

Tijuana River Estuary (TJR) NERR Water Quality Metadata
January to December 2001
Last Revised November 11, 2002

I. Data Set and Research Descriptors

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2. Entry Verification:

The data are uploaded directly from the YSI model 6000 or 6600 dataloggers to the YSI Ecowatch for windows software into a file appended with the suffix ".dat". The data are also downloaded directly from the datalogger into a spreadsheet importable file appended with the suffix ".csv". The data are then reviewed for major problems (i.e. logger out of water, probe malfunction, battery failure, etc.) using the YSI Ecowatch for windows plotting software. The resulting plot is printed out and saved in a folder named "datalogger deployment log". The .csv file is imported into Excel 2000 for Windows, where it is edited and formatted.

The tails of each sampling period are deleted and any suspect data are identified with the aid of Excel CDMO 5.0 macros. Suspect data are evaluated and dealt with according to CDMO Operations Manual (ver.4.0) guidelines. The parameter columns are checked for proper order and correct heading labels and formatted to the correct decimal places using the "column reformat" macro supplied by the CDMO. Missing data fields are inserted into the Excel spreadsheet and are denoted by periods (.). Reasons for any missing or

anomalous data are entered directly into the data file and the edited file is saved as a two-week excel file. When an entire month of two-week edited data files have been collected, the files are edited and combined into a 1 month excel file using the excel import.xls macro. All editing and missing data documentation are also recorded in an excel file named "missing data log". The information in the "missing data log" is transferred to the metadata form. The edited and raw files are archived on a Sun Sparc 20 workstation and backed up to tape weekly. Data and metadata files are uploaded via ftp to the CDMO. The person responsible for the data management is Michelle Cordrey.

3. Research Objectives:

The Tijuana Estuarine Research Reserve is impacted heavily by both periodic raw sewage outflows and urban development. Only about a quarter of the reserve's 2,531 acres are tidally influenced, with few channels deep enough for datalogger deployment. Two stations were originally set up: a treatment station was set up close to the mouth on the Southern end of the Oneonta Slough, while a control station was set up on the northern end of Oneonta Slough. The treatment station location was chosen because it would be the site most affected by sewage outflow. Deployment at the treatment station, however, was continually halted by both shifting sediment and massive wracks of kelp (*Macrocystis pyrifera*), which would often bury the deployment set-up on incoming tides. After a number of different deployment equipment designs were implemented, with no success, logging at this site was terminated.

We currently have two YSI datalogger stations installed at the reserve. The original control station in the northern end of Oneonta Slough is still in place. A second datalogger station is located at the inlet to the Model Marsh, a recently-constructed 20-acre restoration site in the southern arm of the estuary. The Model Marsh was opened to tidal flushing in February 2000. Installation of the restoration site will allow us to make comparisons between constructed and natural site hydrology over time.

4. Research Methods (Dataloggers):

At all the sampling stations until October 2000, all deployment stations were

identical. A 4 inch diameter PVC pipe was strapped to two 6 foot lengths of 4in diameter aluminum pipe driven into the sediment in the center of the channel until refusal.

The bottom of the pvc pipe is raised 1 foot off of the channel bottom and is open. Multiple 1.5 inch holes have been drilled around the bottom of the tube to permit unrestricted water flow to the sensors. During deployment the datalogger units are then placed into and rest on a bolt fixed across the bottom of the tubes.

Beginning on October 16, 2000 at the Oneonta Slough station and on October 25, 2000 at the Model Marsh station a 5 inch diameter PVC pipe was strapped to a 4 inch diameter aluminum pipe driven into the sediment in the center of the channel until refusal. A "snorkel" tube is also strapped to the 4 inch diameter aluminum pipe to allow for the shallow level vented sensor on the YSI model 6600 sondes to compensate for barometric changes in the atmosphere. The sampling period is two weeks, with measurements taken every 30 minutes. Measurements for specific conductivity, salinity, dissolved oxygen (percent saturation), dissolved oxygen (mg/l), temperature, turbidity and water level are recorded. At the end of each two week period, the YSI data logger units are brought back to the laboratory for downloading, cleaning and recalibration and are usually redeployed in the field within 24 to 48 hours. These procedures are carried out according to the methods described in the YSI Operations Manual (see sections 3 and 7). Calibration standards for specific conductivity are purchased from YSI and pH and turbidity are purchased pre-made from VWR scientific. The QA/QC procedures for the collected data are followed as given in the CDMO Operations Manual version 4.0.

Logging began on October 25, 2000 at the Model Marsh station.
Logging began in February 1996 at the Oneonta Slough station.

5. Site location and character:

General site Characteristics (TJE)

- a) Tidal exchange (extremes): approx. -2 +7 MLLW,
- b) Salinity: 4 ppt (extreme rain events) to 38 ppt

d) Latitude and longitude: 32 deg. 34 min. N, 117 deg. 07 min. W
c) Potential impacts: storm drain runoff from military airfield and adjacent residential areas, occasional sewage spills (10-15 MGD) into the Tijuana River from Mexico.
The area surrounding the estuary is heavily developed by residential housing as is the watershed which drains into the estuary. Approximately 2/3 of the watershed is in Mexico.
The North Eastern section of the reserve is bordered by a military helicopter training base. Vegetation in the area is dominated by common pickleweed (*Spartina virginica*) and Pacific cordgrass (*Spartina foliosa*).

Specific Site characteristics: Oneonta Slough (OS)

a) Orientation of site: The Datalogger station is located on the upper portion of Oneonta Slough. The channel runs North to South and is located on the northwestern edge of the reserve. Latitude is 32 deg 34 min 04.8 sec N, longitude is 117 deg 07 min 52.3 sec W.
b) The elevation of the channel bottom directly below the datalogger is approx. 0.55m below Mean Sea Level.
c) Channel width is approx. 20 meters. Datalogger site is located 1km from mouth
d) Bottom type: sand and sediment
e) Area adjacent to west side of channel is developed. There is a 50-meter buffer of natural vegetation between development and the channel. Area adjacent to east side of channel is relatively natural.
f) Direct impacts are estimated to be runoff from streets into channel during rain events.

Specific Site Characteristics: Model Marsh (MM)

a) Orientation of site: The datalogger station is located in the middle of a natural channel which runs north to south. The channel is approximately 20 meters north of a newly constructed 20 acre mudflat restoration area in the southern section of the reserve. The latitude of the site is 32 deg 32 min 52.05 sec N, the longitude is 117 deg 07 min 22.9 sec W
b) The elevation of the channel bottom: -.39 NGVD
c) Channel width: 5 meters
d) Bottom type: Mostly mud with some sand

6. Data Collection period:

Unless otherwise noted YSI model 6600upg dataloggers were used to collect data.

Oneonta Slough

Began		Ended	
12/19/00	14:30	01/15/01	08:30
01/17/01	15:30	01/31/01	15:30
02/01/01	15:00	02/15/01	16:00
02/20/01	17:30	03/09/01	15:30
03/12/01	16:00	03/30/01	11:30
04/03/01	18:00	04/18/01	15:30
04/19/01	17:00	05/07/01	14:30
05/09/01	17:00	05/30/01	11:30
06/05/01	13:30	06/25/01	12:30
06/27/01	14:00	07/11/01	11:00
07/13/01	13:30	07/26/01	12:00
07/30/01	13:30	08/09/01	09:30
08/10/01	11:00	08/23/01	09:00
08/24/01	10:30	09/06/01	15:30
09/11/01	10:00	10/02/01	13:30
10/03/01	17:30	10/15/01	12:30
10/19/01	17:00	11/01/01	15:00
11/07/01	15:00	11/27/01	13:30
11/30/01	16:00	12/18/01	13:30
12/21/01	17:00	01/09/02	14:00

Model Marsh

Began		Ended	
Date	Time	Date	Time
12/19/00	13:30	01/15/01	09:00
01/17/01	16:30	01/31/01	13:00
02/01/01	14:00	02/15/01	15:30
04/03/01	16:30	04/18/01	14:30
04/19/01	16:00	05/07/01	13:30
05/09/01	15:30	05/30/01	12:30
06/05/01	23:08	06/25/01	02:42 ** bad file
06/27/01	12:30	07/11/01	11:30
07/13/01	14:30	07/26/01	11:00
07/30/01	14:30	08/09/01	10:30
08/10/01	12:00	08/23/01	10:00
08/24/01	11:30	09/06/01	15:00
09/11/01	11:30	10/02/01	14:30
10/03/01	14:30	10/15/01	13:30
10/19/01	15:30	11/01/01	14:30
11/06/01	17:30	11/27/01	14:00
12/01/01	16:00	12/18/01	14:00
12/21/01	15:30	01/09/02	15:00

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 and 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 or 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 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:

Sharook Madon (PERL) is using temperature data from the dataloggers in a model to evaluate the value of marsh surface access in killifish growth. The Model Marsh is the ongoing site of research being conducted by PERL which focuses on methods for increasing the success of saltmarsh revegetation projects.

II. Physical Structure Descriptors

9. Variable sequence, column format, range of measurements, units for:
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:

OS = Oneonta Slough, MM = Model Marsh

11. Data anomalies (suspect data):

January 2001

OS

a) 01/17/2001 15:30:00 - 01/31/2001 15:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

b) The following anomalously high turbidity values were recorded. A probable cause for these values was not found so data were not removed.

Date	Time	Turbidity
01/27/2001	08:30:00	0859
01/27/2001	09:00:00	1630
01/27/2001	09:30:00	1636
01/27/2001	10:00:00	1642
01/27/2001	10:30:00	0907
01/27/2001	11:30:00	0384
01/27/2001	12:00:00	0388
01/27/2001	12:30:00	0281
01/27/2001	13:00:00	0244
01/27/2001	13:30:00	0179
01/27/2001	14:00:00	0214
01/27/2001	14:30:00	0174
01/27/2001	15:00:00	0315
01/27/2001	15:30:00	0102

c) 01/01/2001 00:00:00 - 01/15/2001 08:30:00, Turbidity missing. No probe installed.

MM

a) 01/01/2001 00:00:00 - 01/15/2001 9:00:00, values for depth were converted from feet to meters.

b) 01/01/2001 00:00:00 - 01/15/2001 09:00:00, turbidity missing. no probe installed.

c) Between 01/01/2001 00:00:00 - 01/15/2001 09:00:00, Time values were offset by + 40 sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

d) 01/17/2001 16:30:00 - 01/31/2001 13:00:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

e) 01/01/2001 00:00:00 - 01/15/2001 09:00:00, minimum values for depth unusually

high. Probably due to sedimentation at mouth of lagoon.

f) 01/08/2001 16:30:00 - 01/15/2001 09:00:00, salinity values unusually low.

Rain event began 01/08/01. Data were not removed.

g) 01/26/2001 13:30:00 - 01/28/2001 10:30:00, turbidity values unusually high.

Likely caused by rain event that began on 1/24/01. Data were not removed.

h) 01/26/2001 13:30:00 - 01/28/2001 13:00:00, salinity values unusually high.

Likely caused by rain event that began on 1/24/01. Data were not removed.

i) The following anomalously high turbidity values were recorded. A probable

cause for these values was not found so data were not removed.

Date	Time	Turbidity
01/19/2001	05:00:00	0326
01/19/2001	09:30:00	0104

01/20/2001	04:30:00	0281
01/20/2001	05:00:00	0189
01/20/2001	05:30:00	0138
01/20/2001	06:00:00	0109
01/20/2001	11:00:00	0182
01/20/2001	14:30:00	0120
01/21/2001	06:30:00	0113
01/21/2001	11:30:00	0128
01/21/2001	12:00:00	0384
01/22/2001	06:30:00	0154
01/22/2001	07:00:00	0263
01/22/2001	13:00:00	0127
01/23/2001	07:30:00	0122
01/23/2001	08:30:00	0164
01/23/2001	13:00:00	0156
01/23/2001	13:30:00	0112
01/23/2001	14:00:00	0138
01/23/2001	14:30:00	0166
01/23/2001	15:00:00	0234
01/23/2001	15:30:00	0215
01/23/2001	16:00:00	0172
01/23/2001	16:30:00	0202
01/23/2001	17:00:00	0362
01/23/2001	17:30:00	0194
01/23/2001	18:00:00	0238
01/23/2001	18:30:00	0311
01/23/2001	19:00:00	0212
01/23/2001	19:30:00	0258
01/23/2001	20:00:00	0214
01/23/2001	21:00:00	0255
01/23/2001	21:30:00	0251
01/23/2001	22:00:00	0317
01/23/2001	22:30:00	0273
01/23/2001	23:00:00	0214
01/23/2001	23:30:00	0258
01/24/2001	00:00:00	0234
01/24/2001	00:30:00	0271
01/24/2001	01:00:00	0341
01/24/2001	01:30:00	0241
01/24/2001	02:00:00	0310
01/24/2001	02:30:00	0375
01/24/2001	03:00:00	0435
01/24/2001	03:30:00	0169
01/24/2001	04:00:00	0197
01/24/2001	04:30:00	0300
01/24/2001	05:00:00	0243
01/24/2001	05:30:00	0225
01/24/2001	06:00:00	0303
01/24/2001	06:30:00	0246
01/24/2001	07:00:00	0157
01/24/2001	07:30:00	0424
01/24/2001	08:00:00	0261
01/24/2001	08:30:00	0222
01/24/2001	13:30:00	0132

01/24/2001	16:00:00	0105
01/24/2001	18:00:00	0101
01/24/2001	18:30:00	0107
01/24/2001	20:00:00	0113
01/25/2001	03:30:00	0116
01/25/2001	04:00:00	0117
01/25/2001	05:00:00	0113
01/25/2001	14:00:00	0211
01/25/2001	15:00:00	0280
01/25/2001	15:30:00	0256
01/25/2001	16:00:00	0226
01/25/2001	16:30:00	0201
01/25/2001	17:00:00	0182
01/25/2001	17:30:00	0235
01/25/2001	18:00:00	0306
01/25/2001	18:30:00	0383
01/25/2001	19:00:00	0255
01/25/2001	19:30:00	0530
01/25/2001	20:00:00	0520
01/25/2001	20:30:00	0317
01/25/2001	21:00:00	0188
01/25/2001	21:30:00	0308
01/25/2001	22:00:00	0259
01/25/2001	22:30:00	0266
01/25/2001	23:00:00	0253
01/25/2001	23:30:00	0360
01/26/2001	00:00:00	0318
01/26/2001	00:30:00	0223
01/26/2001	01:00:00	0432
01/26/2001	01:30:00	0360
01/26/2001	02:00:00	0279
01/26/2001	02:30:00	0473
01/26/2001	03:00:00	0507
01/26/2001	03:30:00	0421
01/26/2001	04:00:00	0428
01/26/2001	04:30:00	0348
01/26/2001	05:00:00	0349
01/26/2001	05:30:00	0203
01/26/2001	06:00:00	0212
01/26/2001	06:30:00	0189
01/26/2001	07:00:00	0218
01/26/2001	07:30:00	0279
01/26/2001	08:00:00	0180
01/26/2001	08:30:00	0112
01/26/2001	10:00:00	0328
01/27/2001	17:30:00	0841
01/27/2001	18:00:00	0563
01/27/2001	18:30:00	0811
01/27/2001	19:00:00	0280
01/27/2001	19:30:00	0273
01/27/2001	20:00:00	0308
01/27/2001	20:30:00	0259
01/27/2001	21:00:00	0206
01/27/2001	21:30:00	0161

01/27/2001	22:00:00	0145
01/27/2001	22:30:00	0142
01/27/2001	23:30:00	0113
01/28/2001	01:00:00	0114
01/28/2001	03:00:00	0117
01/28/2001	03:30:00	0128
01/28/2001	04:00:00	0129
01/28/2001	05:30:00	0108
01/28/2001	06:00:00	0107
01/28/2001	07:00:00	0111
01/28/2001	09:30:00	0461
01/28/2001	10:00:00	0744
01/28/2001	10:30:00	0234

February 2001

OS

a) 02/01/2001 15:00:00 - 02/15/2001 16:00:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

b) 02/20/2001 17:00:00 - 02/28/2001 23:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

c) The following anomalously high turbidity values were recorded. A probable

cause for these values was not found so data were not removed.

Date Time Turbidity

02/07/2001	06:00:00	0115
02/14/2001	01:00:00	0208
02/14/2001	01:30:00	0116
02/24/2001	07:30:00	0123
02/24/2001	08:00:00	1635
02/24/2001	08:30:00	0808
02/24/2001	09:00:00	0312
02/24/2001	09:30:00	0122
02/26/2001	12:00:00	0150
02/26/2001	12:30:00	0117
02/26/2001	13:00:00	0240
02/26/2001	22:00:00	0647
02/26/2001	22:30:00	0576
02/27/2001	23:30:00	0330
02/28/2001	00:00:00	0295
02/28/2001	23:00:00	0178
02/28/2001	23:30:00	0476

d) On the following dates and times slightly negative turbidity values were

recorded. Data were not removed.

02/02/2001	04:00:00 - 04:30:00
02/02/2001	22:30:00 - 23:00:00
02/03/2001	05:00:00 - 05:30:00
02/04/2001	06:30:00
02/04/2001	13:00:00 - 14:00:00
02/04/2001	15:30:00 - 17:00:00
02/05/2001	07:30:00

02/05/2001 14:30:00
 02/06/2001 16:30:00 - 17:00:00
 02/06/2001 20:30:00 - 21:30:00
 02/07/2001 09:30:00
 02/07/2001 17:00:00
 02/07/2001 21:30:00 - 22:30:00
 02/08/2001 10:00:00
 02/08/2001 16:30:00 - 17:30:00
 02/08/2001 18:30:00 - 19:30:00
 02/08/2001 22:00:00 - 23:00:00
 02/09/2001 10:30:00
 02/09/2001 17:30:00 - 19:00:00
 02/09/2001 22:30:00 - 23:30:00
 02/10/2001 00:00:00
 02/10/2001 11:30:00
 02/10/2001 18:30:00
 02/10/2001 19:30:00 - 20:30:00
 02/10/2001 22:30:00 - 23:30:00
 02/11/2001 00:00:00 - 00:30:00
 02/11/2001 10:00:00 - 10:30:00
 02/11/2001 11:30:00 - 12:00:00
 02/11/2001 19:00:00
 02/11/2001 23:00:00 - 23:30:00
 02/12/2001 00:00:00 - 01:00:00
 02/12/2001 11:30:00 - 13:00:00
 02/12/2001 23:30:00 - 02/13/2001 00:00:00
 02/13/2001 02:00:00 - 02:30:00
 02/20/2001 21:00:00 - 23:30:00
 02/21/2001 00:00:00 - 02:00:00
 02/21/2001 03:00:00
 02/21/2001 09:00:00
 02/21/2001 16:30:00 - 18:00:00
 02/21/2001 22:00:00 - 23:30:00
 02/22/2001 00:00:00 - 00:30:00
 02/22/2001 15:00:00
 02/22/2001 16:30:00
 02/22/2001 18:00:00 - 18:30:00
 02/22/2001 22:00:00
 02/22/2001 23:30:00 - 02/23/2001 00:30:00
 02/23/2001 02:30:00
 02/23/2001 04:30:00
 02/23/2001 16:00:00 - 17:00:00
 02/25/2001 02:30:00 - 06:00:00
 02/25/2001 23:30:00
 02/26/2001 00:30:00 - 01:30:00
 02/26/2001 02:30:00 - 09:00:00

MM

- a) 02/01/2001 14:00:00 - 02/15/2001 15:30:00, Time values were offset by + 40 sec. Data were corrected to nearest 00:00 or 00:30 minute interval.
- b) 02/07/2001 05:30:00 - 02/15/2001 15:30:00, specific conductivity and salinity

values unusually low. Likely correlated to rain event beginning on 02/07/01.

Data were not removed.

c) 02/07/2001 05:30:00 - 02/15/2001 15:30:00, DO% and DOmg/L values unusually

low. Probably due to rain event beginning on 02/07/01. Data were not removed.

d) The following anomalously high turbidity values were recorded. A probable

cause for these values was not found so data were not removed.

Date Time Turbidity

02/01/2001	17:00:00	0118
02/01/2001	17:30:00	0146
02/01/2001	18:00:00	0129
02/01/2001	18:30:00	0134
02/01/2001	19:00:00	0114
02/02/2001	12:00:00	0744
02/02/2001	15:30:00	0224
02/02/2001	16:00:00	0717
02/02/2001	16:30:00	0450
02/02/2001	18:00:00	0344
02/02/2001	19:00:00	0258
02/02/2001	19:30:00	0260
02/02/2001	20:00:00	0225
02/02/2001	20:30:00	0464
02/02/2001	21:00:00	0264
02/02/2001	21:30:00	0171
02/02/2001	22:00:00	0191
02/02/2001	22:30:00	0275
02/02/2001	23:00:00	0173
02/02/2001	23:30:00	0166
02/03/2001	00:00:00	0139
02/03/2001	00:30:00	0134
02/03/2001	01:00:00	0109
02/03/2001	12:30:00	0155
02/04/2001	04:30:00	0162
02/04/2001	05:00:00	0209
02/04/2001	05:30:00	0230
02/04/2001	17:00:00	0829
02/05/2001	05:00:00	0205
02/05/2001	05:30:00	0578
02/05/2001	06:00:00	0579
02/05/2001	06:30:00	0303
02/06/2001	05:00:00	0133
02/06/2001	05:30:00	0573
02/06/2001	06:00:00	0365
02/06/2001	06:30:00	0855
02/06/2001	07:00:00	0434
02/06/2001	07:30:00	0112
02/06/2001	13:30:00	0474
02/06/2001	14:00:00	0115
02/07/2001	05:30:00	0195

e) The following anomalously high turbidity values were recorded, likely correlated to rain event beginning on 02/07/01. Data were not removed.

02/07/2001	06:00:00	1322
02/07/2001	06:30:00	1345
02/07/2001	07:00:00	0365
02/07/2001	07:30:00	1521
02/07/2001	08:00:00	0113
02/07/2001	08:30:00	0137
02/07/2001	09:00:00	0366
02/07/2001	09:30:00	0280
02/07/2001	10:00:00	0494
02/07/2001	10:30:00	0671
02/07/2001	11:00:00	1082
02/07/2001	11:30:00	1056
02/07/2001	12:00:00	1382
02/07/2001	12:30:00	1202
02/07/2001	13:00:00	0691
02/07/2001	13:30:00	1023
02/07/2001	14:00:00	0820
02/07/2001	14:30:00	0808
02/07/2001	15:00:00	0773
02/07/2001	15:30:00	0731
02/07/2001	16:00:00	0732
02/07/2001	16:30:00	0642
02/07/2001	17:00:00	0711
02/07/2001	17:30:00	0641
02/07/2001	18:00:00	0684
02/07/2001	18:30:00	0753
02/07/2001	19:00:00	0684
02/07/2001	19:30:00	0739
02/07/2001	20:00:00	1086
02/07/2001	20:30:00	1025
02/07/2001	21:00:00	1181
02/07/2001	21:30:00	1383
02/07/2001	22:00:00	1513
02/07/2001	22:30:00	1505
02/07/2001	23:00:00	1500
02/07/2001	23:30:00	1496
02/08/2001	00:00:00	1496
02/08/2001	00:30:00	1496
02/08/2001	01:00:00	1495
02/08/2001	01:30:00	1494
02/08/2001	02:00:00	1494
02/08/2001	02:30:00	1494
02/08/2001	03:00:00	1495
02/08/2001	03:30:00	1495
02/08/2001	04:00:00	1495
02/08/2001	04:30:00	1495
02/08/2001	05:00:00	1499
02/08/2001	05:30:00	1499
02/08/2001	06:00:00	1501
02/08/2001	06:30:00	1510
02/08/2001	07:00:00	1514
02/08/2001	07:30:00	1485
02/08/2001	08:00:00	1518
02/08/2001	08:30:00	1518

02/08/2001	09:00:00	1518
02/08/2001	09:30:00	1518
02/08/2001	10:00:00	1519
02/08/2001	10:30:00	1519
02/08/2001	11:00:00	1518
02/08/2001	11:30:00	1518
02/08/2001	12:00:00	1519
02/08/2001	12:30:00	1522
02/08/2001	13:00:00	1524
02/08/2001	13:30:00	1529
02/08/2001	14:00:00	1529
02/08/2001	14:30:00	1529
02/08/2001	15:00:00	1530
02/08/2001	15:30:00	1529
02/08/2001	16:00:00	1529
02/08/2001	16:30:00	1528
02/08/2001	17:00:00	1528
02/08/2001	17:30:00	1526
02/08/2001	18:00:00	1524
02/08/2001	18:30:00	1523
02/08/2001	19:00:00	1520
02/08/2001	19:30:00	1517
02/08/2001	20:00:00	1516
02/08/2001	20:30:00	1516
02/08/2001	21:00:00	1517
02/08/2001	21:30:00	0237
02/08/2001	22:00:00	0217
02/08/2001	22:30:00	0189
02/08/2001	23:00:00	0184
02/08/2001	23:30:00	0184
02/09/2001	00:00:00	0259
02/09/2001	00:30:00	0301
02/09/2001	01:00:00	0401
02/09/2001	01:30:00	0383
02/09/2001	02:00:00	0354
02/09/2001	02:30:00	0317
02/09/2001	03:00:00	0379
02/09/2001	03:30:00	0398
02/09/2001	04:00:00	0522
02/09/2001	04:30:00	0609
02/09/2001	05:00:00	0616
02/09/2001	05:30:00	0635
02/09/2001	06:00:00	0644
02/09/2001	06:30:00	0658
02/09/2001	07:00:00	0594
02/09/2001	07:30:00	0585
02/09/2001	08:00:00	0577
02/09/2001	08:30:00	0545
02/09/2001	09:00:00	0527
02/09/2001	09:30:00	0520
02/09/2001	10:00:00	0527
02/09/2001	10:30:00	0556
02/09/2001	11:00:00	0630
02/09/2001	11:30:00	0673

02/09/2001	12:00:00	0682
02/09/2001	12:30:00	0702
02/09/2001	13:00:00	0687
02/09/2001	13:30:00	0685
02/09/2001	14:00:00	0664
02/09/2001	14:30:00	0655
02/09/2001	15:00:00	0650
02/09/2001	15:30:00	0637
02/09/2001	16:00:00	0614
02/09/2001	16:30:00	0607
02/09/2001	17:00:00	0588
02/09/2001	17:30:00	0501
02/09/2001	18:00:00	0446
02/09/2001	18:30:00	0401
02/09/2001	19:00:00	0346
02/09/2001	19:30:00	0266
02/09/2001	20:00:00	0202
02/09/2001	20:30:00	0258
02/09/2001	21:00:00	0311
02/09/2001	21:30:00	0357
02/09/2001	22:00:00	0311
02/09/2001	22:30:00	0308
02/09/2001	23:00:00	0319
02/09/2001	23:30:00	0313
02/10/2001	00:00:00	0241
02/10/2001	00:30:00	0273
02/10/2001	01:00:00	0297
02/10/2001	01:30:00	0261
02/10/2001	02:00:00	0306
02/10/2001	02:30:00	0318
02/10/2001	03:00:00	0323
02/10/2001	03:30:00	0334
02/10/2001	04:00:00	0275
02/10/2001	04:30:00	0288
02/10/2001	05:00:00	0295
02/10/2001	05:30:00	0279
02/10/2001	06:00:00	0262
02/10/2001	06:30:00	0255
02/10/2001	07:00:00	0225
02/10/2001	07:30:00	0201
02/10/2001	08:00:00	0114
02/10/2001	08:30:00	0231
02/10/2001	09:00:00	0225
02/10/2001	09:30:00	0185
02/10/2001	10:00:00	0211
02/10/2001	10:30:00	0167
02/10/2001	11:00:00	0182
02/10/2001	11:30:00	0221
02/10/2001	12:00:00	0218
02/10/2001	12:30:00	0154
02/10/2001	13:00:00	0225
02/10/2001	13:30:00	0188
02/10/2001	14:00:00	0155
02/10/2001	14:30:00	0161

02/10/2001	15:00:00	0194
02/10/2001	15:30:00	0198
02/10/2001	16:00:00	0102
02/10/2001	17:30:00	0156
02/10/2001	18:00:00	0153
02/10/2001	18:30:00	0150
02/10/2001	19:30:00	0123
02/10/2001	20:30:00	0158
02/10/2001	21:30:00	0116
02/10/2001	22:30:00	0166
02/10/2001	23:00:00	0124
02/10/2001	23:30:00	1519
02/11/2001	00:00:00	1519
02/11/2001	00:30:00	0110
02/11/2001	01:00:00	0128
02/11/2001	01:30:00	0149
02/11/2001	02:00:00	0178
02/11/2001	03:00:00	0123
02/11/2001	03:30:00	0302
02/11/2001	04:00:00	0299
02/11/2001	04:30:00	0320
02/11/2001	05:00:00	0280
02/11/2001	06:00:00	0157
02/11/2001	06:30:00	0166
02/11/2001	07:00:00	0243
02/11/2001	07:30:00	0320
02/11/2001	08:30:00	0100
02/11/2001	09:00:00	0112
02/11/2001	09:30:00	0170
02/11/2001	10:30:00	0156
02/11/2001	11:00:00	0196
02/11/2001	11:30:00	0217
02/11/2001	12:00:00	0185
02/11/2001	12:30:00	0177
02/11/2001	13:00:00	0123
02/11/2001	13:30:00	0154
02/11/2001	14:00:00	0155
02/11/2001	14:30:00	0244
02/11/2001	15:00:00	0209
02/11/2001	15:30:00	0190
02/11/2001	16:30:00	0147
02/11/2001	17:00:00	0179
02/11/2001	17:30:00	0236
02/11/2001	18:00:00	0194
02/11/2001	18:30:00	0164
02/11/2001	19:00:00	0118
02/11/2001	19:30:00	0302
02/11/2001	20:00:00	0310
02/11/2001	20:30:00	0197
02/11/2001	21:00:00	1521
02/11/2001	21:30:00	1521
02/11/2001	22:00:00	1521
02/11/2001	22:30:00	1523
02/11/2001	23:00:00	1523

02/11/2001	23:30:00	1521
02/12/2001	00:00:00	1520
02/12/2001	00:30:00	1520
02/12/2001	01:00:00	1519
02/12/2001	01:30:00	1518
02/12/2001	02:00:00	1515
02/12/2001	02:30:00	1513
02/12/2001	03:00:00	1511
02/12/2001	03:30:00	1508
02/12/2001	04:00:00	1491
02/12/2001	04:30:00	1452
02/12/2001	05:00:00	1398
02/12/2001	05:30:00	1397
02/12/2001	06:00:00	1240
02/12/2001	06:30:00	1205
02/12/2001	07:00:00	1127
02/12/2001	07:30:00	1093
02/12/2001	08:00:00	1054
02/12/2001	08:30:00	1087
02/12/2001	09:00:00	1111
02/12/2001	09:30:00	1128
02/12/2001	10:00:00	1160
02/12/2001	10:30:00	1180
02/12/2001	11:00:00	1161
02/12/2001	11:30:00	1154
02/12/2001	12:00:00	1149
02/12/2001	12:30:00	1135
02/12/2001	13:00:00	1145
02/12/2001	13:30:00	1136
02/12/2001	14:00:00	1131
02/12/2001	14:30:00	1148
02/12/2001	15:00:00	1138
02/12/2001	15:30:00	1123
02/12/2001	16:00:00	1120
02/12/2001	16:30:00	1114
02/12/2001	17:00:00	1119
02/12/2001	17:30:00	1120
02/12/2001	18:00:00	1114
02/12/2001	18:30:00	1081
02/12/2001	19:00:00	1088
02/12/2001	19:30:00	1086
02/12/2001	20:00:00	1083
02/12/2001	20:30:00	1067
02/12/2001	21:00:00	1065
02/12/2001	21:30:00	1058
02/12/2001	22:00:00	1057
02/12/2001	22:30:00	1062
02/12/2001	23:00:00	1053
02/12/2001	23:30:00	1041
02/13/2001	00:00:00	1033
02/13/2001	00:30:00	1036
02/13/2001	01:00:00	1041
02/13/2001	01:30:00	1036
02/13/2001	02:00:00	1042

02/13/2001	02:30:00	1051
02/13/2001	03:00:00	1053
02/13/2001	03:30:00	1052
02/13/2001	04:00:00	1061
02/13/2001	04:30:00	1060
02/13/2001	05:00:00	1071
02/13/2001	05:30:00	1077
02/13/2001	06:00:00	1079
02/13/2001	06:30:00	1088
02/13/2001	07:00:00	1091
02/13/2001	07:30:00	1101
02/13/2001	08:00:00	1107
02/13/2001	08:30:00	1114
02/13/2001	09:00:00	1123
02/13/2001	09:30:00	1127
02/13/2001	10:00:00	1128
02/13/2001	10:30:00	1139
02/13/2001	11:00:00	1143
02/13/2001	11:30:00	1161
02/13/2001	12:00:00	1179
02/13/2001	12:30:00	1178
02/13/2001	13:00:00	1201
02/13/2001	13:30:00	1228
02/13/2001	14:00:00	1212
02/13/2001	14:30:00	1226
02/13/2001	15:00:00	1277
02/13/2001	15:30:00	1395
02/13/2001	16:00:00	1527
02/13/2001	17:30:00	1520
02/13/2001	18:00:00	1517
02/13/2001	18:30:00	1515
02/13/2001	19:00:00	1513
02/13/2001	19:30:00	1511
02/13/2001	20:00:00	1509
02/13/2001	20:30:00	1507
02/13/2001	21:00:00	1503
02/13/2001	21:30:00	1503
02/13/2001	22:00:00	1501
02/13/2001	22:30:00	1500
02/13/2001	23:00:00	1501
02/13/2001	23:30:00	1500
02/14/2001	00:00:00	1501
02/14/2001	00:30:00	1501
02/14/2001	01:00:00	1507
02/14/2001	01:30:00	1514
02/14/2001	02:00:00	1004
02/14/2001	02:30:00	0725
02/14/2001	03:00:00	1514
02/14/2001	03:30:00	0646
02/14/2001	04:00:00	1072
02/14/2001	04:30:00	1010
02/14/2001	05:00:00	1495
02/14/2001	05:30:00	1494
02/14/2001	06:00:00	1494

02/14/2001	06:30:00	1494
02/14/2001	07:00:00	0841
02/14/2001	07:30:00	1494
02/14/2001	08:00:00	1495
02/14/2001	08:30:00	1496
02/14/2001	09:00:00	1497
02/14/2001	09:30:00	1501
02/14/2001	10:00:00	1503
02/14/2001	10:30:00	1507
02/14/2001	11:00:00	1511
02/14/2001	11:30:00	1518
02/14/2001	12:00:00	1524
02/14/2001	12:30:00	1530
02/14/2001	13:00:00	1533
02/14/2001	13:30:00	1535
02/14/2001	14:00:00	1537
02/14/2001	14:30:00	1538
02/14/2001	15:00:00	1537
02/14/2001	15:30:00	1539
02/14/2001	16:00:00	1536
02/14/2001	16:30:00	1535
02/14/2001	17:00:00	1528
02/14/2001	17:30:00	1527
02/14/2001	18:00:00	1522
02/14/2001	18:30:00	1521
02/14/2001	19:00:00	0310
02/14/2001	19:30:00	0898
02/14/2001	20:00:00	0421
02/14/2001	20:30:00	0336
02/14/2001	21:00:00	0343
02/14/2001	21:30:00	0351
02/14/2001	22:00:00	0465
02/14/2001	22:30:00	0529
02/14/2001	23:00:00	0269
02/14/2001	23:30:00	0697
02/15/2001	00:00:00	0455
02/15/2001	00:30:00	0302
02/15/2001	01:00:00	0469
02/15/2001	01:30:00	0327
02/15/2001	02:00:00	0345
02/15/2001	02:30:00	0364
02/15/2001	03:00:00	0258
02/15/2001	03:30:00	0551
02/15/2001	04:00:00	1513
02/15/2001	04:30:00	0388
02/15/2001	05:00:00	0419
02/15/2001	05:30:00	0414
02/15/2001	06:00:00	0620
02/15/2001	06:30:00	1492
02/15/2001	07:00:00	1493
02/15/2001	07:30:00	1495
02/15/2001	08:00:00	1499
02/15/2001	08:30:00	1506
02/15/2001	09:00:00	1514

02/15/2001	09:30:00	1520
02/15/2001	10:00:00	1526
02/15/2001	10:30:00	1530
02/15/2001	11:00:00	0650
02/15/2001	11:30:00	0390
02/15/2001	12:00:00	0301
02/15/2001	12:30:00	0250
02/15/2001	13:00:00	0394
02/15/2001	13:30:00	0280
02/15/2001	14:00:00	0197
02/15/2001	14:30:00	0306
02/15/2001	15:00:00	0519
02/15/2001	15:30:00	0195

e) On the following dates and times slightly negative turbidity values were

recorded. Data were not removed.

02/03/2001	05:00:00 - 06:00:00
02/04/2001	06:30:00 - 07:00:00
02/04/2001	19:30:00
02/05/2001	07:30:00
02/06/2001	08:30:00

March 2001

OS

a) 03/01/2001 00:00:00 - 03/09/2001 15:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

b) The following anomalously high turbidity values were recorded. A probable

cause for these values was not found so data were not removed.

Date Time Turbidity

03/05/2001	05:30:00	0107
03/06/2001	05:30:00	0134
03/06/2001	06:00:00	0140
03/06/2001	06:30:00	0135
03/06/2001	20:30:00	0442
03/06/2001	21:00:00	0110
03/06/2001	22:00:00	0323
03/07/2001	00:00:00	0100
03/07/2001	05:00:00	1651
03/07/2001	05:30:00	1646
03/07/2001	06:00:00	1045
03/07/2001	06:30:00	0489
03/07/2001	07:00:00	0269
03/07/2001	07:30:00	0131
03/07/2001	08:30:00	0113
03/07/2001	19:30:00	0104
03/07/2001	20:00:00	0449
03/08/2001	05:30:00	0713
03/08/2001	06:00:00	0144
03/08/2001	06:30:00	0117
03/08/2001	07:00:00	0137
03/08/2001	07:30:00	0200
03/08/2001	08:00:00	0144

03/09/2001 06:00:00 0101
03/09/2001 06:30:00 0184
03/09/2001 08:00:00 0146
03/09/2001 08:30:00 0172
03/09/2001 15:30:00 0736

c) On the following dates and times slightly negative turbidity values were

recorded. Data were not removed.

03/17/2001 03:30:00 - 06:00:00
03/17/2001 07:30:00
03/18/2001 06:00:00
03/18/2001 07:00:00 - 07:30:00
03/18/2001 20:30:00 - 21:30:00
03/19/2001 20:00:00 - 21:30:00
03/19/2001 23:00:00
03/20/2001 21:30:00 - 23:00:00
03/21/2001 00:00:00
03/21/2001 21:00:00
03/21/2001 22:00:00 - 23:30:00
03/22/2001 08:30:00
03/22/2001 22:00:00 - 23:30:00
03/24/2001 22:00:00
03/25/2001 10:00:00
03/26/2001 23:00:00
03/27/2001 10:30:00 - 11:00:00

MM

a) 03/01/2001 00:00:00 - 03/31/2001 23:30:00, data for all parameters missing-

logger not deployed due to heavy sedimentation at station. Deployment holder had

to be moved at a very low tide.

April 2001

OS

a) 04/03/2001 18:00:00 - 04/18/2001 15:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

b) 04/19/2001 17:00:00 - 04/30/2001 23:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

c) 04/19/2001 17:00:00 - 04/30/2001 23:30:00, pH missing - no probe installed.

d) The following anomalously high turbidity values were recorded. A probable

cause for these values was not found so data were not removed.

Date Time Turbidity

04/21/2001 19:00:00 0409

e) On the following dates and times slightly negative turbidity values were

recorded. Data were not removed.

04/03/2001 18:30:00 - 20:30:00
04/04/2001 04:30:00
04/04/2001 05:30:00 - 08:30:00

04/04/2001 15:30:00
04/04/2001 19:00:00 - 21:30:00
04/05/2001 05:00:00 - 06:30:00
04/05/2001 08:00:00 - 09:30:00
04/05/2001 10:30:00
04/05/2001 12:00:00
04/05/2001 19:00:00 - 21:00:00
04/06/2001 06:00:00 - 08:00:00
04/06/2001 09:00:00 - 10:00:00
04/06/2001 13:00:00 - 13:30:00
04/06/2001 16:30:00
04/06/2001 19:00:00 - 22:30:00
04/07/2001 07:00:00 - 10:30:00
04/07/2001 17:00:00
04/07/2001 22:00:00 - 22:30:00
04/08/2001 07:30:00 - 08:00:00
04/08/2001 09:30:00 - 11:00:00
04/08/2001 19:30:00
04/08/2001 20:30:00 - 21:00:00
04/08/2001 23:00:00
04/09/2001 03:00:00 - 03:30:00
04/09/2001 04:30:00 - 05:00:00
04/09/2001 06:30:00
04/09/2001 07:30:00 - 12:00:00
04/09/2001 21:00:00 - 21:30:00
04/09/2001 23:00:00
04/10/2001 02:30:00
04/10/2001 07:30:00 - 08:30:00
04/10/2001 10:30:00
04/10/2001 23:00:00 - 23:30:00
04/11/2001 00:00:00
04/11/2001 22:30:00 - 23:30:00
04/12/2001 00:00:00 - 01:00:00
04/12/2001 03:30:00 - 05:00:00
04/12/2001 06:00:00 - 11:30:00
04/12/2001 12:30:00 - 13:00:00
04/12/2001 19:00:00
04/12/2001 20:30:00 - 21:00:00
04/12/2001 23:30:00 - 04/13/2001 12:30:00
04/13/2001 16:30:00
04/13/2001 21:00:00
04/13/2001 22:00:00 - 23:30:00
04/14/2001 00:00:00 - 08:00:00
04/14/2001 21:30:00
04/14/2001 22:30:00
04/14/2001 23:30:00 - 04/15/2001 00:00:00
04/15/2001 08:30:00
04/15/2001 10:00:00
04/15/2001 19:30:00 - 22:30:00
04/15/2001 23:30:00 - 04/16/2001 00:00:00
04/16/2001 02:30:00 - 08:30:00
04/16/2001 19:30:00 - 23:30:00
04/17/2001 00:00:00
04/17/2001 02:00:00

04/17/2001 04:30:00 - 07:30:00
04/17/2001 12:30:00
04/17/2001 18:30:00 - 23:30:00
04/18/2001 00:00:00
04/18/2001 04:30:00 - 08:00:00
04/18/2001 10:00:00
04/18/2001 15:00:00

MM

a) 04/01/2001 00:00:00 - 04/03/2001 16:00:00 all - logger not deployed due to

heavy sedimentation at site

b) 04/03/2001 16:30:00 - 04/18/2001 14:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

c) 04/19/2001 16:00:00 - 04/30/2001 23:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

d) 04/07/2001 18:30:00 - 04/13/2001 02:30:00 Turbidity values higher than average for site. Rainfall event from 4/7/01 through 4/10/01 believed to be

cause. Data were not removed.

e) 04/20/2001 01:00:00 - 04/22/2001 22:00:00 Turbidity values higher than average. Rainfall event from 4/20/01 through 04/21/01 believed to be cause.

f) 04/07/2001 11:30:00 - 04/15/2001 19:00:00 Salinity and Specific conductivity

values low, due to rain event.

g) 04/21/2001 01:30:00 - 04/25/2001 00:00:00 Salinity and Specific conductivity

values low, due to rain event.

h) On the following dates and times slightly negative depth values were recorded. Data were not removed.

04/07/2001 03:00:00 - 04:00:00

04/12/2001 17:30:00 - 18:00:00

04/12/2001 19:00:00 - 19:30:00

04/14/2001 06:00:00 - 07:30:00

04/15/2001 06:30:00 - 08:00:00

04/15/2001 23:30:00

04/16/2001 07:30:00 - 08:30:00

04/16/2001 23:00:00 - 23:30:00

04/17/2001 00:00:00 - 01:30:00

04/20/2001 01:30:00 - 04:30:00

04/21/2001 03:00:00

04/22/2001 04:00:00

i) The following anomalously high turbidity values were recorded. A probable

cause for these values was not found so data were not removed.

Date Time Turbidity

04/24/2001 15:30:00 0224

04/24/2001 16:00:00 0312

04/24/2001 17:30:00 0595

04/24/2001 18:00:00 1231

04/24/2001 20:00:00 0247

04/30/2001 16:00:00 0610

May 2001

OS

a) 05/01/2001 00:00:00 - 05/07/2001 14:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

b) On the following dates and times slightly negative depth values were recorded. Data were not removed.

05/28/2001 10:00:00 - 12:00:00

c) 05/01/2001 00:00:00 - 05/07/2001 14:30:00, pH missing - no probe installed

d) 05/09/2001 17:00:00 - 05/30/2001 11:30:00, pH missing. No probe installed.

MM

a) 05/01/2001 00:00:00 - 05/07/2001 13:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

b) The following anomalously high turbidity values were recorded. A probable

cause for these values was not found so data were not removed.

Date Time Turbidity

05/01/2001 15:00:00 0216

05/02/2001 14:00:00 0225

05/02/2001 16:00:00 0424

05/03/2001 12:30:00 0139

05/03/2001 14:00:00 0603

05/04/2001 11:30:00 0459

05/04/2001 13:30:00 0244

05/04/2001 14:00:00 0163

05/14/2001 15:30:00 0217

05/17/2001 17:30:00 0861

c) On the following dates and times slightly negative depth values were recorded. Data were not removed.

05/04/2001 01:00:00 - 04:00:00

05/05/2001 02:00:00

05/05/2001 03:30:00 - 04:30:00

05/06/2001 05:30:00

05/11/2001 05:00:00

05/26/2001 06:00:00

05/26/2001 16:00:00

05/27/2001 06:00:00

05/23/2001 04:00:00

05/29/2001 23:00:00

June 2001

OS

a) On the following dates and times slightly negative depth values were recorded. Data were not removed.

06/09/2001 08:00:00 - 09:30:00

06/10/2001 08:00:00 - 09:30:00

06/11/2001 08:30:00 - 09:00:00

06/12/2001 10:00:00

06/22/2001 07:00:00 - 07:30:00
06/23/2001 06:30:00 - 08:00:00
06/24/2001 07:30:00 - 09:00:00
06/25/2001 08:00:00 - 09:30:00
06/28/2001 07:30:00 - 12:00:00
06/29/2001 09:30:00 - 12:00:00
06/30/2001 11:00:00 - 12:00:00

b) 06/05/2001 13:30:00 - 06/25/2001 12:30:00, pH missing. No probe installed.

MM

a) 06/05/2001 23:08:40 - 06/25/2001 02:42:00, all - sample interval for data

collection was set incorrectly (689 min - date was probably entered as interval). No data is available for this time period.

b) The following anomalously high turbidity values were recorded. A probable

cause for these values was not found so data were not removed:

Date Time Turbidity

06/27/2001 19:00:00 0141

06/27/2001 20:30:00 0157

c) 06/27/2001 12:30:00 - 06/30/2001 23:30:00, pH missing. No probe installed

July 2001

OS

a) 07/22/2001 05:00:00 - 07/26/2001 12:00:00, DO% and DOmg missing. Negative

values were recorded which exceeds the range on sensor. Data were removed.

b) On the following dates and times slightly negative depth values were recorded. Data were not removed.

07/05/2001 06:30:00

07/07/2001 06:00:00 - 08:00:00

07/08/2001 06:30:00 - 08:30:00

07/09/2001 08:00:00 - 08:30:00

07/10/2001 07:00:00 - 09:00:00

07/11/2001 07:00:00 - 09:30:00

c) The following anomalously high turbidity values were recorded. A probable

cause for these values was not found so data were not removed.

Date Time Turbidity

07/15/2001 17:30:00 0113

07/16/2001 15:00:00 0124

07/18/2001 20:30:00 0116

07/19/2001 17:00:00 0124

07/20/2001 18:00:00 0113

07/25/2001 14:00:00 0130

d) 07/30/2001 13:30:00 - 07/31/2001 23:30:00, turbidity missing. Many negative values. Data were removed.

MM

a) 07/01/2001 00:00:00 - 07/11/2001 11:30:00, pH missing. No probe installed

b) 07/13/2001 14:30:00 - 07/26/2001 11:00:00, pH missing. No probe installed

c) On the following dates and times slightly negative depth values were recorded. Data were not removed.

07/03/2001 02:30:00 - 06:00:00

07/03/2001 12:30:00

07/04/2001 03:30:00

07/04/2001 15:30:00

07/05/2001 04:00:00

07/06/2001 04:30:00 - 08:30:00

07/07/2001 04:30:00

07/09/2001 04:30:00 - 06:00:00

07/13/2001 21:30:00 - 23:30:00

07/14/2001 00:30:00

07/14/2001 08:00:00 - 12:00:00

07/15/2001 01:30:00 - 03:00:00

07/15/2001 08:00:00 - 09:30:00

07/22/2001 17:30:00

07/23/2001 06:30:00 - 07:30:00

07/31/2001 12:30:00 - 13:00:00

d) The following anomalously high turbidity values were recorded. A probable cause for these values was not found so data were not removed.

Date	Time	Turbidity
07/10/2001	14:00:00	0102
07/18/2001	20:30:00	0159
07/22/2001	04:00:00	0101
07/23/2001	22:00:00	0109
07/24/2001	13:00:00	0105
07/24/2001	23:00:00	0101
07/25/2001	15:30:00	0113
07/25/2001	16:00:00	0107

August 2001

OS

a) 08/10/2001 11:00:00 - 08/23/2001 09:00:00, turbidity recorded many negative

values. Calibration error suspected. Data were removed.

b) 08/24/2001 10:30:00 - 08/31/2001 23:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

c) 08/01/2001 00:00:00 - 08/09/2001 09:30:00, turbidity recorded many negative

values. Calibration error suspected. Data were removed.

d) On the following dates and times slightly negative depth values were Recorded: Data were not removed.

08/16/2001 02:00:00 - 08/16/2001 04:30:00

08/17/2001 03:30:00 - 08/17/2001 05:30:00

08/18/2001 04:30:00 - 08/18/2001 06:00:00

08/19/2001 05:30:00 - 08/19/2001 06:30:00

08/20/2001 06:00:00 - 08/20/2001 07:00:00

08/20/2001 16:30:00 - 08/20/2001 17:00:00

08/21/2001 06:00:00 - 08/21/2001 07:30:00
08/22/2001 05:30:00 - 08/22/2001 08:00:00

MM

a) 08/19/2001 16:30:00 - 08/19/2001 18:30:00, pH anomalously low. Depth was

zero, so datalogger was measuring pH of the surface water.

b) 08/24/2001 11:30:00 - 08/31/2001 23:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

c) 08/30/2001 12:30:00 - 08/31/2001 23:30:00, depth missing. Minimum depth

values were too negative for shallow vented sensor. Could not determine cause.

Possible blockage in sensor or vent tube. Data were removed.

d) On the following dates and times slightly negative depth values were recorded. Data were not removed.

08/01/2001 01:30:00 - 06:00:00
08/01/2001 14:00:00 - 14:30:00
08/02/2001 02:30:00 - 06:30:00
08/02/2001 13:00:00 - 13:30:00
08/03/2001 03:00:00 - 07:00:00
08/04/2001 03:30:00 - 17:30:00
08/04/2001 14:30:00
08/05/2001 04:00:00 - 08:00:00
08/05/2001 16:00:00 - 17:00:00
08/06/2001 04:00:00 - 08:30:00
08/06/2001 15:00:00
08/06/2001 16:30:00 - 17:30:00
08/07/2001 04:00:00 - 08:30:00
08/07/2001 16:00:00 - 18:30:00
08/08/2001 03:30:00 - 09:00:00
08/08/2001 16:30:00 - 19:00:00
08/09/2001 04:00:00 - 09:00:00
08/10/2001 19:30:00 - 21:30:00
08/11/2001 05:00:00 - 09:00:00
08/11/2001 20:00:00 - 23:30:00
08/12/2001 00:00:00 - 00:30:00
08/12/2001 06:30:00 - 08:30:00
08/12/2001 20:30:00 - 23:30:00
08/13/2001 00:00:00 - 03:30:00
08/13/2001 09:30:00 - 10:00:00
08/13/2001 22:00:00 - 23:30:00
08/14/2001 00:00:00 - 04:00:00
08/14/2001 23:30:00 - 08/15/2001 05:00:00
08/15/2001 11:30:00 - 12:00:00
08/16/2001 01:30:00 - 05:30:00
08/17/2001 03:00:00 - 04:00:00
08/17/2001 12:30:00 - 15:00:00
08/18/2001 04:00:00 - 07:00:00
08/18/2001 13:00:00 - 16:30:00
08/19/2001 05:30:00 - 07:00:00
08/19/2001 14:30:00
08/20/2001 06:00:00 - 07:30:00

08/20/2001 15:00:00
08/21/2001 05:30:00 - 08:00:00
08/21/2001 16:00:00 - 16:30:00
08/22/2001 04:30:00 - 08:30:00
08/22/2001 17:00:00 - 20:00:00
08/23/2001 04:00:00 - 04:30:00
08/29/2001 13:00:00
08/30/2001 12:00:00

e) The following anomalously high turbidity values were recorded. A probable

cause for these values was not found so data were not removed.

Date Time Turbidity

08/01/2001 16:30:00 1515

f) On the following dates and times slightly negative turbidity values were

recorded. Data were not removed.

08/10/2001 14:30:00
08/11/2001 14:30:00
08/11/2001 15:30:00
08/12/2001 15:00:00 - 16:30:00
08/13/2001 15:30:00
08/13/2001 16:30:00 - 18:30:00
08/14/2001 17:30:00 - 20:30:00
08/15/2001 01:00:00 - 01:30:00
08/15/2001 03:00:00 - 04:00:00
08/15/2001 18:00:00 - 21:30:00
08/16/2001 01:30:00 - 06:00:00
08/16/2001 08:00:00
08/16/2001 13:00:00 - 14:00:00
08/16/2001 16:30:00 - 23:30:00
08/17/2001 00:00:00 - 00:30:00
08/17/2001 02:00:00 - 07:00:00
08/17/2001 08:30:00
08/17/2001 09:30:00 - 11:00:00
08/17/2001 14:30:00
08/17/2001 15:30:00
08/17/2001 17:30:00 - 23:30:00
08/18/2001 01:00:00
08/18/2001 02:00:00 - 02:30:00
08/18/2001 04:00:00 - 07:30:00
08/18/2001 09:30:00 - 10:00:00
08/18/2001 18:30:00 - 23:30:00
08/19/2001 00:00:00 - 08:30:00
08/19/2001 09:30:00 - 12:00:00
08/19/2001 13:30:00
08/19/2001 14:30:00
08/19/2001 17:00:00
08/19/2001 18:00:00
08/19/2001 19:30:00 - 23:30:00
08/20/2001 00:00:00 - 04:00:00
08/20/2001 05:00:00 - 08:30:00
08/20/2001 10:00:00 - 13:00:00
08/20/2001 14:30:00 - 15:00:00
08/20/2001 16:00:00

08/20/2001 17:00:00 - 19:30:00
08/20/2001 20:30:00 - 23:30:00
08/21/2001 00:00:00 - 03:30:00
08/21/2001 04:30:00 - 08:30:00
08/21/2001 10:30:00 - 13:30:00
08/21/2001 18:00:00
08/21/2001 19:00:00 - 20:00:00
08/21/2001 21:30:00 - 23:30:00
08/22/2001 00:00:00 - 02:30:00
08/22/2001 05:00:00 - 05:30:00
08/22/2001 12:30:00 - 13:30:00
08/23/2001 00:00:00 - 01:00:00

September 2001

OS

a) 09/01/2001 00:00:00 - 09/06/2001 15:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

b) The following anomalously high turbidity values were recorded. A probable

cause for these values was not found so data were not removed.

Date Time Turbidity

09/23/2001 18:00:00 0097

MM

a) 09/01/2001 00:00:00 - 09/06/2001 15:00:00, depth missing. Minimum values were

too negative for shallow vented level sensor. Data were removed.

b) 09/01/2001 00:00:00 - 09/06/2001 15:00:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

c) 09/11/2001 11:30:00 - 09/30/2001 23:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

d) On the following dates and times slightly negative depth values were recorded. Data were not removed.

09/12/2001 01:00:00 - 03:30:00

09/16/2001 04:00:00 - 05:00:00

09/16/2001 16:00:00 - 16:30:00

09/17/2001 04:30:00 - 06:00:00

09/17/2001 16:30:00 - 17:00:00

09/18/2001 05:00:00 - 06:00:00

09/18/2001 17:30:00 - 18:00:00

09/19/2001 05:00:00 - 06:30:00

09/19/2001 18:00:00 - 19:30:00

09/20/2001 04:00:00 - 07:00:00

09/20/2001 18:00:00 - 20:30:00

09/21/2001 03:30:00 - 07:00:00

09/21/2001 18:30:00 - 22:00:00

09/22/2001 04:30:00 - 07:30:00

09/22/2001 18:30:00 - 23:30:00

09/23/2001 19:30:00 - 23:30:00

09/24/2001 00:00:00 - 01:30:00

e) The following anomalously high turbidity values were recorded. A probable cause for these values was not found so data were not removed.

Date	Time	Turbidity
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09/17/2001	02:30:00	0175
------------	----------	------

09/21/2001	16:00:00	0318
------------	----------	------

October 2001

OS

a) 10/19/2001 17:00:00 - 10/31/2001 23:30:00, depth missing. most values were

negative. Calibration error suspected. Data were removed.

b) 10/19/2001 17:00:00 - 10/31/2001 23:30:00, time values offset by +40 sec.

Time values were rounded to nearest 30 min interval.

c) On the following dates and times slightly negative turbidity values were

recorded. Data were not removed.

10/03/2001 20:30:00

10/03/2001 22:00:00

10/04/2001 10:30:00

10/04/2001 22:00:00

10/04/2001 23:00:00

10/05/2001 11:00:00

10/08/2001 12:30:00

10/09/2001 13:30:00

10/10/2001 15:00:00 - 15:30:00

10/11/2001 17:30:00

10/12/2001 06:00:00

10/12/2001 07:00:00 - 07:30:00

10/13/2001 07:30:00

10/14/2001 06:00:00 - 06:30:00

10/14/2001 08:00:00 - 08:30:00

10/15/2001 06:00:00 - 06:30:00

10/15/2001 08:30:00 - 09:00:00

MM

a) 10/01/2001 00:00:00 - 10/02/2001 14:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

b) 10/03/2001 14:30:00 - 10/15/2001 13:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

c) 10/19/2001 15:30:00 - 10/31/2001 23:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

d) 10/24/2001 11:30:00, all parameters missing. Sensors were out of water. Data were removed.

e) On the following dates and times slightly negative depth values were recorded. Data were not removed.

10/04/2001 03:30:00 - 06:30:00

10/04/2001 15:00:00

10/09/2001 22:30:00 - 23:30:00

10/13/2001 04:00:00
10/14/2001 03:00:00 - 04:00:00
10/15/2001 02:30:00 - 04:30:00
10/19/2001 17:30:00 - 21:00:00
10/20/2001 03:30:00 - 06:00:00
10/20/2001 17:30:00 - 22:30:00
10/21/2001 17:30:00 - 23:30:00
10/22/2001 00:00:00
10/22/2001 18:00:00 - 23:30:00
10/23/2001 00:00:00 - 01:00:00
10/23/2001 19:00:00 - 23:30:00
10/24/2001 00:00:00 - 02:00:00
10/29/2001 00:30:00 - 04:00:00
10/30/2001 03:00:00 - 04:30:00

f) The following anomalously high turbidity values were recorded. A probable cause for these values was not found so data were not removed.

Date	Time	Turbidity
10/05/2001	19:30:00	0141
10/07/2001	12:30:00	0824
10/19/2001	16:00:00	0114
10/20/2001	15:30:00	0299
10/21/2001	16:00:00	1906

g) On the following dates and times slightly negative turbidity values were recorded. Data were not removed.

Date	Time	Turbidity
10/12/2001	07:00:00	-0001
10/12/2001	08:00:00	-0002
10/12/2001	19:00:00	-0002
10/13/2001	03:30:00	-0001
10/13/2001	08:00:00	-0002
10/13/2001	20:00:00	-0001
10/14/2001	03:00:00	-0001
10/14/2001	03:30:00	-0001
10/14/2001	05:00:00	-0001
10/14/2001	08:00:00	-0001
10/14/2001	08:30:00	-0001
10/14/2001	20:30:00	-0002
10/15/2001	09:00:00	-0001

November 2001

OS

a) 11/01/2001 00:00:00 - 11/01/2001 15:00:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

b) 11/01/2001 00:00:00 - 11/01/2001 15:00:00, depth missing. Most depth values

were negative. Calibration error suspected. Data were removed.

c) 11/30/2001 16:00:00 - 11/30/2001 23:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

d) On the following dates and times slightly negative depth values were recorded. Data were not removed.

11/07/2001 20:30:00 - 23:30:00
11/08/2001 00:00:00
11/08/2001 22:00:00 - 23:30:00
11/09/2001 00:00:00 - 00:30:00
11/09/2001 23:30:00 - 11/10/2001 01:30:00
11/11/2001 00:30:00 - 02:00:00
11/12/2001 01:30:00 - 02:00:00
11/13/2001 02:00:00 - 02:30:00
11/13/2001 15:30:00 - 16:30:00
11/14/2001 16:30:00 - 17:00:00
11/15/2001 17:00:00 - 18:00:00
11/16/2001 17:30:00 - 19:00:00
11/17/2001 17:30:00 - 20:00:00
11/18/2001 17:30:00 - 21:00:00
11/19/2001 17:30:00 - 22:00:00
11/20/2001 20:30:00 - 21:00:00

e) 11/22 through 12/12, minimum water depth is higher than usual during this time, perhaps due to possible sedimentation at the mouth of the slough, however there is no ancillary data to back this up.

MM

a) 11/01/2001 00:00:00 - 11/01/2001 14:30:00, Time values were offset by + 40

sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

b) 11/24/2001 23:00:00 - 11/27/2001 14:00:00, turbidity missing. Average values

well above normal turbidity readings even when taking into consideration the

rainfall event which occurred 11/24/01. Data were removed.

c) On the following dates and times slightly negative depth values were recorded. Data were not removed.

11/15/2001 16:30:00

11/16/2001 02:00:00

11/16/2001 17:00:00

11/17/2001 04:30:00

11/18/2001 04:00:00 - 04:30:00

d) The following anomalously high turbidity values were recorded. A probable

cause for these values was not found so data were not removed.

Date Time Turbidity

11/14/2001 17:00:00 0337

11/15/2001 21:30:00 0678

e) 11/24/01 23:00:00 - 11/27/01 14:00:00, salinity values unusually low. Likely caused by rain event. Data were not removed.

f) DO starts to decline on 11/24/02 23:00:00 and stays at 0.5 mg/L for 12 hours,

then slowly recovers. The low DO occurred following a rainfall event.

Data were

retained.

December 2001

OS

a) 12/01/2001 00:00:00 - 12/18/2001 13:30:00, Time values were offset by + 40 sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

b) 11/22 through 12/12, minimum water depth is higher than usual during this time, perhaps due to possible sedimentation at the mouth of the slough, however there is no ancillary data to back this up.

c) The following anomalously high turbidity values were recorded. A probable cause for these values was not found so data were not removed.

Date	Time	Turbidity
12/26/2001	14:00:00	0126

MM

a) 12/01/2001 16:00:00 - 12/18/2001 14:00:00, Time values were offset by + 40 sec. Data were corrected to nearest 00:00 or 00:30 minute interval.

b) On the following dates and times slightly negative depth values were recorded. Data were not removed.

12/01/2001	19:30:00
12/05/2001	22:00:00 - 23:30:00
12/06/2001	00:00:00
12/06/2001	20:30:00 - 23:30:00
12/07/2001	00:00:00 - 00:30:00
12/07/2001	20:30:00 - 23:30:00
12/08/2001	00:00:00 - 01:00:00
12/08/2001	11:30:00
12/08/2001	20:30:00 - 22:00:00
12/09/2001	00:00:00 - 01:00:00
12/12/2001	02:00:00
12/12/2001	16:30:00 - 17:30:00
12/12/2001	23:30:00 - 12/13/2001 03:30:00
12/13/2001	16:00:00 - 18:30:00
12/14/2001	00:30:00 - 03:30:00
12/15/2001	02:30:00 - 03:00:00
12/15/2001	17:00:00 - 17:30:00
12/15/2001	19:30:00 - 20:00:00
12/16/2001	02:00:00 - 04:30:00
12/16/2001	16:00:00 - 16:30:00
12/16/2001	19:00:00 - 21:30:00
12/17/2001	02:00:00 - 05:00:00
12/17/2001	16:00:00 - 16:30:00
12/18/2001	03:30:00 - 05:00:00
12/21/2001	20:30:00 - 23:30:00
12/22/2001	19:30:00 - 23:30:00
12/23/2001	00:00:00 - 01:30:00
12/23/2001	12:00:00 - 14:00:00
12/24/2001	22:00:00 - 23:30:00
12/25/2001	00:00:00 - 02:00:00
12/25/2001	14:00:00 - 16:00:00
12/26/2001	16:00:00
12/27/2001	01:00:00
12/27/2001	15:30:00 - 18:00:00

12/28/2001 16:00:00 - 18:00:00
 12/29/2001 16:30:00 - 19:00:00
 12/30/2001 17:00:00 - 19:30:00
 12/31/2001 02:30:00 - 03:30:00
 12/31/2001 17:30:00 - 20:30:00

c) The following anomalously high turbidity values were recorded. A probable cause for these values was not found so data were not removed.

Date	Time	Turbidity
12/01/2001	16:00:00	0121
12/02/2001	07:00:00	0110
12/02/2001	07:30:00	0107
12/02/2001	08:00:00	0121
12/02/2001	08:30:00	0123
12/02/2001	15:00:00	0109
12/03/2001	08:00:00	0138
12/03/2001	08:30:00	0120
12/03/2001	09:00:00	0260
12/03/2001	17:00:00	0103
12/09/2001	15:00:00	0225
12/11/2001	18:30:00	0101
12/12/2001	14:00:00	0113
12/13/2001	13:30:00	0150
12/14/2001	08:30:00	1502
12/14/2001	14:30:00	0263
12/26/2001	14:30:00	0315
12/27/2001	18:00:00	0128

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:

np = no probe installed
 nc = no calibration done

OS	Date	SpCond Std(50)	DO% std(100)	Depth std(0)	pH std(7)	Turb std(0)
	03/09/2001	050.22	095.0	0.003	7.01	-4.1
	03/30/2001	049.99	093.2	-1.570	7.01	nc
	04/18/2001	049.90	099.7	0.000	7.05	-4.9
	05/07/2001	050.00	097.8	0.004	np	0.0
	05/30/2001	050.02	102.8	-0.107	np	0.0

06/26/2001	050.31	097.6	-0.253	np	0.1
07/11/2001	049.59	100.7	-0.126	6.99	0.1
07/26/2001	047.74	098.0	-0.009	6.97	0.9
08/09/2001	049.67	099.9	0.002	7.03	-1.5
08/23/2001	049.99	099.3	-0.001	7.05	-3.1
09/06/2001	050.01	097.9	0.002	6.98	-0.1
10/02/2001	050.20	101.2	0.003	6.99	-0.1
10/15/2001	049.98	099.6	0.002	7.01	0.0
11/01/2001	049.99	105.2	-0.789	7.11	-0.9
11/27/2001	050.55	115.2	0.001	6.99	1.1
12/18/2001	050.31	101.1	0.001	6.86	-0.3
01/09/2002	050.15	098.3	-0.001	6.99	0.0

MM

Date	SpCond Std(50)	DO% std(100)	Depth std(0)	pH std(7)	Turb std(0)
04/18/2001	049.10	138.3	-0.001	7.00	-0.1
05/07/2001	048.73	107.6	0.000	7.00	-0.5
05/30/2001	049.97	092.0	0.000	6.99	0.1
06/26/2001	046.24	190.0	-0.001	6.99	9.2
07/11/2001	049.65	091.0	0.001	np	0.0
07/26/2001	049.75	071.0	0.000	np	-0.8
08/09/2001	048.86	104.0	0.002	7.28	-0.1
08/23/2001	049.73	096.1	-0.001	7.09	-7.1
09/06/2001	049.94	102.3	0.002	6.99	0.0
10/02/2001	049.60	109.0	-0.001	7.02	0.2
10/15/2001	049.98	096.1	-0.001	7.01	0.1
11/01/2001	049.88	102.3	0.002	7.02	0.3
11/27/2001	050.15	105.0	0.000	7.06	0.3
12/19/2001	050.23	105.0	0.002	7.04	0.3
01/09/2002	050.02	102.7	0.001	7.01	0.1