

Tijuana River Estuary (TJR) NERR Site Water Quality Metadata
January to December 1997
Last Revised April 24, 2002

I. Data Set and Research Descriptors

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2. Entry Verification:

The data are uploaded directly from the YSI model 6000upg dataloggers to the YSI PC6000 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 PC6000 plotting software. The resulting plot is printed out and saved in a folder named "datalogger deployment log". The .csv file is imported into Excel 5.0 for Macintosh and is edited and formatted.

The tails of each sampling period are deleted and any suspect data is identified with the aid of Excel CDMO 5.0 macros and are evaluated and dealt with according to CDMO Operations Manual (ver.3.0) guidelines. The parameter

columns are checked for proper order 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 combined into a 1 month excel file. Any dates and times when data was not collected are inserted and the reason for the missing data (from the deployment log) are entered directly into the excel file along with the editing information from the two week files. 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 deployment of dataloggers. Initially two stations were set up; the "treatment" station was set up close to the mouth on the Southern end of the Oneonta Slough. It was thought that this location would be best suited for monitoring changes caused by sewage outflow events. The "control" station was set up on the northern end of Oneonta Slough. 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. Recently, however, a new channel was dredged in the northeast section of the

estuary to increase tidal flushing. This restoration site named the "Tidal Linkage" will be the new location of the "treatment" site. Comparisons will be made with the natural site as the hydrology of the constructed treatment site changes over time.

4. Research Methods

A 4 inch diameter PVC pipe was strapped to a 6 ft length of steel fencing post and driven into the sediment until refusal prior to datalogger deployment in the center of the channel. The bottom of the pipe is raised 1 foot off of the channel bottom and is capped. Multiple 1.5 inch holes have been drilled in the bottom cap and sides to permit unrestricted flow to the sensors. The datalogger units are then placed into and rest on the bottom of the tubes during deployment. The sampling period is two weeks with measurements being taken every 30 minutes. Measurements for specific conductivity, salinity, dissolved oxygen (percent saturation), dissolved oxygen (mg/l), temperature, turbidity and water depth are recorded. At the end of each two week period, the YSI data logger unit is replaced by another YSI datalogger unit and brought back to the laboratory for downloading, cleaning and recalibration. 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, 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 3.0.

In May 1997 sampling at the "Tidal Linkage" station began. All deployment, calibration and QA/QC procedures were followed exactly as they are at the Oneonta Slough station.

Additionally, on May 23, 1997 plastic mesh sleeves were placed on sondes at both stations to inhibit crabs from interfering with the sensors. Please note that all depth data was recorded using the deep depth probe.

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

- a) Orientation of site: Datalogger 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.
- 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.
- g) Site location: 32° 34' 4.8"N, 117° 07' 52.3"W

Specific Site Characteristics: The Tidal Linkage

- a) Orientation of site: Datalogger is located in the middle of the newly constructed channel. The channel runs Northwest to Southwest and is located adjacent to the visitor's center in the northeastern section of the reserve.
- b) The elevation of the channel bottom is approximately 0.9m below Mean Sea Level.
- c) Channel width: Approximately 5 meters.
- d) Bottom type: mostly sand in the area of the datalogger with a change to mostly mud at either end of the channel.
- e) Site location: 32° 34' 24.9"N, 117° 07' 32.2"W

6. Data Collection period

Oneonta Slough data collection began July 1, 1995. Multiple instrument problems (defective sensors, software bugs, exploding batteries) and subsequent repairs and upgrades delayed data processing and compromised some of the data acquired between July 1995 and January 1, 1996. These data are currently being evaluated and will be posted if found to be valid. Sampling at the Tidal Linkage began in May 1997. Sampling is ongoing.

7. Associated researchers and projects

A computer animated salinity model is being developed by Phil Williams Assoc. in collaboration with the Pacific Estuarine Research Laboratory (PERL) at San Diego State University (SDSU). The datalogger data will be used to adjust and validate the model. The salinity data and dilution model will be used to determine the distribution and dilution of human pathogens resulting from sewage spills into Tijuana Estuary. The pathogen study is being conducted by Dr. Rick Gersberg, SDSU Grad. School of Public Health and PERL. The newly constructed channel is the site of research being conducted by PERL which focuses on methods for increasing the success of saltmarsh revegetation projects.

II. Physical Structure Descriptors

8. Variable sequence, column format, range of measurements, units, resolution, accuracy:

YSI 6000upg datalogger:

Variable Name	Range of Measurements (units)	Resolution
Accuracy		
Date	1-12,1-31,00-99 (Mo,Day,Yr)	1 month,1 day, 1 year
NA		
Time	0-24,0-60,0-60 (Hr,Min,Sec)	1 hour, 1 minute, 1 second
NA		
Temp	-5 TO 45 (C)	0.01 C
+/-0.15C		
SpCond	0-100 (mS/cm)	0.01 mS/cm
(.5% of reading +.001 mS/cm)		
+/-		

Sal	0-70 parts per thousand (ppt)	0.01 ppt	
	+/-1.0% of reading or 0.1 ppt		
(whichever is greater)			
DO	0-200 (% air Saturation)	0.1% @air saturation	
	+/-2.0%@air sat.		
DO	200-500 (% air saturation)	0.1% @air saturation	
	+/-6%@air sat.		
DO	0-20 (mg/l)	0.01 mg/l	+/-0.2
mg/l			
DO	20-50 (mg/l)	0.01 mg/l	+/-
0.6			
mg/l			
Depth	0-152 (m)	0.001m	+/-0.3 m
pH	2-14 units	0.01 units	+/-
0.2			
units			
Turbidity	0-1000 (NTU)	0.1 NTU	
	+/-5% of reading		
			or 2 NTU
(whichever is greater)			

data columns are separated by tabs

9. Coded variable indicator and variable code definitions
 Site definitions: OS = Oneonta Slough TL = Tidal Linkage

10. Data anomalies (suspect data):

January 1997

Oneonta Sough

a) 01/03 (11:30) - 01/15 (12:30), pH readings show larger than usual drift over course

of deployment. No reason found, data were not removed.

b) Negative turbidity values were recorded - believed to be valid "roll overs"

caused by storm

events, readings were not removed:

Date	Time	Turbidity
01/12/97	23:30:00	-718.6
01/13/97	11:00:00	-645.7
01/13/97	11:30:00	-646.2
01/13/97	12:00:00	-646.7
01/13/97	12:30:00	-647
01/13/97	13:00:00	-647
01/13/97	15:00:00	-671.1
01/14/97	00:30:00	-647.5
01/14/97	01:00:00	-648.4
01/14/97	01:30:00	-648.5
01/26/97	08:30:00	-80.4

February 1997

Oneonta Slough

a) High Turbidity values which were not consistent with the overall data were

recorded as follows, reason could not determined

so data were not removed:

Date	Time	Turb
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02/05/97	10:30:00	0123
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02/05/97	11:30:00	0481
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02/08/97	09:00:00	0128
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b) 02/12 (11:30) - 02/27 (15:30), All paremeters - unit was deployed with calibration cup on; data deployed

March 1997

Oneonta Slough

a) High Turbidity values which were not consistent with the overall data were

recorded as follows, reason could not determined

so data were not removed:

Date	Time	Turb
------	------	------

03/10/97	09:30:00	0145
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03/10/97	10:00:00	0105
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03/10/97	10:30:00	0106
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April 1997

Oneonta Slough

a) 04/10 (14:30) - 04/24(16:30), logging interval was at 15 min instead of 30

min, data kept as recorded

b) 04/10 (14:30) - 04/30(23:00), Time adjusted to PST from PDT by subtracting

1hr

c) 04/10 (14:30) - 04/24 (10:00), pH unusually low and deleted- reason could not be

determined although post calibration OK

d) Negative turbidity values were recorded. Data were not removed:

Date	Time	Turb
------	------	------

04/13/97	06:30:00	-015.5
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04/14/97	08:15:00-08:30:00	-753.9
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04/17/97	07:00:00	-1111.7
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04/20/97	19:15:00	
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e) High Turbidity values which were not consistent with the overall data were

recorded as follows, reason could not determined. Data were not removed:

Date	Time	Turb
------	------	------

04/29/97	17:00:00	151.2
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04/29/97	21:30:00	194.7
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f) 04/03/97 19:30 - 04/08/97 15:00:00 DO% and DOmg/L missing - suspected

puncture in membrane. Data were removed.

May 1997

Oneonta Slough

a) Time values adjusted to Pacific Standard Time (PST) from Pacific Daylight

Time (PDT) by subtracting 1 hr

b) A High Turbidity value which was not consistent with the overall data was

recorded as follows, reason could not determined. Data was not removed

Date Time Turb

05/01/97 14:30:00 483

c) 05/07 (14:30) - 05/20 (12:30), DO% and DOmg/l deleted- puncture in membrane.

Data were removed.

d) A negative turbidity value was recorded. Reason could not be determined, data

was not removed

Date Time Turb

05/09/97 03:30:00 -0.6

e) 05/17 (10:30) - 05/20 (12:30), Turbidity deleted - crab caught in wiper. Data

were removed.

June 1997

Oneonta Slough

a) Time values adjusted to Pacific Standard Time (PST) from Pacific Daylight

time (PDT) by subtracting 1 hr

b) 06/18 (9:30) - 06/29 (10:00), DO% and DOmg removed - a puncture in membrane

occured prior to deployment

Tidal Linkage

a) 06/05(13:00)-06/30(23:30), Time values adjusted to Pacific Standard Time

(PST) from Pacific Daylight Time (PDT) by subtracting 1hr.

July 1997

Oneonta Slough

a) Time values adjusted to Pacific Standard Time (PST) from Pacific Daylight

Time (PDT) by subtracting 1 hr

b) 07/18 (11:30) - 7/31 (12:00) DO% and DOmg/l removed - membrane punctured

during deployment.

c) Slightly negative turbidity values were recorded as follows, believed to be

caused by calibration errors:

Date Time Turb

07/17/97 08:00:00 -0001

07/17/97 08:30:00 -0001

07/18/97 08:00:00 -0001

07/18/97 21:00:00 -0001

07/19/97	09:30:00	-0001
07/19/97	10:00:00	-0001
07/19/97	21:30:00	-0001
07/20/97	10:30:00	-0001
07/20/97	22:30:00	-0001
07/21/97	11:00:00	-0001
07/22/97	12:00:00	-0001
07/23/97	00:00:00	-0001
07/23/97	13:00:00	-0001
07/24/97	00:30:00	-0001
07/24/97	13:30:00	-0001
07/26/97	16:00:00	-0001
07/27/97	17:00:00	-0001
07/28/97	10:00:00	-0077
07/29/97	07:00:00	-0001
07/29/97	07:30:00	-0001
07/30/97	07:30:00	-0001
07/30/97	08:30:00	-0001
07/31/97	12:00:00	-0003

Tidal Linkage

- a) 07/19(09:00)-07/31(11:30),pH shows anomalous downward drift, probe was badly fouled
- b) Time values adjusted to Pacific Standard Time (PST) from Pacific Daylight Time (PDT) by subtracting 1hr.

August 1997

Oneonta Slough

- a) Time values adjusted to Pacific Standard Time (PST) from Pacific Daylight time (PDT) by subtracting 1 hr
- b) 08/01(15:00)-08/13(12:30),logging interval was offset by -5min23sec, data was corrected to nearest half hour
- c) 08/14(21:30)-08/16(17:30),DO% and DO mg/l readings abnormally high (>200%), reason not determined data not removed
- d) 08/15/97 1300 to 08/17/97 2130, DO% and DO mg/L deleted due to extremely high readings possibly due to membrane puncture

Tidal Linkage

- a) Time values adjusted to Pacific Standard Time (PST) from Pacific Daylight Time (PDT) by subtracting 1hr.
- b) 08/01(15:00)-08/13(11:00),depth values adjusted to compensate for incorrect calibration by subtracting .179m
- c) 08/01(15:00)-08/13(11:00),pH - heavy biofouling caused abnormal drift and loss of sensor sensitivity, data were removed

d) 08/17(22:00)-08/28(13:00),Turbidity - wiper not functioning properly.
Data
were removed.

e) The following negative depth values were recorded was recorded: data
was not
removed.

Date	Time	Depth
08/26/97	02:30:00	-0.01
08/27/97	03:30:00	-0.01

September 1997

Oneonta Slough

a) Time values adjusted to Pacific Standard Time (PST) from Pacific
Daylight
time (PDT) by subtracting 1 hr

b) Turbidity spikes/negative values

Date	Time	Turb
09/13/97	03:30:00	-0001
09/13/97	04:00:00	-0001
09/13/97	04:30:00	-0001
09/13/97	05:00:00	-0001
09/13/97	06:00:00	-0001
09/13/97	06:30:00	-0001
09/13/97	07:00:00	-0001
09/13/97	07:30:00	-0002
09/13/97	08:00:00	-0002
09/13/97	08:30:00	-0001
09/13/97	20:00:00	-0001
09/14/97	02:30:00	-0001
09/14/97	03:00:00	-0001
09/14/97	03:30:00	-0001
09/14/97	08:30:00	-0002
09/15/97	04:00:00	-0001
09/15/97	09:00:00	-0002
09/15/97	21:30:00	-0001
09/16/97	04:30:00	-0001
09/16/97	10:00:00	-0002
09/16/97	10:30:00	-0001
09/16/97	22:00:00	-0001
09/17/97	10:30:00	-0002
09/17/97	22:30:00	-0001
09/17/97	23:00:00	-0001
09/18/97	11:00:00	-0001
09/18/97	23:00:00	-0001
09/18/97	23:30:00	-0003
09/19/97	00:00:00	-0002
09/19/97	00:30:00	-0001
09/19/97	11:30:00	-0001
09/19/97	12:00:00	-0002
09/19/97	23:30:00	-0001
09/20/97	00:00:00	-0002
09/20/97	00:30:00	-0001
09/20/97	12:00:00	-0001
09/20/97	12:30:00	-0002

09/20/97	23:30:00	-0001
09/21/97	00:00:00	-0001
09/21/97	00:30:00	-0001
09/21/97	01:00:00	-0002
09/21/97	01:30:00	-0002
09/21/97	02:00:00	-0001
09/21/97	09:30:00	-0001
09/21/97	12:30:00	-0001
09/21/97	13:00:00	-0001
09/21/97	13:30:00	-0002
09/21/97	22:30:00	-0001
09/21/97	23:30:00	-0001
09/22/97	00:00:00	-0001
09/22/97	01:00:00	-0001
09/22/97	01:30:00	-0002
09/22/97	02:00:00	-0002
09/22/97	02:30:00	-0002
09/22/97	03:00:00	-0002
09/22/97	03:30:00	-0002
09/22/97	04:00:00	-0001
09/22/97	09:00:00	-0001
09/22/97	10:30:00	-0001
09/22/97	11:00:00	-0001
09/22/97	13:30:00	-0001
09/22/97	14:00:00	-0002
09/22/97	14:30:00	-0002
09/23/97	03:00:00	-0002
09/23/97	03:30:00	-0001
09/23/97	04:00:00	-0001
09/23/97	04:30:00	-0002
09/23/97	05:00:00	-0002
09/23/97	05:30:00	-0002
09/23/97	06:00:00	-0001
09/23/97	08:30:00	-0001
09/23/97	09:00:00	-0001
09/23/97	09:30:00	-0002
09/23/97	10:00:00	-0001
09/23/97	10:30:00	-0001
09/23/97	12:00:00	-0001
09/23/97	12:30:00	-0001
09/23/97	13:00:00	-0001
09/23/97	13:30:00	-0002
09/23/97	14:00:00	-0001
09/23/97	14:30:00	-0001
09/23/97	15:00:00	-0001
09/23/97	15:30:00	-0002
09/23/97	16:00:00	-0002
09/23/97	16:30:00	-0001
09/24/97	02:30:00	-0001
09/24/97	04:00:00	-0001
09/24/97	04:30:00	-0001
09/24/97	05:00:00	-0001
09/24/97	05:30:00	-0001
09/24/97	06:00:00	-0002

09/24/97	06:30:00	-0002
09/24/97	07:00:00	-0001
09/24/97	07:30:00	-0001
09/24/97	10:00:00	-0001
09/24/97	11:30:00	-0001
09/24/97	12:00:00	-0001
09/24/97	14:00:00	-0001
09/24/97	14:30:00	-0001
09/24/97	16:00:00	-0001
09/24/97	16:30:00	-0001
09/24/97	17:00:00	-0002
09/24/97	17:30:00	-0001
09/25/97	02:00:00	-0001
09/25/97	06:30:00	-0001
09/25/97	07:00:00	-0002
09/25/97	07:30:00	-0001
09/26/97	07:30:00	-0001
09/26/97	19:00:00	-0001
09/27/97	13:30:00	-0001
09/27/97	14:00:00	-0001
09/27/97	20:00:00	-0002
09/28/97	02:30:00	-0001
09/28/97	09:00:00	-0001
09/28/97	14:00:00	-0001
09/28/97	14:30:00	-0001
09/28/97	15:00:00	-0001
09/28/97	20:30:00	-0002
09/28/97	21:00:00	-0001
09/29/97	03:00:00	-0001
09/29/97	03:30:00	-0002
09/29/97	08:30:00	-0001
09/29/97	09:00:00	-0002
09/29/97	09:30:00	-0002
09/29/97	14:30:00	-0001

October 1997
 Oneonta Slough
 No anomalous data.

Tidal Linkage

a) 10/27(16:30), Turbidity spike not consistent with overall data was was recorded. Data were not removed

b) The following negative turbidity values were recorded and not removed:

Date	Time	Turb
10/24/97	07:00:00	-0001
10/24/97	07:30:00	-0001
10/24/97	08:30:00-09:30:00	-0001
10/25/97	07:00:00	-0001
10/26/97	10:00:00	-0001
10/27/97	07:30:00-08:00:00	-0001
10/28/97	08:30:00	-0001
10/29/97	08:30:00	-0001

November 1997

Oneonta Slough
No anomalous data

Tidal Linkage

a) 11/26(12:30)-11/30(23:30), Depth - values abnormally high. Suspected that

calibration was not performed at sea level before deployment. Data were removed

b) The following negative depth values were recorded but not removed:

Date	Time	Depth
11/21/97	22:30:00	-0.01
11/21/97	23:00:00	-0.01
11/21/97	23:30:00	-0.01
11/22/97	00:00:00	-0.02
11/22/97	00:30:00	-0.02

c) Slightly negative turbidity values were recorded. Data were not removed:

Date	Time	Turb
11/02/97	11:30:00	-0001
11/02/97	12:30:00	-0001
11/08/97	01:00:00	-0003
11/26/97	20:00:00	-0001
11/26/97	20:30:00	-0001
11/27/97	20:30:00	-0001
11/27/97	21:00:00	-0001
11/28/97	16:30:00	-0001
11/28/97	17:00:00	-0001
11/28/97	21:30:00	-0001
11/29/97	17:00:00	-0001
11/29/97	17:30:00	-0001
11/29/97	18:00:00	-0001
11/29/97	20:00:00	-0001
11/29/97	21:30:00	-0001
11/29/97	22:00:00	-0001
11/29/97	22:30:00	-0001
11/29/97	23:00:00	-0001

d) A large negative turbidity reading was recorded. Reason could not be determined.

Date	Time	Turb
11/30/97	20:30:00	-0163

December 1997

Oneonta Slough

a) Higher than average turbidity beginning 12/06 probably caused by storm events. Data were not removed

b) The following negative turbidity spikes were recorded: Data were not removed

Date	Time	Turb
12/08/97	15:00:00	-0001
12/08/97	15:30:00	-0001
12/08/97	16:00:00	-0001
12/08/97	16:30:00	-0002
12/08/97	17:00:00	-0002

12/08/97	17:30:00	-0002
12/08/97	18:00:00	-0002
12/08/97	18:30:00	-0001
12/08/97	19:00:00	-0001
12/08/97	19:30:00	-0001
12/08/97	20:00:00	-0001

Tidal Linkage

a) 12/01(00:00)-12/10(17:00), Depth values abnormally high. Suspected that depth

calibration at site was not performed. Data were removed.

b) The following negative depth values were recorded: Data were not removed.

Date	Time	Depth
12/18/97	19:30:00	-0.02
12/18/97	20:00:00	-0.03
12/18/97	20:30:00	-0.03
12/18/97	21:00:00	-0.02
12/20/97	22:30:00	-0.01

c) High positive turbidity readings were recorded which were not consistent with

the overall data. Data were not removed.

Date	Time	Turb
12/20/97	17:00:00	0437
12/29/97	16:00:00	0955

d) Negative turbidity readings were recorded. Reason not determined. Data were

not removed.

Date	Time	Turb
12/01/97	19:30:00	-0001
12/01/97	23:00:00	-0001
12/01/97	23:30:00	-0001
12/03/97	00:00:00	-0001
12/03/97	00:30:00	-0001
12/03/97	01:00:00	-0001
12/03/97	01:30:00	-0001
12/03/97	11:30:00	-0001
12/03/97	12:00:00	-0001
12/04/97	00:00:00	-0001
12/04/97	00:30:00	-0001
12/04/97	01:00:00	-0001
12/04/97	01:30:00	-0001
12/04/97	02:00:00	-0001
12/04/97	12:00:00	-0001
12/04/97	20:30:00	-0069
12/05/97	01:00:00	-0001
12/05/97	02:00:00	-0001
12/05/97	02:30:00	-0001
12/05/97	13:30:00	-0001
12/06/97	04:00:00	-0001
12/07/97	01:00:00	-0136
12/07/97	01:30:00	-0002

12/07/97	02:00:00	-0002
12/07/97	02:30:00	-0284
12/07/97	03:00:00	-0158
12/07/97	03:30:00	-0082
12/07/97	04:00:00	-0158
12/07/97	04:30:00	-0064
12/07/97	05:00:00	-0105
12/07/97	14:30:00	-0027
12/07/97	15:00:00	-0174
12/07/97	15:30:00	-0139
12/07/97	16:30:00	-0126
12/07/97	17:00:00	-0064
12/07/97	18:00:00	-0001
12/07/97	18:30:00	-0044
12/07/97	19:00:00	-0025
12/07/97	19:30:00	-0028
12/07/97	20:00:00	-0032
12/08/97	01:30:00	-0003
12/08/97	02:00:00	-0341
12/08/97	02:30:00	-0002
12/08/97	03:00:00	-0121
12/08/97	03:30:00	-0057
12/08/97	09:00:00	-0019
12/08/97	16:00:00	-0002
12/08/97	16:30:00	-0002
12/08/97	17:00:00	-0557
12/08/97	17:30:00	-0574
12/08/97	18:30:00	-0054
12/08/97	20:00:00	-0018
12/08/97	20:30:00	-0001
12/09/97	02:30:00	-0130
12/09/97	03:00:00	-0454
12/09/97	03:30:00	-0030
12/09/97	04:00:00	-0094
12/29/97	16:30:00	-0003
12/29/97	17:00:00	-0003
12/29/97	17:30:00	-0003
12/29/97	18:00:00	-0003
12/29/97	18:30:00	-0003
12/29/97	19:00:00	-0003
12/29/97	19:30:00	-0003
12/29/97	20:00:00	-0003
12/29/97	20:30:00	-0003
12/29/97	21:00:00	-0003
12/29/97	21:30:00	-0003
12/29/97	22:00:00	-0003
12/31/97	17:30:00	-0023
12/31/97	18:00:00	-0090
12/31/97	18:30:00	-0139
12/31/97	19:00:00	-0184
12/31/97	19:30:00	-0212
12/31/97	20:00:00	-0228
12/31/97	20:30:00	-0242
12/31/97	21:00:00	-0245

12/31/97 21:30:00 -0245
12/31/97 22:00:00 -0087

11. Missing Data:

January 1997

Oneonta Slough

01/01 (00:00) - 01/03 (11:00), Turbidity missing - no probe installed

01/31 (10:00), All parameters missing - maintenance and calibration

01/31(10:30)-01/31(23:30), pH missing - no probe installed

February 1997

Oneonta Slough

02/01 (00:00) - 02/12 (11:00), pH missing - no probe installed

02/12 (11:30) - 02/27 (15:30), All parameters deleted - unit was deployed
with

calibration cup on

March 1997

Oneonta Slough

03/12 (16:00) -03/13 (11:30), All parameters missing - maintenance and
calibration

03/26 (15:00) - 03/27 (15:00), All parameters missing - maintenance

April 1997

Oneonta Slough

04/03 (19:30) - 04/08 (15:00), DO% and DOmg/l deleted - suspected
puncture in
membrane

04/08 (15:30) - 04/10 (14:00), All parameters missing - maintenance and
calibration

04/10 (14:30) - 04/24 (10:00), pH unusually low and deleted- reason could
not be

determined although post calibration OK

04/24 (09:15) - 04/25 (15:00), All parameters missing - maintenance and
calibration

04/25 (15:30) - 04/30 (23:30), pH missing - no probe installed

May 1997

Oneonta Slough

05/01 (00:00) - 05/06 (15:30), pH missing - no probe installed.

05/06 (16:00) - 05/07 (14:00), All parameters missing - maintenance and
calibration.

05/07 (14:30) - 05/20 (12:30), DO% and DOmg/l deleted- puncture in
membrane

05/07 (14:30) - 05/20 (12:30), pH missing - no probe installed

05/17 (10:30) - 05/20 (12:30), Turbidity deleted - crab caught in wiper

05/20 (13:00) - 05/23 (13:30), All parameters missing - maintenance and
calibration.

Tidal Linkage

05/01(00:00)-05/23(15:00), All parameters missing - first deployment at
station

began 5/23 at 15:30

June 1997

Oneonta Slough

06/04 (13:00) - 06/05 (13:00), All parameters missing - maintenance and calibration

06/05 (13:30) - 06/17 (14:30), Turbidity missing - no probe installed

06/17 (15:00) - 06/18 (09:00), All parameters missing - maintenance and calibration

06/18 (09:30) - 06/29 (10:00), DO% and DOmg deleted puncture in membrane, occurred prior to deployment

06/18 (09:30) - 06/29 (10:00), pH missing - probe was removed before deployment

due to internal problem in sonde

06/29 (10:30) - 06/30 (23:30), All parameters missing - one battery failed

causing logging to end prematurely

Tidal Linkage

06/04 (13:00) - 06/05 (12:30), All parameters missing - maintenance

06/05 (13:00) - 06/17 (14:00), pH missing - no probe installed

06/17 (14:30) - 06/18 (09:30), All parameters missing- maintenance

July 1997

Oneonta Slough

07/01 (00:00) - 07/02 (14:30), All parameters missing- one battery failed causing premature termination of logging

07/02 (15:00) - 07/03 (13:30), All parameters missing , maintenance and calibration

07/15 (13:00) - 07/16 (12:30), All parameters missing - maintenance

07/18 (11:30) - 07/31 (12:00), DO% and DOmg/l deleted, puncture in membrane

07/31 (12:30) - 07/31 (23:30), All parameters missing- maintenance

Tidal Linkage

07/02 (15:00) - 07/16 (13:00), All missing - maintenance

07/16 (13:30) - 07/31 (11:30), Turbidity missing- no probe installed

07/31 (12:00) - 07/31 (23:30), All parameters missing- maintenance

August 1997

Oneonta Slough

08/01 (00:00) - 08/01 (13:30), All parameters missing- maintenance and calibration

08/13 (12:00) - 08/15 (12:30), All parameters missing- maintenance and calibration

08/15/97 1300 to 08/17/97 2130, DO% and DO mg/L deleted due to extremely high

readings possibly due to membrane puncture

08/17 (22:00) - 08/28 (15:30), All parameters deleted- data removed , battery

compartment leaked

08/28 (16:00) - 08/29 (13:30), All parameters missing- maintenance and calibration

08/29 (14:00) - 08/31 (23:30), pH missing- probe removed prior to deployment -
could not calibrate using different probes

Tidal Linkage

08/01 (00:00) - 08/01 (14:30), All parameters missing- maintenance
08/01 (15:00) - 08/13 (11:00), pH deleted- heavy biofouling caused abnormal
drift and loss of sensor sensitivity, data were removed
08/01 (15:00) - 08/13 (11:00), Turbidity missing- no probe installed
08/13 (11:30) - 08/17 (21:30), All parameters missing- maintenance
08/17 (22:00) - 08/28 (13:00), Turbidity deleted- wiper not functioning properly. Data were removed.
08/28 (13:30) - 08/31 (23:30), All parameters missing- maintenance

September 1997

Oneonta Slough

09/01 (00:00) - 09/11 (10:00), All parameters deleted, water leaked into battery compartment
09/11 (10:30) - 09/12 (10:30), All parameters missing - maintenance and calibration
09/29 (15:00) - 09/30 (15:30), All parameters missing - maintenance and calibration
09/30 (16:00) - 09/30 (23:30), All parameters missing - deployment unit was washed out by storm. The sonde was sent in for service after recovery but no data was recovered from logging period.

Tidal Linkage

09/01 (00:00) - 09/11 (11:30), All parameters missing - internal error in sonde, no data logged.
09/11 (11:30) - 09/30 (15:30), All parameters missing - Deployment holder removed for redesign with a lower profile to inhibit alga wracks from interfering with deployment
09/30 (15:30) - 09/30 (23:30), All parameters missing - sonde did not log, cause could not be determined

October 1997

Oneonta Slough

10/01 (00:00)-10/31 (23:30), All parameters missing - Deployment holder and sonde washed out. reinstalled and deployed
11/14/97

Tidal Linkage

10/01 (00:00) - 10/21 (08:30), All parameters missing - Sonde did not log. Cause could not be determined
10/21 (09:00) - 10/23 (09:30), All parameters missing - maintenance and calibration.

November 1997

Oneonta Slough

11/01 (00:00) - 11/14 (16:30), All parameters missing - Deployment holder and

sonde washed out. reinstalled and deployed

11/14/97

11/14 (17:00) - 11/25 (14:00), pH and turbidity missing -could not calibrate,

probes removed before deployment

11/25 (14:30) - 11/26 (12:00), All parameters missing - maintenance and calibration

11/26 (12:30) - 11/30 (23:30), pH missing - could not calibrate probe removed

before deployment

Tidal Linkage

11/13 (15:30) - 11/14 (17:00), All parameters missing - maintenance and calibration.

11/17 (14:30), All parameters missing- sonde was removed from deployment holder

during reading, data was removed

11/25 (14:30) - 11/26 (12:00), All parameters missing - maintenance and calibration.

11/26 (12:30) - 11/30 (23:30), Depth deleted - values abnormally high. Failure

to do on site calibration suspected. Data were removed

December 1997

Oneonta Slough

12/01 (00:00) - 12/10 (13:00), pH missing - no probe installed

12/10 (13:30) - 12/12 (16:30), All parameters missing - maintenance and calibration

12/12 (17:00) - 12/30 (14:30), pH missing - no probe installed

12/30 (15:00) - 12/31 (16:30), All parameters missing - maintenance and calibration

12/31 (17:00) - 12/31 (23:30), pH and turbidity missing - no probes installed

Tidal Linkage

12/01 (00:00) - 12/10 (17:00), Depth values abnormally high. Failure to do on

site calibration suspected. Data were removed.

12/10 (17:30) - 12/12 (14:00), All parameters missing - maintenance

12/30 (14:30) - 12/31 (16:00), All parameters missing - maintenance