QA/QC Log: Dog Island, 2003

Key to Log:

File Name: Name of excel files containing the data for that month. File names have two or three parts: 1) the two-letter site abbreviation (GJ, HB, BA, etc.), 2) the year and month (ie. -0201), and 3) the nature of the file ("-raw" contains the raw, unaltered data; "-QAQC" contains the quality controlled data set as well as all corrections; the file name that ends with the year and month is the quality controlled file containing only the corrected and finalized data—this is the file sent to the archive)

Deployments: Number of different sondes that recorded data during the month and the periods of dates/times of each deployment.

Condition of Sonde: The post-deployment condition of each sonde deployed during the month. This includes information on fouling, equipment failures and whether post-deployment checks were performed.

Removed Data: Tabulation of all data points removed from a given month. "Trimming on ends of data sets" is a record of all data points removed from either the beginning or the end of the different files in order to create a seamless monthly record (most points removed here were data not recorded in the water, but rather, were point recorded prior to deployment or following retrieval); "Removal of bad data" is a record of data deemed to be of low quality (for example, data out of range of instrument, instrument or probe failures, etc… See Word file "QAQCGuidelines.doc" for criteria used). Table columns give the parameter values deleted, the reason for the deletion (see abbreviations) and the dates and times of points deleted.

Corrected data: This is a record of all data points that were corrected. This includes corrections due to instrument drift, fouling, incorrect instrument calibration, etc. Included are probe readings in the standard pre- and post-deployment and excel formulae used to calculate corrected values. Inability to correct data due to lack of proper post-deployment check procedures or substandard sonde condition (eg. heavily fouled) may also be noted here.

Missing data: This is a record of all missing data points not due to the QA/QC process (ie. not accounted for in "Removal of bad data"). A common cause for this missing data is a lag time between the retrieval of one sonde and the deployment of the second sonde or failure of the instrument to log data at a given time.

Problems and Anomalies: This is a record of troublesome trends or data points not removed from data set, but that could prove a problem in interpretation. Examples include sudden jumps in the data when sondes are changed out (reflecting drift in retrieved sonde or a lack of standardization between the two sondes). Notes regarding reliability of data (whether or not it is or may be faulty) may also be found here. **ALWAYS read this section before interpreting data.**

Abbreviations:

IF	=	Instrument Failure: Data logger returned values of –6999
PF	=	Probe Failure: Probe measuring individual parameter apparently malfunctioned.
ADL	=	Above Detection Limit: data logger returned a data point that is above the detection limit of the probe
BDL	=	Below Detection Limit: data logger returned a data point that is above the detection limit of the probe
SND	=	Sonde Not Deployed: evidence indicates that sonde was not in the water on-site when data was recorded
FOUL	=	Fouled: evidence indicates sonde was not functioning properly due to severe fouling
EXP	=	Exposed: Sonde was exposed to air due to low water level or some disturbance.
NMD	=	Next month's data: trimmed data belonged to next month
PMD	=	Previous month's data: trimmed data belonged to previous month

General Notes on Reliability of Data:

1) In general, measurements of temperature and depth are very reliable unless otherwise noted in "Problems and Anomalies".

2) Salinity is typically reliable, but this data can be compromised by bad calibrations and fouling. These effects are most obvious as sudden discontinuities in the trend when sondes are changed. If the discontinuity that occurs with a sonde change is more than +/- 2 ppt in magnitude, the discontinuity is noted as a faulty trend.

3) Measurements of dissolved oxygen are often not reliable. Typically, oxygen measurements taken soon after a sonde is deployed are reliable, but reliability decreases during the deployment period due to instrument drift and fouling. The most unreliable oxygen data is that collected near the time the sonde is retrieved. ALWAYS read "Problems and Anomalies" before interpreting dissolved oxygen! Dissolved oxygen discontinuities of +/- 25% or more coincident with sonde changes are noted as faulty if they do not fall within the actual rate of change occurring before and after the sonde change.

4) The reliability of turbidity measurements is much like that of oxygen. Turbidity measurements are best early and worst late in the deployment period.

5) The reliability of chlorophyll measurements is unknown. We do not currently know what the measurements mean in a biological context. Confirmation studies are underway.

6) If the word "**faulty**" appears regarding a trend or data period, the data should be considered highly unreliable. Do not use this data (if it wasn't deleted altogether) for anything but a general guideline to potential conditions. This designation is only used regarding data known to be of very poor quality.

7) If the phrase "**may be faulty**" appears regarding a trend or data period, the data may not be reliable. Typically, the data appears to be of reasonably good quality and probably does reflect the real trends in environmental condition, but very strict interpretation is not recommended.

8) If a proper post-deployment check was not performed, reliability of all data for that deployment period must be considered suspect.

JANUARY--2003

Files: Data: DI-0301-raw, DI-0301-QAQC, DI-0301

Deployments: ();

Condition of Sondes:

Removed Data:

Parameter(s)	Problem	Data Points

Corrected Data:

Specific Conductivity:
standard, probe
Formula:
Salinity

Oxygen:
pre-deployment O2:
post-deployment O2:
standard 100, probe ; O2 correction =
Formula:
Conversion for O2 concentration:

Turbidity:
standard 0, probe; standard 100, probe
Formula:

Chlorophyll:
standard 0.0, probe
Formula:

Missing Data:

Problems and Anomalies:

FEBRUARY--2003

Files: Data: DI-0302-raw, DI-0302-QAQC, DI-0302

Deployments: ();

Condition of Sondes:

Removed Data:

Parameter(s)	Problem	Data Points

Corrected Data:

Specific Conductivity:
standard, probe
Formula:
Salinity

Oxygen:
pre-deployment O2:
post-deployment O2:
standard 100, probe ; O2 correction =
Formula:
Conversion for O2 concentration:

Turbidity:
standard 0, probe; standard 100, probe
Formula:

Chlorophyll:
standard 0.0, probe
Formula:

Missing Data:

Problems and Anomalies:

MARCH--2003
Files: Data: DI-0303-raw, DI-0303-QAQC, DI-0303

Deployments: ();

Condition of Sondes:

Removed Data:

Parameter(s)	Problem	Data Points

Corrected Data:

Specific Conductivity:
standard, probe
Formula:
Salinity
Oxygen:
pre-deployment O2:
post-deployment O2:
standard 100, probe ; O2 correction =
Formula:
Conversion for O2 concentration:

Turbidity:
standard 0, probe; standard 100, probe
Formula:
Chlorophyll:
standard 0.0, probe
Formula:

Missing Data:

Problems and Anomalies:

APRIL--2003

Files: Data: DI-0304-raw, DI-0304-QAQC, DI-0304

Deployments: ();

Condition of Sondes:

Removed Data:

Parameter(s)	Problem	Data Points

Corrected Data:

Specific Conductivity:
standard, probe
Formula:
Salinity

Oxygen:
pre-deployment O2:
post-deployment O2:
standard 100, probe ; O2 correction =
Formula:
Conversion for O2 concentration:

Turbidity:
standard 0, probe; standard 100, probe
Formula:

Chlorophyll:
standard 0.0, probe
Formula:

Missing Data:

Problems and Anomalies:

MAY--2003

Files: Data: DI-0305-raw, DI-0305-QAQC, DI-0305

Deployments: ();

Condition of Sondes:

Removed Data:

Parameter(s)	Problem	Data Points

Corrected Data:

Specific Conductivity:
standard, probe
Formula:
Salinity

Oxygen:
pre-deployment O2:
post-deployment O2:
standard 100, probe ; O2 correction =
Formula:
Conversion for O2 concentration:

Turbidity:
standard 0, probe; standard 100, probe
Formula:

Chlorophyll:
standard 0.0, probe
Formula:

Missing Data:

Problems and Anomalies:

JUNE--2003
Files: Data: DI-0306-raw, DI-0306-QAQC, DI-0306

Deployments: ();

Condition of Sondes:

Removed Data:

Parameter(s)	Problem	Data Points

Corrected Data:

Specific Conductivity:
standard, probe
Formula:
Salinity
Oxygen:
pre-deployment O2:
post-deployment O2:
standard 100, probe ; O2 correction =
Formula:
Conversion for O2 concentration:

Turbidity:
standard 0, probe; standard 100, probe
Formula:
Chlorophyll:
standard 0.0, probe
Formula:

Missing Data:

Problems and Anomalies:

JULY-2003
Files: Data: DI-0307-raw, DI-0307-QAQC, DI-0307

Deployments: ();

Condition of Sondes:

Removed Data:

Parameter(s)	Problem	Data Points

Corrected Data:

Specific Conductivity:
standard, probe
Formula:
Salinity
Oxygen:
pre-deployment O2:
post-deployment O2:
standard 100, probe ; O2 correction =
Formula:
Conversion for O2 concentration:

Turbidity:
standard 0, probe; standard 100, probe
Formula:
Chlorophyll:
standard 0.0, probe
Formula:

Missing Data:

Problems and Anomalies:

AUGUST--2003
Files: Data: DI-0308-raw, DI-0308-QAQC, DI-0308

Deployments: ();

Condition of Sondes:

Removed Data:

Parameter(s)	Problem	Data Points

Corrected Data:

Specific Conductivity:
standard, probe
Formula:
Salinity
Oxygen:
pre-deployment O2:
post-deployment O2:
standard 100, probe ; O2 correction =
Formula:
Conversion for O2 concentration:

Turbidity:
standard 0, probe; standard 100, probe
Formula:
Chlorophyll:
standard 0.0, probe
Formula:

Missing Data:

Problems and Anomalies:

SEPTEMBER--2003

Files: Data: DI-0309-raw, DI-0309-QAQC, DI-0309

Deployments: (4); 8/27-9/11, 9/11-9/18, 9/18-9/26, 9/26-10/10

Condition of Sondes: 8/27-9/11 (very heavy fouling), 9/11-9/18 (very heavy fouling), 9/28-9/26 (very heavy fouling), 9/26-10/10 (very heavy fouling caused probe malfunctions)

Removed Data:

Parameter(s)	Problem	Data Points
All parameters	EXP	Numerous
Oxygen	FOUL	9/3 2200-9/11 1430
Oxygen	FOUL	9/16 1730 – 9/18 1330
Oxygen	FOUL	9/23 300-9/26 1500
Oxygen	FOUL	10/4 2030-10/10 1300
Turbidity	FOUL	9/11 330-9/11 1430
Turbidity	FOUL	9/25 1830-9/26 1500
Turbidity	FOUL	10/8 1330-10/10 1300
Chlorophyll	FOUL	10/8 1330-10/10 1300

Corrected Data:

8/27-9/11

Specific Conductivity:

standard 10, probe 13.11

Formula: =(-((13.11-10)/(B729-B2))*(B2-B2))+E2

Salinity =(0.6808*R2)-1.903

Oxygen:

pre-deployment O2: 99.225

post-deployment O2: 48.85

**No correction possible due to fouling

Turbidity:

standard 0, probe -.3; standard 123, probe 117.9

Formula: =(((((123/118.2)-1)*(K2))-(-0.3))*((B2-B2)/(B729-B2)))+K2

Chlorophyll:

standard 0.0, probe 2.2

Formula: =(-((2.2-0)/(B729-B2))*(B2-B2))+L2

9/11-9/18

Specific Conductivity:

standard 10, probe na

**No correction possible

Oxygen:

pre-deployment O2: 98.18

post-deployment O2: 53.1

**No correction possible due to fouling

Turbidity:

standard 0, probe -.6; standard 123, probe 71.8

**probe malfunctioning

Chlorophyll:

standard 0.0, probe 0.6

Formula: =(-((0.6-0)/(B1063-B730))*(B730-B730))+L730

9/18-9/26

Specific Conductivity:

standard 12.88, probe 12.55
Formula: =(-((12.55-12.88)/(B1446-B1064))*(B1064-B1064))+E1064
Salinity =(0.7058*R1064)-2.7685

Oxygen:

pre-deployment O2: 102.4
post-deployment O2: 45.3
**No correction possible due to fouling

Turbidity:

standard 0, probe 35.8; standard 123, probe 115.6
**No correction possible due to fouling

Chlorophyll:

standard 0.0, probe 1.7
Formula: =(-((1.7-0)/(B1446-B1064))*(B1064-B1064))+L1064

9/26-10/10

Specific Conductivity:

standard 12.88, probe 11.8
Formula: =(-((11.8-12.88)/(B2113-B1447))*(B1447-B1447))+E1447
Salinity =(0.7098*R1447)-2.8635

Oxygen:

pre-deployment O2: 100.5
post-deployment O2: 6.67
**No correction possible due to fouling

Turbidity:

standard 0, probe 241.2; standard 100, probe 106.3
**No correction possible due to fouling

Chlorophyll:

standard 0.0, probe 44.5
**No correction possible due to fouling

Problems and Anomalies:

Oxygen 9/3-9/11: Probe was heavily fouled resulting in readings that were **faulty** and not correctable. The affected portion of the data was deleted.

Turbidity 9/11: Probe was heavily fouled resulting in readings that were **faulty** and not correctable. The affected portion of the data was deleted.

Salinity 9/11: Salinity increased from 20ppt to 26.5ppt when the sondes were changed. This discontinuity is **faulty**. Notice that during all the deployment periods, salinity slowly decreases then suddenly increases when a new sonde is deployed. This likely resulted from fouling slowly depressing the salinity measurements by the probe over the course of the deployment period.

Depth 9/18-9/26: There was not a depth probe on the sonde during this period.

Oxygen 9/16-9/18: Probe was heavily fouled resulting in readings that were **faulty** and not correctable. The affected portion of the data was deleted.

Salinity 9/18: Salinity increased from 21.6ppt to 24.2ppt when the sondes were changed. This discontinuity is **faulty**. Notice that during all the deployment periods, salinity slowly decreases then suddenly increases when a new sonde is deployed. This likely resulted from fouling slowly depressing the salinity measurements by the probe over the course of the deployment period.

Oxygen 9/23-9/26: Probe was heavily fouled resulting in readings that were **faulty** and were not correctable. The affected portion of the data was deleted.

Turbidity 9/25-9/26: Probe was heavily fouled resulting in readings that were **faulty** and not correctable. The affected portion of the data was deleted.

Salinity 9/26: Salinity increased from 23.6ppt to 26ppt when the sondes were changed. This discontinuity is **faulty**. Notice that during all the deployment periods, salinity slowly decreases then suddenly increases when a new sonde is deployed. This likely resulted from fouling slowly depressing the salinity measurements by the probe over the course of the deployment period.

OCTOBER--2003

Files: Data: GJ-0310-raw, GJ-0310-QAQC, GJ-0310

Deployments: ();

Condition of Sondes:

Removed Data:

Parameter(s)	Problem	Data Points

Corrected Data:

Specific Conductivity:
standard, probe
Formula:
Salinity

Oxygen:
pre-deployment O2:
post-deployment O2:
standard 100, probe ; O2 correction =
Formula:
Conversion for O2 concentration:

Turbidity:
standard 0, probe; standard 100, probe
Formula:

Chlorophyll:
standard 0.0, probe
Formula:

Missing Data:

Problems and Anomalies:

NOVEMBER--2003

Files: Data: GJ-0311-raw, GJ-0311-QAQC, GJ-0311

Deployments: ();

Condition of Sondes:

Removed Data:

Parameter(s)	Problem	Data Points

Corrected Data:

Specific Conductivity:
standard, probe
Formula:
Salinity

Oxygen:
pre-deployment O2:
post-deployment O2:
standard 100, probe ; O2 correction =
Formula:
Conversion for O2 concentration:

Turbidity:
standard 0, probe; standard 100, probe
Formula:

Chlorophyll:
standard 0.0, probe
Formula:

Missing Data:

Problems and Anomalies:

DECEMBER--2003
Files: Data: GJ-0312-raw, GJ-0312-QAQC, GJ–0312

Deployments: ();

Condition of Sondes:

Removed Data:

Parameter(s)	Problem	Data Points

Corrected Data:

Specific Conductivity:
standard, probe
Formula:
Salinity
Oxygen:
pre-deployment O2:
post-deployment O2:
standard 100, probe ; O2 correction =
Formula:
Conversion for O2 concentration:

Turbidity:
standard 0, probe; standard 100, probe
Formula:
Chlorophyll:
standard 0.0, probe
Formula:

Missing Data:

Problems and Anomalies: