	10.900	30.50	0.01	2.86	62.25	6.58	2.59	3.07	2.59	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
4	10.800	30.50	0.01	2.67	63.44	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
5	10.700	30.50	0.01	2.50	64.48	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
6	10.600	30.50	0.01	2.35	65.40	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
7	10.500	30.50	0.01	2.22	66.21	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
8	10.400	30.50	0.01	2.10	66.94	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
9	10.300	30.50	0.01	2.00	67.59	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
10	10.200	30.50	0.01	1.90	68.18	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
11	10.100	30.50	0.01	1.82	68.72	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
12	10.000	30.50	0.01	1.74	69.21	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
13	9.900	30.50	0.01	1.67	69.66	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
14	9.800	30.50	0.01	1.60	70.07	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
15	9.700	30.50	0.01	1.54	70.45	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
16	9.600	30.50	0.01	1.48	70.80	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
17	9.500	30.50	0.01	1.43	71.13	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
18	9.400	30.50	0.01	1.38	71.43	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
19	9.300	30.50	0.01	1.34	71.71	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
20	9.200	30.50	0.01	1.29	71.98	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

21	9.100	30.50	0.01	1.25	72.22	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
22	9.000	30.50	0.01	1.22	72.45	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
23	8.900	30.50	0.01	1.18	72.66	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
24	8.800	30.50	0.01	1.15	72.85	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
25	8.700	30.50	0.01	1.12	73.03	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
26	8.600	30.50	0.01	1.09	73.19	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
27	8.500	30.50	0.01	1.07	73.33	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
28	8.400	30.50	0.01	1.05	73.44	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
29	8.300	30.50	0.01	1.03	73.51	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
30	8.200	30.50	0.01	1.02	73.55	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
31	8.100	30.50	0.01	1.02	73.52	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
32	8.000	30.50	0.01	1.02	73.42	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
33	7.900	30.50	0.01	1.04	73.21	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
34	7.800	30.50	0.01	1.08	72.84	6.58	2.58	3.07	2.58	3.07	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
35	7.700	30.50	0.01	1.14	72.26	6.57	2.59	3.06	2.59	3.06	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
36	7.600	30.50	0.01	1.24	71.36	6.56	2.61	3.05	2.61	3.05	1.41	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
37	7.500	30.50	0.01	1.37	70.13	6.52	2.66	3.02	2.66	3.02	1.41	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
38	7.400	30.50	0.01	1.38	69.87	6.55	2.62	3.03	2.62	3.03	1.40	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
39	7.300	30.50	0.01	1.41	69.42	6.55	2.60	3.02	2.60	3.02	1.38	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
40	7.200	30.50	0.01	1.46	68.70	6.52	2.61	2.96	2.61	2.96	1.35	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
41	7.100	30.50	0.01	1.54	67.60	6.37	2.67	2.79	2.67	2.79	1.25	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

FINAL REPORT HEADWATER BIG CREEK WATERSHED MODEL
REACH NO. 2 BGC2 TO BGC3 BIG CREEK SUMMER SENSITIVITY RUN

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

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
42	UPR RCH	0.01810	30.50	0.01	1.54	67.60	6.37	2.67	2.79	2.67	2.79	1.25	0.00	0.00	0.00	10.00	0.00	0.00
EACH	INCR	0.00303	30.50	0.00	2.50	55.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
42	7.10	7.00	0.02113	13.3	0.00018	6.55	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.041	0.000
43	7.00	6.90	0.02416	11.6	0.00020	5.73	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.047	0.000
44	6.90	6.80	0.02719	10.3	0.00023	5.09	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.053	0.000
45	6.80	6.70	0.03022	9.3	0.00025	4.58	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.059	0.000
46	6.70	6.60	0.03326	8.4	0.00028	4.16	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.065	0.000
47	6.60	6.50	0.03629	7.7	0.00030	3.82	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.071	0.000
48	6.50	6.40	0.03932	7.1	0.00033	3.52	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.077	0.000
49	6.40	6.30	0.04235	6.6	0.00035	3.27	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.083	0.000
50	6.30	6.20	0.04538	6.2	0.00038	3.05	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.089	0.000
51	6.20	6.10	0.04841	5.8	0.00040	2.86	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.095	0.000
52	6.10	6.00	0.05144	5.4	0.00043	2.69	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.101	0.000
53	6.00	5.90	0.05447	5.1	0.00046	2.54	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.106	0.000
54	5.90	5.80	0.05750	4.9	0.00048	2.41	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.112	0.000
55	5.80	5.70	0.06053	4.6	0.00051	2.29	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.118	0.001
56	5.70	5.60	0.06357	4.4	0.00053	2.18	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.124	0.001
57	5.60	5.50	0.06660	4.2	0.00056	2.08	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.130	0.001

58	5.50	5.40	0.06963	4.0	0.00058	1.99	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.136	0.001
59	5.40	5.30	0.07266	3.9	0.00061	1.91	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.142	0.001
60	5.30	5.20	0.07569	3.7	0.00063	1.83	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.148	0.001
61	5.20	5.10	0.07872	3.6	0.00066	1.76	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.154	0.001
62	5.10	5.00	0.08175	3.4	0.00068	1.69	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.160	0.001
63	5.00	4.90	0.08478	3.3	0.00071	1.63	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.166	0.001
64	4.90	4.80	0.08781	3.2	0.00073	1.58	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.172	0.001
65	4.80	4.70	0.09084	3.1	0.00076	1.52	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.178	0.001
66	4.70	4.60	0.09388	3.0	0.00078	1.47	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.183	0.001
67	4.60	4.50	0.09691	2.9	0.00081	1.43	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.189	0.001
68	4.50	4.40	0.09994	2.8	0.00084	1.39	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.195	0.001
69	4.40	4.30	0.10297	2.7	0.00086	1.34	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.201	0.001
70	4.30	4.20	0.10600	2.6	0.00089	1.31	1.58	75.89	11961.05	7589.50	119.61	0.00	0.000	0.207	0.001
TOT						77.66			346870.50	220095.48					
AVG					0.0004		1.58	75.90			119.61				
CUM						642.05									

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

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
42	7.000	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
43	6.900	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
44	6.800	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
45	6.700	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
46	6.600	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
47	6.500	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
48	6.400	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
49	6.300	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
50	6.200	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
51	6.100	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
52	6.000	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
53	5.900	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
54	5.800	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
55	5.700	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
56	5.600	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
57	5.500	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
58	5.400	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
59	5.300	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
60	5.200	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
61	5.100	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
62	5.000	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
63	4.900	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
64	4.800	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
65	4.700	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
66	4.600	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
67	4.500	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
68	4.400	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
69	4.300	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
70	4.200	7.49	0.54	0.31	0.26	0.00	0.05	0.26	0.00	0.93	0.93	0.93	0.17	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
AVG 20 DEG C RATE			0.44	0.19	0.20	0.00	0.03	0.20	0.00	0.48			0.09	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* g/m²/d ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
42	7.000	30.50	0.01	1.65	66.09	5.87	2.87	2.37	2.87	2.37	1.02	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
43	6.900	30.50	0.01	1.74	64.92	5.70	2.93	2.19	2.93	2.19	0.92	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
44	6.800	30.50	0.01	1.82	63.98	5.64	2.96	2.10	2.96	2.10	0.87	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
45	6.700	30.50	0.01	1.87	63.21	5.62	2.97	2.06	2.97	2.06	0.85	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
46	6.600	30.50	0.01	1.92	62.56	5.61	2.97	2.04	2.97	2.04	0.84	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
47	6.500	30.50	0.01	1.97	62.00	5.61	2.97	2.02	2.97	2.02	0.83	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
48	6.400	30.50	0.01	2.00	61.53	5.61	2.97	2.02	2.97	2.02	0.83	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
49	6.300	30.50	0.01	2.03	61.11	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
50	6.200	30.50	0.01	2.06	60.75	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
51	6.100	30.50	0.01	2.09	60.42	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
52	6.000	30.50	0.01	2.11	60.14	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
53	5.900	30.50	0.01	2.13	59.88	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
54	5.800	30.50	0.01	2.15	59.64	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
55	5.700	30.50	0.01	2.16	59.43	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
56	5.600	30.50	0.01	2.18	59.24	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
57	5.500	30.50	0.01	2.19	59.06	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
58	5.400	30.50	0.01	2.20	58.89	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
59	5.300	30.50	0.01	2.21	58.74	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
60	5.200	30.50	0.01	2.22	58.60	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
61	5.100	30.50	0.01	2.23	58.47	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
62	5.000	30.50	0.01	2.24	58.35	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
63	4.900	30.50	0.01	2.25	58.23	5.61	2.97	2.00	2.97	2.00	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
64	4.800	30.50	0.01	2.26	58.12	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
65	4.700	30.50	0.01	2.26	58.02	5.61	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
66	4.600	30.50	0.01	2.27	57.91	5.60	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
67	4.500	30.50	0.01	2.27	57.81	5.60	2.97	2.01	2.97	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
68	4.400	30.50	0.01	2.28	57.71	5.59	2.98	2.01	2.98	2.01	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
69	4.300	30.50	0.01	2.28	57.60	5.56	2.98	2.02	2.98	2.02	0.82	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
70	4.200	30.50	0.01	2.27	57.48	5.51	2.99	2.03	2.99	2.03	0.81	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

FINAL REPORT HEADWATER BIG CREEK WATERSHED MODEL
REACH NO. 3 BGC3 TO BGC4 BIG CREEK SUMMER SENSITIVITY RUN

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

ELEM NO.	TYPE	FLOW	TEMP deg C	SALN ppt	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM
71	UPR RCH	0.10600	30.50	0.01	2.27	57.48	5.51	2.99	2.03	2.99	2.03	0.81	0.00	0.00	0.00	10.00	0.00	0.00
EACH	INCR	0.00027	30.50	0.00	0.00	0.00	2.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00	0.00	

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

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW m³/s	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME m³	SURFACE AREA m²	X-SECT AREA m²	TIDAL PRISM m³	TIDAL VELO m/s	DISPRSN m²/s	MEAN VELO m/s
71	4.20	4.10	0.10627	2.6	0.00088	1.32	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.185	0.001

72	4.10	4.00	0.10654	2.6	0.00088	1.32	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.186	0.001
73	4.00	3.90	0.10681	2.6	0.00088	1.31	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.186	0.001
74	3.90	3.80	0.10708	2.6	0.00088	1.31	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.187	0.001
75	3.80	3.70	0.10735	2.6	0.00089	1.31	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.187	0.001
76	3.70	3.60	0.10762	2.6	0.00089	1.30	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.187	0.001
77	3.60	3.50	0.10789	2.6	0.00089	1.30	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.188	0.001
78	3.50	3.40	0.10816	2.6	0.00089	1.30	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.188	0.001
79	3.40	3.30	0.10843	2.6	0.00089	1.29	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.189	0.001
80	3.30	3.20	0.10870	2.6	0.00090	1.29	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.189	0.001
81	3.20	3.10	0.10897	2.6	0.00090	1.29	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.190	0.001
82	3.10	3.00	0.10924	2.6	0.00090	1.28	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.190	0.001
83	3.00	2.90	0.10951	2.6	0.00090	1.28	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.191	0.001
84	2.90	2.80	0.10978	2.6	0.00091	1.28	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.191	0.001
85	2.80	2.70	0.11005	2.5	0.00091	1.28	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.192	0.001
86	2.70	2.60	0.11032	2.5	0.00091	1.27	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.192	0.001
87	2.60	2.50	0.11059	2.5	0.00091	1.27	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.193	0.001
88	2.50	2.40	0.11086	2.5	0.00091	1.27	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.193	0.001
89	2.40	2.30	0.11113	2.5	0.00092	1.26	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.194	0.001
90	2.30	2.20	0.11140	2.5	0.00092	1.26	1.40	86.87	12126.77	8686.80	121.27	0.00	0.000	0.194	0.001
TOT						25.80			242535.39	173735.97					
AVG					0.0009		1.40	86.87			121.27				
CUM						667.85									

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

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	BOD#1 DECAY 1/da	BOD#1 SETT 1/da	ABOD#1 DECAY 1/da	BOD#2 DECAY 1/da	BOD#2 SETT 1/da	ABOD#2 DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
71	4.100	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
72	4.000	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
73	3.900	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
74	3.800	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
75	3.700	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
76	3.600	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
77	3.500	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
78	3.400	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
79	3.300	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
80	3.200	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
81	3.100	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
82	3.000	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
83	2.900	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
84	2.800	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
85	2.700	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
86	2.600	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
87	2.500	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
88	2.400	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
89	2.300	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
90	2.200	7.49	0.61	0.27	0.26	0.00	0.05	0.26	0.00	1.56	1.56	1.56	0.22	0.13	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00
AVG 20 DEG C RATE			0.50	0.17	0.20	0.00	0.03	0.20	0.00	0.80			0.12	0.10	0.00	0.00	0.00	0.00			0.00	0.00	0.00

* $g/m^2/d$ ** mg/L/day

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

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I MG/L	CM-II MG/L	DO mg/L	BOD#1 mg/L	BOD#2 mg/L	EBOD#1 mg/L	EBOD#2 mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO g/m³	COLI #/100mL	NCM
71	4.100	30.50	0.01	2.27	57.34	5.41	3.00	2.05	3.00	2.05	0.81	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
72	4.000	30.50	0.01	2.26	57.20	5.34	3.02	2.06	3.02	2.06	0.80	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
73	3.900	30.50	0.01	2.26	57.05	5.30	3.02	2.08	3.02	2.08	0.80	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
74	3.800	30.50	0.01	2.25	56.91	5.26	3.03	2.09	3.03	2.09	0.80	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
75	3.700	30.50	0.01	2.25	56.77	5.24	3.03	2.10	3.03	2.10	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
76	3.600	30.50	0.01	2.24	56.63	5.22	3.04	2.10	3.04	2.10	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
77	3.500	30.50	0.01	2.24	56.49	5.21	3.04	2.11	3.04	2.11	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
78	3.400	30.50	0.01	2.23	56.35	5.21	3.04	2.11	3.04	2.11	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
79	3.300	30.50	0.01	2.22	56.21	5.20	3.04	2.11	3.04	2.11	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
80	3.200	30.50	0.01	2.22	56.07	5.20	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
81	3.100	30.50	0.01	2.21	55.94	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
82	3.000	30.50	0.01	2.21	55.80	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
83	2.900	30.50	0.01	2.20	55.67	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
84	2.800	30.50	0.01	2.20	55.55	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
85	2.700	30.50	0.01	2.19	55.42	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
86	2.600	30.50	0.01	2.19	55.31	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
87	2.500	30.50	0.01	2.18	55.20	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
88	2.400	30.50	0.01	2.18	55.11	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
89	2.300	30.50	0.01	2.18	55.04	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00
90	2.200	30.50	0.01	2.18	54.99	5.19	3.04	2.12	3.04	2.12	0.79	0.00	0.00	0.00	0.00	10.00	10.00	0.	0.00

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STREAM SUMMARY                                          BIG CREEK WATERSHED MODEL
HEADWATER                                               BIG CREEK SUMMER SENSITIVITY RUN

 TRAVEL TIME       =         667.85 DAYS

 MAXIMUM EFFLUENT  =          16.59 PERCENT

 FLOW              =   0.00310 TO    0.11140   m³/s
 DISPERSION        =   0.0078  TO    0.2071    m²/s
 VELOCITY          =   0.00003 TO    0.00092   m/s
 DEPTH             =   1.40    TO    1.58      m
 WIDTH             =  59.44    TO   86.87      m

 BOD DECAY         =    0.27   TO    0.31      per day
 NH3 DECAY         =    0.00   TO    0.00      per day
 SOD               =    0.22   TO    1.56      g/m²/d
 NH3 SOURCE        =    0.00   TO    0.00      g/m²/d
 REAERATION        =    0.54   TO    0.61      per day
 BOD SETTLING      =    0.26   TO    0.26      per day
 NBOD DECAY        =    0.17   TO    0.22      per day
 NBOD SETTLING     =    0.13   TO    0.13      per day

 TEMPERATURE       =   30.50   TO   30.50      deg C
 DISSOLVED OXYGEN  =    5.19   TO    6.58      mg/L


     .....BEGIN SENSITIVITY RUN  1 ON PARAMETER SET  1 AND COLUMN  1
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
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.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN  2 ON PARAMETER SET  1 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN  3 ON PARAMETER SET  2 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN  4 ON PARAMETER SET  2 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN  5 ON PARAMETER SET  3 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN  6 ON PARAMETER SET  3 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   3 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN  7 ON PARAMETER SET  4 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   3 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED
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.....BEGIN SENSITIVITY RUN  8 ON PARAMETER SET  4 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN  9 ON PARAMETER SET  5 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 10 ON PARAMETER SET  5 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   3 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 11 ON PARAMETER SET  6 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 12 ON PARAMETER SET  6 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   3 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 13 ON PARAMETER SET  7 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   3 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 14 ON PARAMETER SET  7 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
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.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 15 ON PARAMETER SET  8 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 16 ON PARAMETER SET  8 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 17 ON PARAMETER SET  9 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   3 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 18 ON PARAMETER SET  9 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 19 ON PARAMETER SET 10 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 20 ON PARAMETER SET 10 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED
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.....BEGIN SENSITIVITY RUN 21 ON PARAMETER SET 11 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 22 ON PARAMETER SET 11 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   3 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 23 ON PARAMETER SET 12 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 24 ON PARAMETER SET 12 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 25 ON PARAMETER SET 13 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   3 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 26 ON PARAMETER SET 13 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 27 ON PARAMETER SET 14 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
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.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 28 ON PARAMETER SET 14 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 29 ON PARAMETER SET 15 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 30 ON PARAMETER SET 15 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 31 ON PARAMETER SET 16 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 32 ON PARAMETER SET 16 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 33 ON PARAMETER SET 17 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED
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.....BEGIN SENSITIVITY RUN 34 ON PARAMETER SET 17 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED


.....BEGIN SENSITIVITY RUN 35 ON PARAMETER SET 18 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED


.....BEGIN SENSITIVITY RUN 36 ON PARAMETER SET 18 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED


.....BEGIN SENSITIVITY RUN 37 ON PARAMETER SET 19 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   3 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED


.....BEGIN SENSITIVITY RUN 38 ON PARAMETER SET 19 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED


.....BEGIN SENSITIVITY RUN 39 ON PARAMETER SET 20 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED


.....BEGIN SENSITIVITY RUN 40 ON PARAMETER SET 20 AND COLUMN  2
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.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 41 ON PARAMETER SET 21 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 42 ON PARAMETER SET 21 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 43 ON PARAMETER SET 22 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 44 ON PARAMETER SET 22 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 45 ON PARAMETER SET 23 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 46 ON PARAMETER SET 23 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED
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.....BEGIN SENSITIVITY RUN 47 ON PARAMETER SET 24 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED


.....BEGIN SENSITIVITY RUN 48 ON PARAMETER SET 24 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED


.....BEGIN SENSITIVITY RUN 49 ON PARAMETER SET 25 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED


.....BEGIN SENSITIVITY RUN 50 ON PARAMETER SET 25 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED


.....BEGIN SENSITIVITY RUN 51 ON PARAMETER SET 26 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED


.....BEGIN SENSITIVITY RUN 52 ON PARAMETER SET 26 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED
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.....BEGIN SENSITIVITY RUN 53 ON PARAMETER SET 27 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 54 ON PARAMETER SET 27 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 55 ON PARAMETER SET 28 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 56 ON PARAMETER SET 28 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 57 ON PARAMETER SET 29 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 58 ON PARAMETER SET 29 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 59 ON PARAMETER SET 30 AND COLUMN  1
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
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.....CONSTITUENT CALCULATIONS COMPLETED



.....BEGIN SENSITIVITY RUN 60 ON PARAMETER SET 30 AND COLUMN  2
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN   2 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED



.....EXECUTION COMPLETED
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