North Inlet-Winyah Bay (NIW) NERR Water Quality Metadata
January - December 2002
Latest Update: July 1, 2021

I. Data Set & Research Descriptors

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2. Entry verification
The .dat and .csv versions of the raw data files were uploaded to a PC from YSI 6000 or 6600 dataloggers. Raw data were uploaded and plotted using EcoWatch software. CDMO macros were also used in EXCEL 5.0 to identify anomalous or problem data in the files. The CDMO cdmomac3.xls macro allows the user to automatically format column widths to the correct number of decimal places based on YSI sensor specifications. It also allows the user to QA/QC each data logger generated file for missing data points, fill all cells that do not contain data with periods, and find all data points that fall outside the range of what the data logger is designed to measure (i.e. outliers). The CDMO import.xls macro will allow PC users with 30-minute data to automatically create a monthly Excel file from a two-week deployment and insert periods for missing data. In addition, in November 1999 a graphing capability was added to this macro allowing users to produce single parameter and missing data point graphs on a monthly basis.

Comma delimited files are opened in Microsoft EXCEL 5.0 and edited by removing unnecessary headers, footers or spaces and any data which corresponds to the instrument being out of the water for maintenance. Next, data plots were produced and examined for any anomalies using the CDMO graphing Macro for each variable. Suspect data were evaluated as to being either good or bad based on

criteria outlined in the CDMO manual version 4.0. If the data were determined to be bad, they were deleted from the final edited .txt file and then documented in the metadata. If it could not be determined whether or not suspect data were bad (as was often the case with turbidity) the data were left in the final edited .txt file and noted in the metadata as anomalous. The dissolved oxygen (DO) and Turbidity (Turb) probes were the most problematic. In instances where data values increased or decreased in an exponential fashion and or intermittently went outside the accepted range for that instrument and never returned to normal, the data were considered suspect, noted in the metadata, and removed from the final edited data file. Missing data due to equipment failure or maintenance were replaced with periods (.). The date/hour and column reformat macros were then run on the data files before being saved in their final edited form (.txt). Edited (.txt) and raw (.csv) files were then FTP'd to both the Sun Sparc II and the CDMO server and archived. The most current CDMO macros are available on the NERRS CDMO home page. Tracy Buck, and Jennifer Keesee edited and archived the 2002 data for Thousand Acre, Debidue Creek, Oyster Landing, and Clambank Creek.

3. Research Objectives

The principal objective of this study is to record long-term water quality data for North Inlet/Winyah Bay in order to observe any physical changes or trends in water quality over time. Four sites were chosen; two to represent our pristine site and the other two to represent impacted sites. The Oyster Landing site is located near the center of the Reserve and is considered pristine. Debidue Creek and Thousand Acre are both located in waterways that receive run-off from heavily developed areas. The Clambank site is located on a waterway that receives run-off from the undeveloped area of the reserve and is considered a pristine site. Measurements were taken every 30 minutes over roughly two week collecting periods at the Oyster Landing, Debidue Creek, Clambank and Thousand Acre sites.

4. Research methods (YSI 6000 dataloggers)
YSI dataloggers are currently mounted in a 4" diameter PVC pipe which is strapped to a treated 2" X 6" board; and then attached via stainless steel bands to a piling at the Thousand Acre, Debidue Creek, Clambank, and Oyster Landing sites. The PVC pipe that houses the data loggers has two large windows cut out near the bottom for the probes to have direct contact with the water column. A stop bolt placed through the PVC pipe below the cut out windows keeps the datalogger exactly one foot (30 cm) above the creek bottom. Every 30 minutes measurements of specific conductivity, salinity, percent saturation, dissolved oxygen, water temperature, pH, turbidity, and water level are recorded. The two-week sampling interval has been selected due to biofouling of the individual probes and expected battery life. At the end of each sampling interval, the dataloggers were brought back to the laboratory to be downloaded, cleaned and recalibrated following procedures in YSI Service Manual and the Standard Operating Procedures V3.0 provided by NERR SWMP. Downtime for this maintenance is roughly 24 hrs. Before the instruments were cleaned and recalibrated a post calibration reading was taken from each instrument in fresh standard to see if any of the instruments exhibited drift (see II-13). The pH probe was calibrated using a two point method with 7,10 standards. The turbidity probe calibration also used a two-point method using 0 & 100 NTU standards. Specific Conductivity was calibrated using a one-point method and a 10 ms/cm standard that was purchased through YSI, Inc. The turbidity wiper and DO membrane were changed after each deployment. After approximately 24 hours of down time for cleaning and overnight relaxing of the DO membrane, the YSI dataloggers were re-deployed (in some instances the sondes are switched out resulting in less data loss).

5. Site location and character
The North Inlet-Winyah Bay National Estuarine Research Reserve is located on the Southeastern Atlantic coast of the United States in two tidal estuaries, North

Inlet and Winyah Bay, near Georgetown, South Carolina. The North Inlet estuary, located approximately 10 km east of Georgetown, is a bar-built Class C type estuary (Pritchard, 1955). The North Inlet estuary is composed of numerous winding tidal creeks, and is considered a pristine tidal estuary due to minimal anthropogenic impacts. The watershed drains a 24.8 km2 area of mostly pine forest and a moderately developed residential watershed to the north. The Winyah Bay estuary, classified as a Class B type estuary by Pritchard (1955), which originates in the Blue Ridge Mountains of North Carolina, is one of the largest river-estuary ecosystems on the Eastern Seaboard. It is located 14.4 km south of North Inlet. Winyah Bay drains the sub-basins of 6 major rivers, which are heavily impacted by agriculture, mining, and industry. The rivers drain approximately 46,736 km2 of uplands and marshes. Descriptions of the four sampling stations are as follows:

A) Thousand Acre (TA) - (lat. 33:17:57; long. 79:15:36) The Thousand Acre monitoring site is located in Thousand Acre marsh tidal creek and is on the NW corner of the west bridge of Thousand Acre marsh (this site was relocated 07-19-99 to the current location due to heavy siltation and degrading data quality). The present site is about 15m from the mouth of the creek. At the sampling site, creek depth is approximately 2 m MHW and creek width is approximately 10 m. The creek empties into the northeastern side of the mid portion of Winyah Bay and directly drains pine forested upland and wetlands. Salinity ranges from 0 to 15 ppt. and tidal flux is approximately 1m. The bottom is mostly composed of fine sediments and detritus. Georgetown, 5 km upstream from the Thousand Acre site and on the southern side of Winyah Bay, is the homeport for a number of heavy industries including a steel plant, paper mill, chemical plant, and a coal fired power plant. A public sewage treatment plant, which discharges into the bay, is also located in Georgetown.

B) Oyster Landing (OL) - (lat. 33:20:58; long. 79:11:34). The Oyster Landing monitoring site is considered a fairly pristine and undisturbed area located at the end of the Oyster Landing pier which is also where the NI-WB Bay NERR weather station site is located. The pier stretches into the upper reaches of Crabhaul Creek in the mid western portion of North Inlet. The sampling site is located approximately 2.8 km from the headwaters of Crabhaul Creek. The creek directly drains pine-forested uplands and wetlands. Salinity can range from 0-32 ppt. and average tidal flux is approximately 1.44m. The creek has an average depth of ~2 m MHW and average width of ~150m MHW. The bottom mostly is comprised of oyster shell hash with some fine sediment and detritus.

C) Debidue Creek (DC) - (lat 33:21:37, long 79:10:05). The Debidue Creek monitoring site is considered an impacted site that is located approximately 1 km south of the Debidue Colony. The Colony is a large development built on man-made canals that directly drain into the northern portion of Debidue Creek. The DC site is also located in an ocean-dominated Spartina marsh that was formerly surrounded by pine-dominated uplands. Salinity can range from 0 to full strength seawater and an average tidal flux of approximately 2 meters. The approximate depth and width at MHW at the site is 2.2 and 70 m respectively. The bottom is mostly comprised of oyster shell hash with some fine sediment and detritus.

D) Clambank Creek (CB) - (lat 33:20:02, long 79:11:34). The Clambank Creek monitoring site is located roughly in the center of the reserve property. This site is surrounded by a Spartina marsh and drains associated uplands. Salinity ranged from 0.4 to full strength seawater (from August through December 2001). The bottom is mostly comprised of oyster shell hash and some fine sediment. This site is considered a pristine site and is influenced by its close proximity to North Inlet.

6. Data collection period

Thousand Acre data collection began January 1, 1995. Debidue Creek sampling

began March 5, 1998. Oyster Landing data collection began in 1995; however, it
was not considered a SWMP site until 1996 when the collection site was switched
from Caledonia to Oyster Landing. Clambank sampling began in February 1981
through June 1995; however, it was not considered a SWMP site until sampling
resumed in August of 2001 (08/17). All sampling is ongoing.

Deployment dates and times (in Eastern Standard Time) for 2002 follow:

BEGAN		ENDED	
Site: Debidue Creek			
12/17/01,	10:00:00	01/04/02,	12:00:00
01/04/02,	12:30:00	01/17/02,	11:00:00
01/17/02,	11:30:00	02/01/02,	11:00:00
02/01/02,	11:30:00	02/14/02,	09:30:00
02/14/02,	10:00:00	03/05/02,	13:00:00
03/05/02,	13:30:00	03/19/02,	11:30:00
03/19/02,	12:00:00	04/02/02,	12:00:00
04/02/02,	12:30:00	04/17/02,	10:00:00
04/17/02,	10:30:00	04/30/02,	12:00:00
04/30/02,	12:30:00	05/15/02,	10:00:00
05/15/02,	10:30:00	05/25/02,	11:30:00
05/25/02,	12:30:00	05/28/02,	09:30:00
05/28/02,	10:00:00	06/17/02,	13:00:00
06/17/02,	13:30:00	06/28/02,	10:30:00
06/28/02,	11:00:00	07/12/02,	09:30:00
07/12/02,	10:00:00	07/31/02,	12:30:00
07/31/02,	13:00:00	08/15/02,	12:30:00
08/16/02,	14:00:00	08/29/02,	13:30:00
08/29/02,	14:00:00	09/12/02,	13:00:00
09/12/02,	13:30:00	09/26/02,	10:30:00
09/26/02,	11:00:00	10/10/02,	11:30:00
10/10/02,	12:00:00	10/28/02,	12:00:00
10/29/02,	12:30:00	11/21/02,	09:00:00
11/21/02,	09:30:00	12/19/02,	09:00:00
12/20/02,	10:00:00,	01/07/03,	11:30:00
Site: Oyster Landing			
12/18/01,	15:30:00	01/02/02,	13:00:00
01/03/02,	12:30:00	01/17/02,	11:00:00
01/18/02,	11:00:00	01/29/02,	13:30:00
01/30/02,	10:30:00	02/12/02,	13:30:00
02/13/02,	09:30:00	02/27/02,	10:30:00
02/28/02,	13:30:00	03/19/02,	09:00:00
03/20/02,	09:30:00	04/01/02,	11:00:00
04/02/02,	12:00:00	04/17/02,	12:30:00
04/18/02,	08:30:00	04/29/02,	07:30:00
04/30/02,	08:00:00	05/13/02,	08:00:00
05/14/02,	08:30:00	05/27/02,	08:30:00
05/28/02,	08:00:00	06/24/02,	08:00:00

06/25/02, 08:30:00 07/10/02, 08:30:00
07/11/02, 08:30:00 07/30/02, 11:00:00
07/31/02, 08:30:00 08/15/02, 08:00:00
08/16/02, 08:30:00 08/28/02, 11:00:00
08/29/02, 08:30:00 09/11/02, 07:30:00
09/12/02, 10:00:00 09/27/02, 10:30:00
09/27/02, 11:00:00 10/08/02, 09:30:00
10/08/02, 10:00:00 10/22/02, 08:00:00
10/22/02, 08:30:00 11/19/02, 10:30:00
11/19/02, 11:00:00 12/19/02, 09:00:00
12/20/02, 10:30:00 01/07/03, 12:00:00

Site: Thousand Acre
12/18/01, 14:00:00 01/02/02, 09:30:00
01/03/02, 14:30:00 01/16/02, 10:30:00
01/17/02, 15:30:00 01/30/02, 11:00:00
01/31/02, 14:00:00 02/13/02, 10:00:00
02/14/02, 12:00:00 02/27/02, 15:30:00
02/28/02, 14:30:00 03/20/02, 10:00:00
03/21/02, 11:30:00 04/03/02, 10:00:00
04/04/02, 12:30:00 04/18/02, 09:30:00
04/19/02, 09:30:00 05/01/02, 08:00:00
05/02/02, 10:00:00 05/14/02, 09:00:00
05/15/02, 13:00:00 05/29/02, 08:30:00
05/30/02, 09:00:00 06/18/02, 10:00:00
06/19/02, 09:00:00 07/01/02, 08:30:00
07/02/02, 08:30:00 07/15/02, 12:00:00
07/16/02, 13:00:00 07/29/02, 08:00:00
07/30/02, 10:00:00 08/12/02, 08:30:00
08/13/02, 10:00:00 08/26/02, 09:00:00
08/27/02, 10:00:00 09/09/02, 08:30:00
09/10/02, 10:00:00 09/24/02, 07:30:00
09/25/02, 09:30:00 10/09/02, 08:30:00
10/10/02, 10:00:00 10/30/02, 09:00:00
10/31/02, 14:30:00 11/20/02, 13:30:00
11/21/02, 14:30:00 12/09/02, 09:00:00
12/10/02, 10:30:00 01/09/03, 12:30:00

Site: Clambank Creek
12/18/02, 13:30:00 01/02/02, 10:00:00
01/03/02, 14:00:00 01/16/02, 11:00:00
01/18/02, 11:30:00 01/30/02, 12:00:00
01/31/02, 14:30:00 02/13/02, 11:00:00
02/14/02, 11:00:00 02/27/02, 10:00:00
02/28/02, 13:30:00 03/20/02, 11:00:00
03/21/02, 11:00:00 04/03/02, 10:30:00
04/04/02, 12:00:00 04/18/02, 10:00:00
04/19/02, 09:30:00 05/01/02, 09:00:00
05/02/02, 09:30:00 05/14/02, 09:30:00
05/15/02, 12:00:00 05/23/02, 10:00:00
05/23/02, 11:00:00 05/28/02, 12:00:00
05/29/02, 08:30:00 06/18/02, 10:30:00
06/19/02, 09:30:00 07/01/02, 09:00:00
07/02/02, 09:00:00 07/15/02, 12:30:00

07/16/02, 12:30:00 07/29/02, 09:00:00
07/30/02, 09:30:00 08/12/02, 09:00:00
08/13/02, 09:30:00 08/26/02, 09:30:00
08/27/02, 09:30:00 09/09/02, 09:30:00
09/10/02, 09:30:00 09/25/02, 09:30:00
09/26/02, 10:00:00 10/09/02, 08:00:00
10/09/02, 08:30:00 10/30/02, 09:30:00
10/31/02, 09:30:00 11/20/02, 14:00:00
11/21/02, 13:30:00 12/09/02, 09:30:00
12/10/02, 10:00:00 01/09/03, 12:00:00

7. Distribution

According to the Ocean and Coastal Resource Management Data Dissemination Policy for the NERRS System-wide Monitoring Program, NOAA/ERD retains the right to analyze, synthesize and publish summaries of the NERRS System-wide Monitoring Program data. The PI retains the right to be fully credited for having collected and processed the data. Following academic courtesy standards, the PI and NERR site where the data were collected will be contacted and fully acknowledged in any subsequent publications in which any part of the data are used. Manuscripts resulting from the NOAA/OCRM supported research that are produced for publication in open literature, including refereed scientific journals, will acknowledge that the research was conducted under an award from the Estuarine Reserves Division, Office of Ocean and Coastal Resource Management, National Ocean Service, National Oceanic and Atmospheric Administration. The data set enclosed within this package/transmission is only as good as the quality assurance/quality control procedures outlined by the enclosed metadata reporting statement. The user bears all responsibility for its subsequent use/misuse in any further analyses or comparisons. The Federal government does not assume liability to the Recipient of third persons, nor will the Federal government reimburse or indemnify the Recipient for its liability due to any losses resulting in any way from the use of this data.

NERR water quality data and metadata can be obtained from the Research Coordinator at the individual NERR site (please see section 1. Principal investigators and contact persons), from the Data Manager at the Centralized Data Management Office (please see personnel directory under the general information link on CDMO homepage) and online at the CDMO homepage http://cdmo.baruch.sc.edu/. Data are available in text tab-

delimited format, Microsoft Excel spreadsheet format and comma-delimited format.

8. Associated researchers and projects

A water chemistry program is associated with the NIW core-monitoring program.
Variables sampled include: chlorophyll, dissolved organic carbon, nitrate-
nitrite, orthophosphate, and ammonia. (See documentation on the NIW WWW home
page for further details). Thousand Acre is our permanent monitoring station
for the NERR monitoring program, but Oyster Landing and Debidue Creek were also
sampled beginning in 1998. These stations are also included in our NIW core-
monitoring program.

A long-term fish survey is also done at the Oyster Landing site bi-weekly.
Species present, total weight, individual weights and standard lengths of fish
that utilize the marsh at low tide are recorded. In the spring, summer, and
fall months, fish utilizing the marsh at high tide are also sampled.

The NERR weather station is also located at the Oyster Landing site. Air temperature and humidity, barometric pressure, solar radiation (total and PAR),
wind speed and direction, and precipitation are measured.

II. Physical Structure Descriptors

9. Variable sequence, column format, range of measurements, units, resolution,
and accuracy

YSI 6000/6600 datalogger

Variable	Range of Measurements	Resolution	Accuracy
Date	1-12, 1-31, 00-99 (Mo,Day,Yr)	1 mo, 1 day, 1 yr	NA
Time	0-24, 0-60, 0-60 (Hr,Min,Sec)	1 hr, 1 min, 1 s	NA
Temp	-5 to 45 (c)	0.01 C	+/- 0.15C
Sp COND	0-100(mS/cm)	0.01mS/cm	+/-0.5% Of reading + 0.001mS/Cm
Salinity	0-70 Parts per thousand (ppt)	0.01 ppt	+/- 1% of Reading or 0.1 ppt, (whichever is greater)
DO	0-200 (% air saturation)	0.1% @air sat	+/-2% @air Saturation

DO	200-500 (% air saturation	0.1% @ air sat	+/- 6% @ Saturation
DO	0-20 (mg/l)	0.01 mg/l	+/- 0.2mg/l
DO	20-50 (mg/l)	0.01 mg/l	+/- 0.6mg/l
Depth (shallow)	0-9.1 (m)	0.001m	+/- 0.018m
PH	2-14 units	0.01 units	+/- 0.2units
Turb	0-1000 NTU	0.1 NTU	+/- 5% of Reading or 2 NTU (whichever is greater)

Data columns are separated by tabs. Each file contains a two line column header at the top of the page which identifies measurements and units for each column.

10. Coded variable indicator and variable code definitions
Site definitions: OL = Oyster Landing; TA = Thousand Acre, DC = Debidue Creek,
CB = Clambank Creek

11. Data anomalies (suspect data)

Any time a reference is made to turbidity data being negative and/or zero, it
was recorded as a negative in the raw data file and a zero in the edited data
file due to the formatting of Excel. The technician edited none of these data
points by hand nor did he/she delete any of them.

JANUARY 2002

DEBIDUE CREEK

a). For the following dates and times all data were deleted, as readings were
consistent with the probes being out of the water (i.e. negative depth values
and inconsistent salinity/Sp. Cond. values):

01/28/2002 01:30:00
01/29/2002 02:00:00 through 01/29/2002 02:30:00
01/30/2002 03:30:00

b). For the following dates and times the datalogger recorded negative depth
data. However, specific conductivity and salinity sensor readings suggest that
the datalogger was not out of the water, so suspect that negative values

indicate shallow depth and are simply due to a slight calibration error. Data
were retained.

01/17/2002 14:30:00
01/24/2002 22:00:00 through 01/24/2002 22:30:00
01/28/2002 01:00:00
01/28/2002 02:00:00
01/28/2002 14:30:00 through 01/28/2002 15:00:00
01/29/2002 01:30:00
01/29/2002 03:00:00
01/29/2002 15:30:00
01/30/2002 02:30:00 through 01/30/2002 03:00:00
01/30/2002 04:00:00
01/30/2002 16:00:00 through 01/30/2002 16:30:00

OYSTER LANDING

a). For the following dates and times the datalogger recorded negative depth
data. However, specific conductivity and salinity sensor readings suggest that
the datalogger was not out of the water, so suspect that negative values
indicate shallow depth and are simply due to a slight calibration error. Data
were retained.

01/06/2002 20:30:00 through 01/06/2002 22:00:00

b). For the following dates and times all dissolved oxygen data (% and mg/l) was
deleted due to negative values &/or possible punctured membrane:

01/01/02 00:00:00 through 01/02/02 13:00:00

c). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

01/02/02 13:30:00 through 01/03/02 12:00:00
01/17/02 11:30:00 through 01/18/02 10:30:00
01/29/02 14:00:00 through 01/30/02 10:00:00

THOUSAND ACRE

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

01/02/02 10:00:00 through 01/03/02 14:00:00
01/16/02 11:00:00 through 01/17/02 15:00:00
01/30/02 11:30:00 through 01/31/02 13:00:00

CLAMBANK CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

01/02/02 10:30:00 through 01/03/02 13:30:00
01/16/02 11:30:00 through 01/18/02 11:00:00
01/30/02 12:30:00 through 01/31/02 14:00:00

b). For the following dates and times, dissolved oxygen data (% and mg/l) was
deleted due to a probe failure:

01/03/02 22:00:00 through 01/16/02 11:00:00

c). For the following dates and times, turbidity data were negative and/or
zero.
While these may be due to a small calibration error, they are within the -2 NTU
specifications of the probe. Data were retained.

01/01/2002 03:00:00
01/01/2002 04:30:00
01/03/2002 16:00:00 through 01/03/2002 18:30:00
01/03/2002 22:00:00 (-0020)
01/04/2002 02:00:00 through 01/04/2002 05:00:00
01/04/2002 07:00:00 through 01/04/2002 07:30:00
01/04/2002 08:30:00
01/05/2002 00:00:00 through 01/05/2002 00:30:00
01/05/2002 01:30:00
01/05/2002 02:30:00
01/05/2002 03:30:00 through 01/05/2002 07:30:00
01/05/2002 08:30:00 through 01/05/2002 09:00:00
01/05/2002 10:30:00
01/05/2002 11:30:00
01/05/2002 13:30:00 through 01/05/2002 21:00:00
01/05/2002 22:00:00 through 01/06/2002 01:00:00
01/06/2002 02:00:00 through 01/06/2002 04:30:00
01/06/2002 05:30:00 through 01/06/2002 06:30:00
01/06/2002 11:30:00
01/06/2002 16:30:00 through 01/06/2002 21:00:00
01/06/2002 22:30:00 through 01/12/2002 14:00:00
01/12/2002 21:30:00
01/12/2002 22:30:00 through 01/13/2002 00:30:00
01/13/2002 01:30:00 through 01/14/2002 11:30:00
01/14/2002 14:00:00
01/14/2002 15:30:00 through 01/14/2002 18:30:00
01/14/2002 21:00:00 through 01/15/2002 00:00:00
01/15/2002 01:30:00
01/15/2002 02:30:00 through 01/15/2002 05:00:00
01/15/2002 06:00:00 through 01/15/2002 07:30:00
01/15/2002 08:30:00

01/15/2002 11:00:00
01/15/2002 12:00:00 through 01/15/2002 13:00:00
01/15/2002 14:00:00 through 01/15/2002 16:00:00
01/15/2002 17:00:00 through 01/15/2002 18:30:00
01/15/2002 19:30:00 through 01/16/2002 11:00:00

d). For the following dates and times, turbidity data were very inconsistent.
It is possible that the wiper partially obscured the optics at the beginning of
the deployment, causing data to be very erratic. Data were deleted.
01/03/2002 22:00:00 through 01/05/2002 12:30:00

FEBRUARY 2002

DEBIDUE CREEK

a). For the following dates and times the datalogger recorded negative depth
data. However, specific conductivity and salinity sensor readings suggest that
the datalogger was not out of the water, so suspect that negative values
indicate shallow depth and are simply due to a slight calibration error. Data
were retained.

02/01/2002 05:00:00 through 02/01/2002 05:30:00

b). For the following dates and times, turbidity data were negative and/or
zero.
While these may be due to a small calibration error, they are within the -2 NTU
specifications of the probe. Data were retained.
02/06/2002 10:00:00 through 02/06/2002 10:30:00
02/06/2002 15:00:00 through 02/06/2002 15:30:00
02/06/2002 16:30:00
02/14/2002 07:00:00

c). For the following dates and times dissolved oxygen data (% and mg/l) were
deleted due to a possible membrane puncture or bubble under membrane. Dissolved
oxygen data fell quickly from an average of 96.8% (02/01/02 00:00:00 - 02/26/02
02:00:00) to a low of -37.8% (02/28/02 12:00:00). Data were deleted beginning
at the point that it was estimated the membrane had most probably failed.

02/24/02 13:00:00 through 02/28/02 23:30:00

OYSTER LANDING

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

02//2/02 14:00:00 through 02/13/02 09:30:00
02/27/02 11:00:00 through 02/28/02 13:00:00

b). For the following dates and times the datalogger recorded negative and/or
zero depth data. However, specific conductivity and salinity sensor readings
suggest that the datalogger was not out of the water, so suspect that negative
values indicate shallow depth and are simply due to a slight calibration error.
Data were retained.

02/02/02 06:00:00
02/04/02 20:00:00 through 02/04/02 20:30:00

THOUSAND ACRE

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

02/13/02 10:30:00 through 02/14/02 11:30:00
02/27/02 16:00:00 through 02/28/02 14:00:00

b). For the following dates and times, turbidity spiked above 1000 NTU possibly
due to a precipitation event during that period (rained 02/19-21/02). This site
is subject to silt-laden runoff from Thousand Acre Rice Field during/after rain
events. Data were retained.

02/19/02 12:00:00
02/20/02 17:30:00

CLAMBANK CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

02/13/02 11:30:00 through 02/14/02 10:30:00
02/27/02 10:30:00 through 02/28/02 13:30:00

MARCH 2002

DEBIDUE CREEK

a). For the following dates and times, dissolved oxygen data (% and mg/l) were
deleted due to possible membrane puncture or bubble under membrane.

03/01/02 00:00:00 through 03/05/02 13:00:00

b). For the following dates and times, turbidity spiked above 1000 NTU possibly
due to wrack and/or an animal passing in front of the optics. Data were retained.

03/26/02 19:30:00
03/27/02 02:00:00
03/27/02 21:30:00

OYSTER LANDING

a). For the following dates and times, data are missing due to the sonde being
out of the water for maintenance:

03/19/02 09:30:00 through 03/20/02 09:00:00

b). For the following dates and times the datalogger recorded negative depth
data. However, specific conductivity and salinity sensor readings suggest that
the datalogger was not out of the water, so suspect that negative values
indicate shallow depth and are simply due to a slight calibration error. Data
were retained.

03/03/2002 06:00:00
03/03/2002 17:30:00 through 03/03/2002 18:30:00
03/04/2002 06:30:00 through 03/04/2002 07:00:00
03/04/2002 18:30:00
03/13/2002 14:30:00

THOUSAND ACRE

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

03/17/02 20:00:00 through 03/21/02 11:00:00

b). For the following dates and times, turbidity data spiked above 1000 NTU.
During this period, dissolved oxygen, pH, salinity and conductivity data dropped
and were very noisy. There was no known weather event to explain these values.
Battery power dropped steadily over the deployment until the sonde quit logging

data on 03/17/02 at 20:00 EST. The sonde was heavily fouled with wrack upon retrieval. YSI engineer (Mike Lizotte) suggests that these readings are not typical of low battery power, but rather a severe fouling event preventing adequate flow through the mesh bag and probe guard. For this reason, turbidity data (and all other parameters) were retained, but should be considered suspect.

03/08/2002 01:30:00
03/09/2002 03:30:00
03/09/2002 04:30:00
03/10/2002 15:30:00
03/10/2002 17:30:00
03/10/2002 18:30:00 through 03/10/2002 19:00:00
03/10/2002 23:00:00
03/11/2002 01:00:00
03/11/2002 03:30:00
03/11/2002 05:00:00
03/11/2002 06:00:00
03/11/2002 07:00:00
03/11/2002 09:00:00
03/11/2002 10:30:00
03/11/2002 14:00:00
03/11/2002 15:00:00
03/11/2002 18:00:00
03/12/2002 00:00:00
03/12/2002 02:00:00 through 03/12/2002 03:00:00
03/12/2002 05:00:00
03/12/2002 08:00:00
03/12/2002 09:30:00
03/12/2002 16:00:00
03/12/2002 17:00:00 through 03/13/2002 08:30:00
03/13/2002 09:30:00 through 03/13/2002 13:00:00
03/13/2002 14:00:00 through 03/13/2002 20:30:00
03/13/2002 21:30:00 through 03/14/2002 00:30:00
03/14/2002 01:30:00 through 03/14/2002 02:00:00
03/14/2002 03:30:00 through 03/14/2002 06:00:00
03/14/2002 07:00:00 through 03/14/2002 07:30:00
03/14/2002 08:30:00
03/14/2002 12:30:00
03/14/2002 15:30:00 through 03/14/2002 16:00:00
03/14/2002 17:30:00
03/14/2002 18:30:00
03/14/2002 19:30:00
03/14/2002 20:30:00
03/14/2002 21:30:00
03/14/2002 23:30:00
03/15/2002 00:30:00
03/15/2002 01:00:00 through 03/15/2002 04:00:00
03/15/2002 05:30:00 through 03/15/2002 06:00:00
03/15/2002 07:00:00 through 03/15/2002 08:30:00

03/15/2002 10:00:00 through 03/15/2002 11:30:00
03/15/2002 12:30:00 through 03/15/2002 14:00:00
03/15/2002 16:30:00 through 03/16/2002 00:30:00
03/16/2002 02:30:00 through 03/16/2002 04:00:00
03/16/2002 05:00:00
03/16/2002 06:00:00
03/16/2002 08:00:00
03/16/2002 11:30:00 through 03/16/2002 12:00:00
03/16/2002 13:00:00 through 03/16/2002 15:00:00
03/16/2002 18:00:00 through 03/16/2002 23:30:00
03/17/2002 01:00:00 through 03/17/2002 01:30:00
03/17/2002 02:30:00 through 03/17/2002 03:30:00
03/17/2002 04:30:00 through 03/17/2002 05:00:00
03/17/2002 06:00:00 through 03/17/2002 06:30:00
03/17/2002 09:30:00 through 03/17/2002 10:30:00
03/17/2002 11:30:00
03/17/2002 12:30:00 through 03/17/2002 13:30:00
03/17/2002 14:30:00
03/17/2002 16:30:00 through 03/17/2002 18:00:00

CLAMBANK CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

03/20/02 11:30:00 through 03/21/02 10:30:00

b). For the following dates and times, turbidity data were negative and/or
zero.
While these may be due to a small calibration error, they are within the 2 NTU
specifications of the probe. Data were retained.

03/05/2002 18:30:00
03/07/2002 09:30:00
03/18/2002 16:30:00

APRIL 2002

DEBIDUE CREEK

a). For the following dates and times, turbidity data were negative and/or zero.
While these may be due to a small calibration error, they are within the -2 NTU
specifications of the probe. Data were retained.

04/10/2002 02:30:00

b). For the following dates and times, turbidity spiked above 1000 NTU possibly
due to wrack and/or an animal passing in front of the optics. Data were

retained.

04/29/2002 23:00:00

OYSTER LANDING

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

04/01/02 11:30:00 through 04/02/02 11:30:00
04/17/02 13:00:00 through 04/18/02 07:30:00
04/29/02 08:00:00 through 04/30/02 08:30:00

b). For the following dates and times the datalogger recorded negative depth
data. However, specific conductivity and salinity sensor readings suggest that
the datalogger was not out of the water, so suspect that negative values indicate shallow depth and are simply due to a slight calibration error. Data
were retained.

04/29/2002 04:30:00 through 04/29/2002 05:00:00

THOUSAND ACRE

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

04/03/02 10:30:00 through 04/04/02 12:00:00
04/18/02 10:00:00 through 04/19/02 09:00:00

b). For the following dates and times, turbidity spiked above 1000 NTU. It was
found on retrieval that the turbidity wiper was parked partially over the optics, possibly due to excessive fouling by mud and wrack. It is unknown how
long during the deployment the wiper malfunctioned, therefore, all turbidity
data during the period of 1000+ NTU were considered suspect and deleted.

04/27/02 16:00:00 through 04/30/02 23:30:00

c). For the following dates and times, dissolved oxygen data (% and mg/l) were
deleted due to suspected probe malfunction. DO readings were unusually high
(>150%) for this site, while the pre-deployment calibration was stable at a low
of 58.4% with DO gain of 1.71. There were no signs of bubbles, tears or fouling

of the DO membrane upon retrieval.

04/19/02 09:30:00 through 04/30/02 23:30:00

CLAMBANK CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

04/03/02 11:00:00 through 04/04/02 11:30:00
04/18/02 10:30:00 through 04/19/02 09:00:00

b). For the following dates and times, the datalogger malfunctioned and did not
log data, most likely due to low battery power.

04/11/02 14:30:00 through 04/11/02 16:30:00
04/11/02 23:30:30 through 04/12/02 01:30:00
04/12/02 06:30:00 through 04/12/02 11:00:00
04/12/02 17:30:00 through 04/13/02 00:30:00
04/13/02 03:00:00 through 04/13/02 11:00:00
04/13/02 19:30:00 through 04/14/02 01:00:00
04/14/02 02:00:00 through 04/14/02 11:30:00
04/14/02 21:00:00 through 04/18/02 10:00:00

c). For the following dates and times, turbidity data were negative and/or
zero.
While these may be due to a small calibration error, they are within the -2 NTU
specifications of the probe. Data were retained.
04/11/2002 13:30:00
04/13/2002 14:30:00
04/19/2002 13:00:00 through 04/19/2002 13:30:00
04/20/2002 02:00:00
04/20/2002 14:00:00
04/21/2002 03:00:00
04/22/2002 16:30:00
04/23/2002 05:00:00
04/23/2002 17:30:00
04/23/2002 23:30:00
04/24/2002 12:00:00 through 04/24/2002 12:30:00
04/24/2002 18:30:00 through 04/24/2002 19:00:00
04/25/2002 07:00:00
04/25/2002 14:00:00
04/26/2002 08:30:00
04/26/2002 14:00:00
04/27/2002 03:00:00
04/27/2002 21:30:00
04/28/2002 16:30:00
04/28/2002 22:30:00
04/29/2002 04:30:00
04/29/2002 10:30:00

04/29/2002 23:00:00
04/30/2002 04:30:00

d.) For the following dates and times, turbidity data were negative (-0003),
possibly due to a slight calibration error. Data were retained.
04/22/2002 04:00:00
04/24/2002 06:00:00
04/28/2002 22:00:00
04/29/2002 05:30:00
04/30/2002 11:30:00

MAY 2002

DEBIDUE CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

05/24/02 12:00:00
05/28/02 09:30:00

b). For the following dates and times, turbidity spiked above 1000 NTU possibly
due to wrack and/or an animal passing in front of the optics. Data were retained.

05/10/02 05:00:00

c). For the following dates and times, dissolved oxygen data (% and mg/l)
should be considered suspect as readings dropped below 20% and remained low
through retrieval. Post calibration DO% was 47.0% and the dissolved oxygen probe
was heavily fouled with mud and algae. Data were retained.

05/09/02 12:30:00 through 05/15/02 10:00:00

OYSTER LANDING

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

05/13/02 08:30:00 through 05/14/02 08:00:00
05/27/02 09:00:00 through 05/28/02 08:00:00

b). For the following dates and times the datalogger recorded negative/zero
depth data. However, specific conductivity and salinity sensor readings suggest

that the datalogger was not out of the water, so suspect that negative values
indicate shallow depth and are simply due to a slight calibration error. Data
were retained.

05/14/02 14:00:00 through 05/14/02 14:30:00

THOUSAND ACRE

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

05/01/02 08:30:00 through 05/02/02 09:30:00
05/14/02 09:30:00 through 05/15/02 12:30:00
05/29/02 09:00:00 through 05/30/02 08:30:00

b). For the following dates and times, turbidity spiked above 1000 NTU. It was
found on retrieval that the turbidity wiper was parked partially over the
optics, possibly due to excessive fouling by mud and wrack. It is unknown how
long during the deployment the wiper malfunctioned, therefore, all turbidity
data during the period of 1000+ NTU were considered suspect and deleted.

05/01/02 00:00:00 through 05/01/02 08:00:00

c). For the following dates and times, dissolved oxygen data (% and mg/l)
dropped into the teens and remained until retrieval. There was no evidence of a
tear or bubble under the membrane, and excessive fouling was not evident upon
retrieval. Post calibration DO% was 122%. Suspect fouling by mud that was
dislodged/washed away upon retrieval of the sonde. Data were retained but
should be considered suspect.

05/09/02 12:30:00 through 05/14/02 09:00:00

d). For the following dates and times, pH data did not follow the normal tidal
trend for this site. There was no evidence of excessive fouling upon retrieval.
Post calibration pH in 7.0 standard was 7.59. Suspect fouling by mud that was
dislodged/washed away upon retrieval of the sonde. Data were retained but
should be considered suspect.

05/09/02 12:30:00 through 05/14/02 09:00:00

e) For the following dates and times, dissolved oxygen data (% and mg/l) were
deleted due to suspected probe malfunction. DO readings were unusually high
(>150%) for this site, while the pre-deployment calibration was stable at a low
of 58.4% with DO gain of 1.71. There were no signs of bubbles, tears or fouling
of the DO membrane upon retrieval.
05/01/02 00:00:00 – 08:00:00

CLAMBANK CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

05/01/02 10:00:00 through 05/02/02 09:00:00
05/14/02 10:00:00 through 05/15/02 11:30:00
05/23/02 10:30:00
05/28/02 12:30:00 through 05/29/02 08:00:00

b). For the following dates and times, turbidity data were negative and/or zero.
While these may be due to a small calibration error, they are within the 2 NTU
specifications of the probe. Data were retained.
05/01/02 05:30:00
05/01/02 07:00:00
05/01/02 08:00:00

c.) For the following dates and times, turbidity data were negative (-0003)
possibly due to a slight calibration error. Data were retained.
05/01/02 06:00:00

JUNE 2002

DEBIDUE CREEK

a). For the following dates and times depth data were inaccurate as the sonde
had not settled to the bottom of the pvc casing during deployment. Data were
deleted.

06/28/02 11:00:00 through 06/30/02 23:30:00

b). As noted above (a.), the sonde was improperly deployed during the June 28
11:00:00 through July 12 09:30 deployment so the sonde was not recording at the

standard depth of 1 foot above the creek bottom. There were no recorded "out of water" events in July during this deployment however, so all other parameters remaining for this deployment were retained but should be considered suspect as it was recorded at a non-standard depth for this site.

c). For the following dates and times, salinity data were affected by heavy fouling. It was noted upon retrieval that the conductivity probe was completely occluded by sea-squirts. Data were deleted from the point where no tidal signal was detected through the end of the deployment.

06/11/02 18:00:00 through 06/17/02 13:00:00

d). For the following dates and times, turbidity data were negative and/or zero. While these may be due to a small calibration error, they are within the -2 NTU specifications of the probe. Data were retained.

06/29/2002 12:00:00
06/29/2002 18:30:00
06/30/2002 00:30:00
06/30/2002 07:00:00 through 06/30/2002 08:00:00
06/30/2002 12:30:00
06/30/2002 19:00:00 through 06/30/2002 19:30:00

e). Dissolved oxygen data from around 06/11/02 to the end of deployment on 06/17/02 13:00 should be considered suspect as heavy fouling may have caused reduced DO measurements during this period. The last DO reading prior to retrieval (6/17/02 13:00) was 56.4% while the first DO reading upon deployment (6/17/02 13:30:00) was 100.8%. Post calibration DO (pre-cleaning) was 5.9% while post-cleaning DO (same membrane) was 97.0% in saturated air.

OYSTER LANDING

a). For the following dates and times, data are missing due to sonde being out of the water for maintenance:

06/24/02 08:30:00 through 06/25/02 08:00:00

b). For the following dates and times, dissolved oxygen data (% and mg/l) were deleted due to reported outliers and heavy fouling of the DO membrane upon

retrieval. Dissolved oxygen data peaked near 170% and then fell to -35.6%.
Data were deleted during the entire period of suspected fouling.

06/22/02 02:30:00 through 06/24/02 08:00:00

THOUSAND ACRE

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

06/18/02 10:00:00 through 06/19/02 08:30:00

b). For the following dates and times, turbidity data were greater than 1000.
Suspect intermittent fouling episodes obscuring optics. Data were retained.

06/03/2002 15:00:00 through 06/03/2002 15:30:00
06/06/2002 20:00:00
06/07/2002 08:00:00 through 06/07/2002 11:30:00
06/07/2002 18:00:00
06/08/2002 01:30:00 through 06/08/2002 02:30:00
06/08/2002 12:30:00 through 06/08/2002 16:30:00
06/08/2002 17:30:00
06/09/2002 18:30:00 through 06/09/2002 19:00:00

c). For the following dates and times, turbidity data were greater than 1000.
The sonde was heavily fouled with mud upon retrieval, the turbidity wiper arm
was parked partially over the optics, and all probes were submerged in approximately 2.5" of mud built up in bottom of probe guard. Data were deleted
during the suspected period of fouling.

06/11/02 19:00:00 through 06/18/02 09:30:00

d). For the following dates and times, turbidity data were greater than 1000.
There was no evidence of fouling upon retrieval, so suspect intermittent fouling
episodes in response to heavy runoff from rain events during this period. Data
were retained.

06/22/2002 06:00:00 through 06/22/2002 07:00:00
06/22/2002 08:00:00
06/22/2002 11:00:00
06/22/2002 15:00:00 through 06/22/2002 17:30:00
06/23/2002 08:30:00
06/23/2002 11:30:00 through 06/23/2002 19:00:00
06/24/2002 17:30:00 through 06/24/2002 18:00:00

06/25/2002 16:30:00
06/25/2002 20:30:00
06/26/2002 00:00:00
06/26/2002 01:30:00 through 06/26/2002 18:30:00
06/26/2002 20:00:00
06/27/2002 19:00:00
06/27/2002 20:00:00 through 06/28/2002 07:00:00
06/28/2002 17:30:00
06/28/2002 20:00:00 through 06/29/2002 00:00:00

e). For the following dates and times, dissolved oxygen, salinity, and pH data
should be considered suspect due to excessive fouling (mud, algae, sea-squirts)
on the probes upon retrieval.

06/11/02 19:00:00 through 06/18/02 09:30:00

CLAMBANK CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

06/18/02 10:30:00 through 06/19/02 09:30:00

JULY 2002

DEBIDUE CREEK

a). For the following dates and times, the sonde was out of the water due to
improper deployment. All data were deleted during these times.

07/10/2002 14:00:00 through 07/10/2002 14:30:00
07/11/2002 03:30:00
07/11/2002 15:00:00
07/12/2002 16:00:00
07/13/2002 16:30:00 through 07/13/2002 17:00:00
07/14/2002 05:30:00 through 07/14/2002 06:00:00
07/14/2002 17:00:00 through 07/14/2002 18:30:00
07/15/2002 05:30:00 through 07/15/2002 07:00:00
07/15/2002 18:30:00 through 07/15/2002 19:00:00
07/16/2002 06:30:00 through 07/16/2002 07:30:00
07/17/2002 07:30:00 through 07/17/2002 08:30:00
07/18/2002 08:30:00
07/19/2002 09:00:00 through 07/19/2002 10:30:00
07/19/2002 23:00:00 through 07/19/2002 23:30:00
07/20/2002 10:00:00 through 07/20/2002 11:30:00
07/21/2002 00:00:00 through 07/21/2002 00:30:00
07/21/2002 11:30:00 through 07/21/2002 12:30:00
07/22/2002 12:30:00
07/23/2002 13:00:00 through 07/23/2002 14:00:00
07/24/2002 02:30:00 through 07/24/2002 03:00:00

07/24/2002 13:30:00 through 07/24/2002 15:00:00
07/25/2002 03:00:00 through 07/25/2002 03:30:00
07/25/2002 14:30:00 through 07/25/2002 15:30:00
07/26/2002 03:30:00 through 07/26/2002 04:30:00
07/27/2002 04:30:00
07/29/2002 05:30:00

b). For the following dates and times, all depth data were deleted due to improper deployment of the sonde.
07/01/2002 00:00:00 through 07/31/2002 12:30:00

c). For the following dates and times, all data should be considered suspect due to improper deployment of the sonde. The sonde was deployed at a non-standard depth (standard=1 foot above the creek bottom) that caused the sonde to be exposed to air during portions of the deployment. For remaining times the sonde was submerged but the data recorded were not at the correct depth. For this reason, all data retained should be considered suspect.
07/01/2002 00:00:00 through 07/31/2002 12:30:00

d). For the following dates and times, turbidity data were negative and/or zero probably due to a slight calibration error. Data were retained.

07/01/2002 00:30:00
07/01/2002 01:30:00
07/01/2002 08:00:00 through 07/01/2002 09:00:00
07/01/2002 13:00:00 through 07/01/2002 14:00:00
07/01/2002 19:30:00 through 07/01/2002 20:30:00
07/02/2002 02:00:00
07/02/2002 08:00:00 through 07/02/2002 08:30:00
07/02/2002 09:30:00
07/02/2002 14:30:00
07/02/2002 21:00:00 through 07/02/2002 21:30:00
07/03/2002 02:00:00 through 07/03/2002 02:30:00
07/03/2002 05:30:00 through 07/03/2002 06:00:00
07/03/2002 08:30:00 through 07/03/2002 09:00:00
07/03/2002 10:00:00
07/03/2002 15:30:00
07/03/2002 21:30:00 through 07/03/2002 22:30:00
07/04/2002 10:00:00
07/04/2002 11:00:00
07/04/2002 16:00:00 through 07/04/2002 16:30:00
07/04/2002 22:30:00 through 07/04/2002 23:30:00
07/05/2002 04:00:00 through 07/05/2002 04:30:00
07/05/2002 16:30:00 through 07/05/2002 17:00:00
07/05/2002 23:00:00 through 07/06/2002 00:00:00
07/06/2002 01:00:00
07/06/2002 02:30:00
07/06/2002 06:00:00

07/06/2002 11:30:00 through 07/06/2002 12:00:00
07/06/2002 17:00:00
07/06/2002 18:00:00
07/06/2002 22:30:00 through 07/07/2002 00:00:00
07/07/2002 01:00:00 through 07/07/2002 01:30:00
07/07/2002 05:00:00 through 07/07/2002 06:00:00
07/07/2002 11:30:00 through 07/07/2002 13:00:00
07/07/2002 18:30:00
07/08/2002 00:00:00 through 07/08/2002 03:30:00
07/08/2002 06:30:00 through 07/08/2002 07:00:00
07/08/2002 09:30:00
07/08/2002 12:30:00 through 07/08/2002 15:00:00
07/08/2002 19:00:00
07/08/2002 20:30:00
07/09/2002 02:30:00 through 07/09/2002 04:30:00
07/09/2002 05:30:00
07/09/2002 06:30:00 through 07/09/2002 07:30:00
07/09/2002 10:00:00
07/09/2002 12:00:00 through 07/09/2002 12:30:00
07/09/2002 20:00:00 through 07/09/2002 20:30:00
07/09/2002 22:30:00
07/09/2002 23:30:00
07/10/2002 01:00:00 through 07/10/2002 02:00:00
07/10/2002 03:30:00 through 07/10/2002 05:30:00
07/10/2002 07:30:00 through 07/10/2002 09:30:00
07/10/2002 10:30:00 through 07/10/2002 13:00:00
07/10/2002 21:00:00
07/11/2002 05:00:00
07/11/2002 09:00:00 through 07/11/2002 09:30:00
07/11/2002 21:30:00
07/14/2002 19:30:00
07/15/2002 00:30:00
07/15/2002 07:30:00 through 07/15/2002 08:00:00
07/15/2002 09:00:00
07/15/2002 12:00:00
07/15/2002 13:00:00 through 07/15/2002 13:30:00
07/15/2002 18:30:00
07/16/2002 09:00:00
07/16/2002 13:30:00
07/17/2002 02:30:00
07/17/2002 07:30:00
07/17/2002 14:30:00
07/27/2002 17:30:00
07/27/2002 23:30:00
07/28/2002 06:00:00
07/28/2002 11:30:00
07/28/2002 18:00:00
07/29/2002 00:00:00
07/29/2002 12:30:00
07/29/2002 18:30:00 through 07/29/2002 19:00:00
07/30/2002 00:30:00
07/30/2002 07:00:00 through 07/30/2002 07:30:00
07/30/2002 19:30:00
07/31/2002 14:00:00 through 07/31/2002 14:30:00

07/31/2002 15:00:00
07/31/2002 19:30:00 through 07/31/2002 20:30:00
07/31/2002 21:30:00 through 07/31/2002 22:30:00

e). For the following dates and times, depth data are incorrect due to the
sonde being deployed improperly. No other probes were affected; therefore,
depth data were retained. However, depth data during this deployment should be
considered suspect.
07/31/2002 13:00:00 through 07/31/2002 23:30:00

OYSTER LANDING

a). For the following dates and times, data are missing due to a malfunction in
the sonde during the deployment. Data were unable to be retrieved.

07/10/02 09:00:00 through 07/31/02 08:00:00

b). For the following date and time, turbidity data were greater than 1000.
This is most likely due to an object passing in front of the optics during
sampling. Data were retained.

07/08/02 06:00:00

THOUSAND ACRE

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

07/01/02 09:00:00 through 07/02/02 09:00:00
07/15/02 12:30:00 through 07/16/02 12:30:00
07/29/02 08:30:00 through 07/30/00 09:30:00

b). For the following dates and times, dissolved oxygen data (% and mg/l) were
deleted due to a tear in the membrane during deployment. Data were deleted
beginning at the point that it was estimated the membrane had most probably
failed.

07/02/02 10:30:00 through 07/15/02 12:00:00

c). For the following dates and times, turbidity data were greater than 1000.
These readings are most likely due to rain/runoff or fouling events. Data were
retained.

07/11/2002 02:30:00
07/11/2002 06:00:00 through 07/11/2002 07:30:00
07/11/2002 09:30:00
07/11/2002 10:30:00 through 07/11/2002 14:30:00
07/13/2002 09:00:00 through 07/13/2002 11:00:00
07/13/2002 12:00:00 through 07/13/2002 13:30:00
07/21/2002 22:00:00 through 07/21/2002 22:30:00
07/22/2002 16:30:00 through 07/22/2002 18:00:00
07/22/2002 19:00:00
07/23/2002 01:00:00
07/23/2002 04:00:00 through 07/23/2002 04:30:00
07/23/2002 08:00:00
07/23/2002 09:00:00
07/23/2002 19:00:00
07/24/2002 14:00:00 through 07/24/2002 17:30:00
07/24/2002 18:30:00
07/25/2002 08:00:00
07/25/2002 10:30:00
07/25/2002 11:30:00 through 07/25/2002 12:00:00
07/25/2002 13:00:00
07/25/2002 14:00:00
07/25/2002 15:00:00
07/25/2002 16:00:00
07/25/2002 17:00:00
07/26/2002 12:00:00
07/26/2002 19:00:00
07/26/2002 20:00:00
07/28/2002 11:00:00
07/28/2002 12:30:00 through 07/28/2002 13:30:00
07/28/2002 16:00:00 through 07/28/2002 16:30:00
07/28/2002 19:30:00 through 07/28/2002 20:00:00
07/28/2002 21:30:00
07/28/2002 22:30:00
07/28/2002 23:30:00
07/29/2002 00:30:00 through 07/29/2002 01:00:00
07/29/2002 03:00:00
07/29/2002 05:00:00
07/29/2002 06:30:00
07/29/2002 07:30:00 through 07/29/2002 08:00:00

d). For the following dates and times, dissolved oxygen data should be considered suspect due to possible tear/bubbles under membrane. I was unable to
find a tear or bubbles upon retrieval, however, DO values are higher than normal
and post-retrieval calibration of DO was low (61.1%) with little fouling.

07/16/02 13:00:00 through 07/29/02 08:00:00

CLAMBANK CREEK

a). For the following dates and times, data are missing due to sonde being out

of the water for maintenance:

07/01/02 09:30:00 through 07/02/02 08:30:00
07/15/02 13:00:00 through 07/16/02 12:00:00
07/29/02 08:30:00 through 07/30/02 09:00:00

AUGUST 2002

DEBIDUE CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

08/15/02 13:00:00 through 08/16/02 13:30:00

b). For the following dates and times, turbidity data were greater than 1000.
These readings are most likely due to an object passing in front of the optics
during sampling. Data were retained.

08/07/02 16:30:00

c). For the following dates and times, turbidity data were negative and/or
zero. While these may be due to a small calibration error, they are within the -
2 NTU specifications of the probe. Data were retained.
08/01/2002 02:00:00
08/01/2002 07:30:00 through 08/01/2002 10:30:00
08/01/2002 11:30:00
08/01/2002 14:30:00 through 08/01/2002 15:30:00
08/01/2002 20:30:00
08/02/2002 02:30:00 through 08/02/2002 03:30:00
08/02/2002 08:30:00 through 08/02/2002 09:30:00
08/02/2002 15:30:00 through 08/02/2002 16:00:00
08/02/2002 21:30:00 through 08/02/2002 22:00:00
08/03/2002 02:30:00 through 08/03/2002 04:00:00
08/03/2002 09:30:00
08/03/2002 23:00:00
08/05/2002 05:30:00
08/05/2002 18:30:00
08/06/2002 01:00:00 through 08/06/2002 01:30:00
08/06/2002 06:30:00
08/06/2002 18:00:00 through 08/06/2002 19:00:00
08/07/2002 07:30:00
08/07/2002 20:00:00
08/08/2002 03:00:00
08/08/2002 08:30:00
08/08/2002 20:30:00 through 08/08/2002 21:30:00
08/08/2002 22:30:00 through 08/08/2002 23:30:00
08/09/2002 09:30:00 through 08/09/2002 10:00:00
08/09/2002 21:30:00

08/09/2002 23:30:00
08/10/2002 10:00:00
08/10/2002 20:30:00
08/10/2002 23:30:00
08/11/2002 00:30:00 through 08/11/2002 01:00:00
08/11/2002 11:00:00
08/11/2002 12:00:00
08/11/2002 22:30:00 through 08/12/2002 00:00:00
08/12/2002 01:00:00 through 08/12/2002 01:30:00
08/12/2002 06:00:00 through 08/12/2002 06:30:00
08/12/2002 12:00:00
08/12/2002 13:30:00
08/12/2002 22:30:00
08/12/2002 23:30:00 through 08/13/2002 01:00:00
08/13/2002 06:30:00
08/13/2002 07:30:00
08/13/2002 11:30:00 through 08/13/2002 12:30:00
08/13/2002 14:00:00
08/14/2002 00:30:00 through 08/14/2002 01:00:00
08/14/2002 02:00:00
08/14/2002 03:00:00
08/14/2002 07:30:00
08/14/2002 08:30:00
08/14/2002 15:00:00
08/15/2002 02:00:00 through 08/15/2002 02:30:00
08/15/2002 08:00:00 through 08/15/2002 09:00:00
08/16/2002 15:30:00 through 08/16/2002 17:00:00
08/17/2002 04:00:00 through 08/17/2002 05:00:00
08/17/2002 09:30:00
08/17/2002 17:30:00
08/17/2002 23:00:00
08/18/2002 04:30:00 through 08/18/2002 05:00:00
08/18/2002 09:30:00 through 08/18/2002 11:00:00
08/18/2002 17:30:00 through 08/18/2002 18:30:00
08/19/2002 00:00:00 through 08/19/2002 00:30:00
08/19/2002 05:30:00 through 08/19/2002 06:00:00
08/19/2002 11:30:00
08/19/2002 19:00:00
08/20/2002 01:00:00 through 08/20/2002 02:00:00
08/20/2002 07:00:00
08/20/2002 12:30:00 through 08/20/2002 13:00:00
08/21/2002 01:00:00 through 08/21/2002 02:00:00
08/21/2002 07:30:00 through 08/21/2002 08:00:00
08/21/2002 13:00:00 through 08/21/2002 13:30:00
08/21/2002 20:00:00 through 08/21/2002 22:30:00
08/22/2002 02:00:00
08/22/2002 08:00:00 through 08/22/2002 09:30:00
08/22/2002 14:00:00 through 08/22/2002 14:30:00
08/22/2002 21:00:00 through 08/22/2002 23:00:00
08/23/2002 02:30:00
08/23/2002 03:30:00
08/23/2002 09:00:00 through 08/23/2002 09:30:00
08/24/2002 02:30:00 through 08/24/2002 04:00:00
08/24/2002 10:00:00 through 08/24/2002 10:30:00

08/24/2002 15:30:00
08/25/2002 02:30:00 through 08/25/2002 04:00:00
08/25/2002 05:00:00
08/25/2002 09:30:00 through 08/25/2002 11:00:00
08/25/2002 16:00:00
08/25/2002 21:30:00 through 08/25/2002 22:30:00
08/25/2002 23:30:00
08/26/2002 04:30:00
08/26/2002 05:30:00
08/26/2002 09:30:00
08/26/2002 11:30:00
08/26/2002 13:00:00
08/26/2002 16:30:00
08/26/2002 17:30:00
08/26/2002 22:30:00 through 08/26/2002 23:00:00
08/27/2002 00:00:00 through 08/27/2002 01:30:00
08/27/2002 04:30:00 through 08/27/2002 06:00:00
08/27/2002 11:00:00 through 08/27/2002 11:30:00
08/27/2002 12:30:00
08/27/2002 13:30:00
08/27/2002 22:30:00 through 08/27/2002 23:00:00
08/28/2002 00:00:00 through 08/28/2002 01:30:00
08/28/2002 03:30:00
08/29/2002 00:30:00
08/29/2002 12:30:00

d). For the following dates and times, depth data are incorrect due to the
sonde being deployed improperly. No other probes were affected; therefore,
depth data were retained. However, depth data during this deployment should be
considered suspect.

08/01/02 00:00:00 through 08/15/02 12:30:00

OYSTER LANDING

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

08/15/02 08:30:00 through 08/16/02 08:00:00
08/28/02 11:30:00 through 08/29/02 08:00:00

b). For the following dates and times, turbidity data were greater than 1000.
These readings are most likely due to an object passing in front of the optics
during sampling. Data were retained.

08/08/02 16:30:00
08/28/02 05:30:00

c). For the following dates and times, turbidity data were negative and/or
zero.
While these may be due to a small calibration error, they are within the -2 NTU
specifications of the probe. Data were retained.
08/21/2002 07:30:00
08/22/2002 20:30:00
08/23/2002 08:30:00
08/23/2002 21:30:00
08/24/2002 08:30:00
08/24/2002 09:30:00
08/24/2002 21:00:00 through 08/24/2002 22:00:00
08/25/2002 08:30:00
08/25/2002 09:30:00 through 08/25/2002 11:00:00
08/26/2002 11:00:00

THOUSAND ACRE

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

08/12/02 09:00:00 through 08/13/02 09:30:00
08/26/02 09:30:00 through 08/27/02 09:30:00

b). For the following date and time, turbidity data were greater than 1000.
This reading was most likely due to a fouling event due to the concurrent drop
in dissolved oxygen and pH. Data were retained.

08/21/02 02:00:00

c). For the following dates and times, dissolved oxygen (% and mg/l) data
dropped to a low and did not show typical signs of tidal fluctuation. This is
most likely due to a fouling event during this period that prevented proper
water flow over the probes. There was evidence of a hypoxic event during the
deployment due to heavy sulfide staining on the sonde and chum bag at retrieval.
Data were retained, but should be considered suspect.

08/18/02 18:00:00 through 08/25/02 01:30:00

d). For the following dates and times, pH data dropped to a low and did not
show typical signs of tidal fluctuation. This is most likely due to a fouling
event during this period that prevented proper water flow over the probes.

There was evidence of a hypoxic event during the deployment due to heavy sulfide
staining on the sonde and chum bag at retrieval. Data were retained, but should
be considered suspect.

08/21/02 00:00:00 through 08/23/02 06:00:00

CLAMBANK CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

08/12/02 09:30:00 through 08/13/02 10:00:00
08/26/02 10:00:00 through 08/27/02 09:00:00

b). For the following date and time, turbidity data were greater than 1000.
These readings are most likely due to an object passing in front of the optics
during sampling. Data were retained.

08/31/02 22:00:00

c). For the following dates and times, turbidity data were zero. While these
may be due to a small calibration error, they are within the -2 NTU
specifications of the probe. Data were retained.
08/16/02 21:30:00

SEPTEMBER 2002

DEBIDUE CREEK
No missing or anomalous data to report for this month.

OYSTER LANDING

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

09/11/02 08:00:00 through 09/12/02 09:30:00
09/27/02 11:00:00 through 09/27/02 11:30:00

THOUSAND ACRE

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

09/09/02 09:00:00 through 09/10/02 09:30:00
09/24/02 08:00:00 through 09/25/02 09:00:00

CLAMBANK CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

09/09/02 09:30:00 through 09/10/02 09:00:00
09/25/02 10:00:00 through 09/26/02 09:00:00

b). For the following dates and times, turbidity data were negative and/or
zero. While these may be due to a small calibration error, they are within the -
2 NTU specifications of the probe. Data were retained.
09/01/02 09:30:00

OCTOBER 2002

DEBIDUE CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

10/28/02 12:30:00 through 10/29/02 12:30:00

b). For the following date and time, turbidity data were greater than 1000.
These readings are most likely due to an object passing in front of the optics
during sampling. Data were retained.

10/13/02 12:00:00

d). For the following dates and times, depth data are incorrect due to the
sonde being deployed improperly. No other probes were affected; therefore,
depth data were retained. However, depth data during this period should be
considered suspect.

10/10/02 12:00:00 through 10/28/02 12:00:00

OYSTER LANDING

a). For the following dates and times, the conductivity sensor failed.
Therefore salinity, specific conductivity, DO mg/L, and depth were deleted.
10/11/02 12:30:00 through 10/22/02 08:00:00

THOUSAND ACRE

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

10/09/02 09:00:00 through 10/10/02 08:30:00
10/30/02 09:30:00 through 10/31/02 14:00:00

CLAMBANK CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

10/30/02 10:00:00 through 10/31/02 09:00:00

NOVEMBER 2002

DEBIDUE CREEK

a). For the following date and time, turbidity data were greater than 1000.
These readings are most likely due to an object passing in front of the optics
during sampling. Data were retained.

11/11/02 05:00:00

OYSTER LANDING

a). For the following dates and times the datalogger recorded negative/zero
depth data. However, specific conductivity and salinity sensor readings suggest
that the datalogger was not out of the water, so suspect that negative values
indicate shallow depth and are simply due to a slight calibration error. Data
were retained.

11/06/2002 16:30:00
11/30/2002 22:30:00 through 11/30/2002 23:30:00

THOUSAND ACRE

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

11/20/02 13:30:00 through 11/21/02 14:00:00

b) For the following dates and times, there was a dramatic drop in dissolved
oxygen (% and mg/L) possibly due to a fouling event following a heavy rainfall

on 11/12/2002. Data were retained but should be considered suspect.
11/12/2002 20:00:00 through 11/15/2002 05:30:00

CLAMBANK CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

11/20/02 14:30:00 through 11/21/02 13:00:00

b). For the following dates and times the datalogger recorded negative/zero
depth data. However, specific conductivity and salinity sensor readings suggest
that the datalogger was not out of the water, so suspect that negative values
indicate shallow depth and are simply due to a slight calibration error. Data
were retained.

11/30/02 22:30:00 through 11/30/02 23:30:00

c). For the following dates and times, turbidity data were negative and/or
zero.
While these may be due to a small calibration error, they are within the -2 NTU
specifications of the probe. Data were retained.

11/24/2002 11:00:00
11/24/2002 21:00:00
11/24/2002 22:30:00 through 11/24/2002 23:00:00
11/25/2002 12:00:00
11/26/2002 00:00:00
11/29/2002 04:00:00

DECEMBER 2002

DEBIDUE CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

12/19/02 09:30:00 through 12/20/02 10:00:00

b). For the following dates and times, turbidity data are missing due to the
turbidity sensor being out for repair:

12/20/02 10:30:00 through 12/31/02 23:30:00

OYSTER LANDING

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

12/19/02 09:30:00 through 12/20/02 10:00:00

b). For the following dates and times, turbidity data are missing due to the
turbidity sensor being out for repair:

12/20/02 10:30:00 through 12/31/02 23:30:00

c). For the following date and time the datalogger recorded negative/zero depth
data. However, specific conductivity and salinity sensor readings suggest that
the datalogger was not out of the water, so suspect that negative values
indicate shallow depth and are simply due to a slight calibration error. Data
were retained.

12/01/02 00:00:00

THOUSAND ACRE

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

12/09/02 09:30:00 through 12/10/02 10:00:00

b). For the following date and time, turbidity data were greater than 1000.
These readings are most likely due to an object passing in front of the optics
during sampling. Data were retained.

12/17/02 04:30:00

CLAMBANK CREEK

a). For the following dates and times, data are missing due to sonde being out
of the water for maintenance:

12/09/02 10:00:00 through 12/10/02 09:30:00

b). For the following dates and times, turbidity data are missing due to the
turbidity sensor being out for repair:

12/10/02 10:00:00 through 12/31/02 23:30:00

c). For the following dates and times the datalogger recorded negative/zero depth data. However, specific conductivity and salinity sensor readings suggest that the datalogger was not out of the water, so suspect that negative values indicate shallow depth and are simply due to a slight calibration error. Data were retained.

12/01/2002 00:00:00
12/03/2002 01:00:00
12/20/2002 15:00:00 through 12/20/2002 15:30:00
12/21/2002 01:30:00 through 12/21/2002 03:00:00
12/25/2002 18:00:00 through 12/25/2002 18:30:00

d). For the following dates and times, turbidity data were negative and/or zero. While these may be due to a small calibration error, they are within the -2 NTU specifications of the probe. Data were retained.

12/02/2002 06:30:00
12/02/2002 19:00:00
12/05/2002 09:00:00
12/05/2002 09:30:00
12/05/2002 14:30:00 through 12/05/2002 17:30:00
12/05/2002 21:30:00
12/06/2002 01:30:00 through 12/06/2002 04:30:00
12/06/2002 09:30:00 through 12/06/2002 11:30:00
12/06/2002 13:30:00 through 12/06/2002 19:30:00
12/06/2002 22:00:00 through 12/07/2002 01:30:00
12/07/2002 02:30:00 through 12/07/2002 04:00:00
12/07/2002 05:30:00 through 12/07/2002 07:30:00
12/07/2002 10:30:00 through 12/07/2002 11:00:00
12/07/2002 12:00:00 through 12/07/2002 12:30:00
12/07/2002 13:30:00 through 12/08/2002 09:00:00
12/08/2002 10:30:00 through 12/09/2002 01:00:00
12/09/2002 02:30:00 through 12/09/2002 03:00:00
12/09/2002 04:00:00 through 12/09/2002 05:30:00
12/09/2002 07:00:00 through 12/09/2002 09:30:00

12. Missing Data

Missing data are denoted by a period in the data set. Data are missing due to equipment failure where no probes were deployed, maintenance/calibration of equipment, elimination of obvious outliers or elimination of data due to calibration problems (both pre and post). For more details on deleted data, see the Data Anomalies Section. To find out more details about missing data,

contact the Research Coordinator at the site submitting the data.

13. Post Deployment Information

End of Deployment Post-calibration Readings in Standard Solutions:
NA = no data available for that particular standard

Site Date Cond(mS)(Std:10 or 0mS) Salinity(ppt)(Std:0ppt) DO(air sat)(Std:
100%) pH(Std:7) Depth(Std:0) Turb(Std:0)

DC

01/17/02	0.038	0.02	100.2	7.05	0.091	0.2
02/01/02	0.022	0.01	100.3	7.03	-0.070	0.4
02/14/02	0.019	0.01	101.3	7.12	0.000	-2.0
03/05/02	0.013	0.00	78.3	7.01	0.144	-0.2
03/19/02	0.032	0.01	95.9	6.92	0.001	-0.4
04/02/02	0.020	0.01	101.4	7.10	-0.044	-1.0
04/17/02	0.045	0.02	93.7	7.04	0.038	-2.3
04/30/02	0.012	0.00	91.6	7.01	-0.091	0.0
05/15/02	0.030	0.01	47.9	7.14	0.148	-0.8
05/28/02	0.015	0.01	62.7	7.21	0.038	-0.5
06/17/02	0.093	0.04	5.9	7.17	-0.147	2.3
06/28/02	0.013	0.00	65.0	7.22	0.056	0.7
07/12/02	0.108	0.05	99.3	7.02	-0.083	0.0
07/31/02	0.066	0.03	64.9	7.06	-0.094	-1.1
08/15/02	0.108	0.05	60.8	7.13	0.074	-5.6
08/29/02	0.087	0.04	96.0	7.10	-0.090	-7.7
09/12/02	0.064	0.03	92.4	7.06	-0.009	0.3
09/26/02	0.067	0.03	96.9	7.04	0.046	0.3
10/10/02	0.034	0.01	100.3	7.03	0.035	0.8
10/28/02	0.021	0.01	92.8	6.97	-0.073	0.1
11/21/02	0.036	0.02	88.3	7.05	-0.049	0.9
12/19/02	0.019	0.01	95.1	7.00	0.000	0.8
01/07/03	0.026	0.01	83.5	7.13	0.034	N/A

OL

01/17/02	0.034	0.01	97.5	7.04	0.205	0.2
01/29/02	0.052	0.02	94.8	7.04	0.013	0.2
02/12/02	0.074	0.03	98.9	7.07	-0.249	0.2
02/27/02	0.340	0.01	99.5	7.08	-0.131	0.1
03/19/02	0.053	0.02	95.1	7.00	-0.114	-0.2
04/01/02	0.036	0.02	102.1	7.03	-0.245	0.1
04/17/02	0.041	0.02	104.9	7.06	0.254	0.0
04/29/02	0.020	0.01	95.5	7.07	-0.110	0.1
05/13/02	0.023	0.01	95.7	7.11	0.078	0.0
05/27/02	0.027	0.01	89.9	7.09	0.138	-0.2
06/24/02	0.080	0.04	94.1	7.01	0.005	-0.1
07/10/02	0.015	0.01	80.3	7.06	-0.027	0.2
08/15/02	0.015	0.01	95.8	7.06	0.067	0.2
08/28/02	0.027	0.01	86.7	7.06	-0.047	-1.5
09/11/02	0.012	0.00	92.7	7.10	-0.072	0.6
09/27/02	0.014	0.01	102.5	7.05	0.006	1.9

	10/08/02	0.067	0.03	92.3	7.15	0.075	-0.3
	10/22/02	N/A	N/A	104.5	7.04	-0.062	-0.5
	11/19/02	0.018	0.01	82.9	6.95	0.047	0.0
	12/19/02	0.002	0.00	111.7	7.04	-0.079	1.7
	01/07/03	0.061	0.03	91.7	7.20	0.033	N/A
TA							
	01/16/02	0.010	0.00	97.4	7.01	0.096	0.0
	01/30/02	0.010	0.00	95.0	6.92	0.068	3.9
	02/13/02	0.010	0.00	98.3	7.20	-0.041	0.8
	02/27/02	0.020	0.01	97.1	7.36	-0.040	1.3
	03/20/02	0.000	0.00	113.3	6.94	-0.035	-0.3
	04/03/02	0.020	0.00	83.1	6.94	0.034	0.1
	04/18/02	0.010	0.00	99.1	6.94	0.080	0.6
	05/01/02	0.010	0.00	159.1	6.96	-0.076	0.3
	05/14/02	0.010	0.00	122.0	7.59	-0.044	1.2
	05/29/02	0.020	0.00	91.7	7.17	0.017	1.0
	06/18/02	0.000	0.00	99.5	7.02	-0.010	0.1
	07/01/02	0.000	0.00	93.6	7.26	-0.018	1.6
	07/15/02	0.010	0.00	64.0	6.81	-0.057	0.9
	07/29/02	0.050	0.02	61.1	7.06	-0.030	-1.2
	08/12/02	0.000	0.00	89.5	7.10	0.086	0.0
	08/26/02	0.020	0.01	94.8	6.86	-0.189	0.0
	09/09/02	0.010	0.00	84.8	6.91	-0.005	-0.3
	09/24/02	0.020	0.00	91.0	7.15	0.037	-0.7
	10/09/02	0.030	0.01	98.4	6.95	-0.018	0.4
	10/30/02	0.020	0.00	93.5	7.07	-0.129	0.0
	11/20/02	0.050	0.02	92.1	7.08	0.108	-0.9
	12/09/02	0.040	0.01	95.3	7.53	0.158	1.7
	01/09/03	0.020	0.01	99.3	6.82	-0.261	0.1
CB							
	01/16/02	0.015	0.01	-99.9	6.88	0.120	-2.2
	01/30/02	0.027	0.01	100.0	7.05	0.020	-0.3
	02/13/02	0.017	0.01	101.7	7.11	-0.420	-0.2
	02/27/02	0.018	0.01	100.9	7.09	-0.660	0.2
	03/20/02	0.016	0.01	87.8	7.03	-0.097	-1.7
	04/03/02	0.011	0.00	97.9	7.12	0.000	-2.4
	04/18/02	0.015	0.01	92.7	7.06	0.082	-0.8
	05/01/02	0.010	0.00	98.5	7.03	-0.130	-4.6
	05/14/02	0.032	0.01	102.1	7.06	0.036	0.6
	05/28/02	0.034	0.01	95.3	7.00	0.043	0.8
	06/18/02	0.013	0.00	66.7	7.13	0.014	1.3
	07/01/02	0.016	0.01	95.1	7.04	0.032	0.5
	07/15/02	0.160	0.01	72.5	6.94	-0.034	0.4
	07/29/02	0.022	0.01	99.0	6.96	0.011	-0.3
	08/12/02	0.030	0.01	95.9	7.03	0.013	-0.3
	08/26/02	0.009	0.00	87.9	7.03	-0.064	0.1
	09/09/02	0.023	0.01	92.5	7.14	0.034	-0.7
	09/25/02	0.053	0.02	101.1	7.10	0.070	-0.1
	10/09/02	0.026	0.01	75.9	6.96	0.045	1.1
	10/30/02	0.061	0.03	97.7	7.07	-0.013	-0.5
	11/20/02	0.067	0.03	102.5	7.08	0.124	-0.9
	12/09/02	0.019	0.01	100.4	7.01	0.053	4.4

01/09/03 0.010 0.00 97.4 7.05 -0.266 N/A

14. Other Remarks:

On 07/01/2021 this dataset was updated to include embedded QAQC flags for anomalous/suspect data. System-wide monitoring data beginning in 2007 were processed to allow for QAQC flags and codes to be embedded in the data files rather than detailed in the metadata alone (as in the anomalous/suspect, deleted, and missing data sections above). Prior to 2006, rejected data were deleted from the dataset so they are unavailable to be used at all, but suspect data were only noted in the metadata document. Suspect data flags <1> were embedded retroactively in order to allow suspect data to be easily identified and filtered from the dataset if desired for analysis and reporting purposes. No other flags or codes were embedded in the dataset and users should still refer to the detailed explanations above for more information.

01/29/02 Began wrapping bottom of sonde in a wet, white towel upon and transporting in a bucket with small amount of water upon retrieval, during post calibration of dissolved oxygen, and prior to deployment. Previous protocol involved using YSI-supplied calibration cup.

02/28/02 Began using new YSI-approved turbidity standard to calibrate all instruments.

03/04/02 Changed dissolved oxygen probe warm-up period to 60 seconds.

DEBIDUE CREEK

1/17/02 The dissolved oxygen probe on alternate Debidue Creek sonde (Unit A) was removed to replace the faulty dissolved oxygen probe on Clambank sonde (Unit B).

01/23/02 22:00:00 through 01/29/02 13:30:00 Files were adjusted as the time stamp was off by 29 seconds.

1/31/02 A new dissolved oxygen probe was installed on alternate Debidue Creek sonde (Unit A).

3/26/02 The conductivity probe was replaced on alternate Debidue Creek sonde (Unit A) due to probe malfunction.

4/17/02 The Debidue Creek sonde was not pushed down all the way to the bottom of the sonde tube when deployed at 10:25 EST. The sonde was pushed down to the stop bolt at 12:00 EST on 4/17/02. Depth data could have been affected during this period.

5/06/02 The turbidity probe was replaced on the Debidue Creek sonde (Unit J) with a new (model 6136) turbidity probe.

5/15/02 The turbidity probe was replaced on the alternate Debidue Creek sonde (Unit A) with a new (model 6136) turbidity probe. Sonde software was updated at this time.

5/25/02 The PVC sonde tube was replaced at Debidue Creek. Heavy fouling may have affected some data prior to this date.

6/24/02 Corrected 0515dc-j.dat raw file due to erroneous entry of 5/14/02 14:44:22.

6/28/02 11:00:00 through 6/30/02 23:30:00 The sonde did not settle to the bottom of the PVC tube during deployment which gave inaccurate depth data during the deployment. No other data were affected, so only depth data were deleted.

08/16/02 Due to a suspected problem with the APS turbidity standard, I was unable to calibrate the turbidity on Unit A for this deployment (08/16/02 through 08/29/02).

08/01/02 Depth data for 08/01/02 were incorrect due to the sonde being improperly deployed in the sonde tube. This was corrected at 12:45:00 08/01/02, so all depth data after that period are correct.

08/02 For the month of August, rain effects are obvious in salinity and conductivity data at Debidue Creek.

11/02 There was an obvious difference in pH readings between deployments of Unit

G (11/01-11/19) and Unit T (11/19-11/30). pH MV readings were close to out-of-
range during calibration before the 11/01 deployment. This may account for the
higher readings by that sensor as compared to those of Unit T.

11/02 For the month of November, rain effects are obvious in salinity and
conductivity data at Debidue Creek.

12/02 For the month of December, rain effects are obvious in salinity and conductivity data at Debidue Creek.

OYSTER LANDING

5/20/02 The PVC sonde tube was replaced at Oyster Landing. Heavy fouling
may have affected some data prior to this date.

5/04/02 Effects of a rain event on this day were evident in salinity, conductivity and water temperature data.

5/18/02 Effects of a rain event on this day were evident in salinity, conductivity, water temperature and possibly dissolved oxygen (% and mg/l) data.

07/31/02 08:00:00 File was adjusted as the time stamp was off by 4 minutes 47
seconds.

07/10/02 through 07/31/02 The circuit board failed in the sonde and all data
were lost during this deployment.

07/31/02 Due to the malfunction of the Unit G, the new Extended Deployment
Sonde (Unit T) (6136 turbidity probe) was deployed at Oyster Landing from 07/31/02 through 08/15/02.

08/16/02 Due to a calibration error with the EDS sonde (Unit T), Unit J (with
6136 turbidity probe) was deployed at Oyster Landing from 08/16/02 through
08/28/02.

08/02 For the month of August, rain effects are obvious in salinity and conductivity data at Oyster Landing.

08/16/02 Due to a suspected problem with the APS turbidity standard, I was
unable to calibrate the turbidity on Unit J for this deployment (08/16/02 through 08/28/02).

09/02 For the month of September, rain effects are obvious in salinity and
conductivity data at Oyster Landing.

10/02 An internal software problem (Unit T) caused the conductivity probe to
fail during the October deployment. Unit G was deployed in Unit T's place while
Unit T was sent in for repair.

12/02 For the month of December, rain effects are obvious in salinity and conductivity data at Oyster Landing.

THOUSAND ACRE

01/01/02 00:00:00 through 01/02/02 09:30:00 Files were adjusted as the time
stamp was off by 57 seconds.

01/03/02 11:30:00 through 01/16/02 11:00:00 Files were adjusted as the time
stamp was off by 14 minutes 12 seconds.

01/31/02 10:00:00 through 02/13/02 10:00:00 Files were adjusted as the time
stamp was off by 2 minutes 5 seconds.

5/01/02 The conductivity/dissolved oxygen probe was replaced on the Thousand
Acre sonde (Unit H) due to a probe malfunction.

05/15/02 - 05/29/02 No cloth chum bag was placed over the Thousand Acre sonde
guard. Turbidity readings could have been affected during this period.

07/01/02 - During calibration, the conductivity readings jumped back and forth
between 9.1 and 4.5 in a 10 siemens standard. The instrument was "un-
calibrated" but the reading still fluctuated between these two values during
calibration. Calibration was accepted without an error message and set
calibration to 10. There would appear to be no adverse effect on
salinity/conductivity data during the deployment.

08/13/02 Beginning at this deployment, the Thousand Acre sonde was been moved
approximately 6 feet from its prior location. The new location is farther out
in the middle of the creek (attached to the wooden bridge). This location was
chosen to try to get better flow over the sonde probes and prevent excessive
silt/mud deposition that was occurring at the old location. Two sondes were run

in tandem (old and new location) prior to changing sites, and it was found that there was no discernible difference in water quality measurements between sites except for depth. The new site is approximately 3 foot deeper than the old site.

08/18/02 - 08/23/02 It is suspected that a fouling event during this period prevented proper movement of water over the probes during sampling which might have had effects on the data. All data should be considered suspect during this period.

08/02 For the month of August, rain effects were obvious in salinity and conductivity data at Thousand Acre Marsh.

08/27/02 Due to a suspected problem with the APS turbidity standard, I was unable to calibrate the turbidity on Unit H for this deployment (08/27/02 through 09/09/02).

11/02 For the month of November, rain effects were obvious in salinity and conductivity data at Thousand Acre Marsh.

CLAMBANK CREEK

1/16/02 The turbidity probe was replaced on the Clambank sonde (Unit B) due to a probe malfunction.

4/18/02 The turbidity probe was replaced on the Clambank sonde (Unit B) due to a probe malfunction.

5/23/02 The PVC sonde tube was replaced at Clambank Creek. Heavy fouling may have affected some data prior to this date.

5/15/02 - 5/28/02 No cloth chum bag was placed over the Clambank Creek sonde guard. Turbidity readings could have been affected during this period.

07/02 During the month of July, rain effects are obvious in salinity and conductivity data at Clambank Creek.

08/02 During the month of August, rain effects are obvious in salinity and conductivity data at Clambank Creek.

08/27/02 Due to a suspected problem with the APS turbidity standard, I was
unable to calibrate the turbidity on Unit B for this deployment (08/27/02 through 09/09/02).

09/02 For the month of September, rain effects are obvious in salinity and
conductivity data at Clambank Creek.

11/02 For the month of November, precipitation effects are obvious in salinity
and conductivity data at Clambank Creek.

12/02 For the month of December, precipitation effects are obvious in salinity
and conductivity data at Clambank Creek.