2003, Body F Lease Area, Brevard County
Quality Assurance/Quality Control (QA/QC) Log

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

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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.

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

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SEPTEMBER--2003

Files: Data: BF-0309-raw, BA-0309-QAQC, BF-0309

Deployments: (3); 8/22-9/8, 9/11-9/19, 9/19-10/3

Condition of Sondes: 8/22-9/8 (moderate fouling), 9/11-9/19 (light fouling), 9/19-10/3 (heavy fouling)

Removed Data:

Parameter(s)	Problem	Data Points
oxygen	FOUL	9/28 030-10/3 930

Corrected Data:

8/22-9/8

Specific Conductivity:

standard 10, probe 10.68
Formula: =(-((10.68-10)/(B816-B2))*(B2-B2))+E2
Salinity =(0.712*N2)-3.0724

Oxygen:

pre-deployment O2: 97.47
post-deployment O2: 82.1
standard 100, probe 82.7;
Formula: =(-((82.1-97.47)/(B816-B2))*(B2-B2))+G2 +(100-97.47)
Conversion for O2 concentration: =2.86-(0.0777*D2)-(0.0206*O2)+(0.0655*L2)

9/11-9/19

Specific Conductivity:

standard 10, probe 9.768
Formula=(-((9.768-10)/(B1344-B960))*(B960-B960))+E960
Salinity =(0.7132*N960)-3.0646

Oxygen:

pre-deployment O2: 97.9
post-deployment O2: 91.5
standard 100, probe 91.8
Formula: =(-((91.8-97.9)/(B1344-B960))*(B960-B960))+G960 +(100-97.9)
Conversion for O2 concentration=2.93-(0.0748*D960)-(0.0271*O960)+(0.0658*L960)

9/19-10/3

Specific Conductivity:

standard 10, probe 10.04
Formula=(-((10.04-10)/(B2015-B1345))*(B1345-B1345))+E1345
Salinity =(0.721*N1345)-3.4053

Oxygen:

pre-deployment O2: 108.2
post-deployment O2: 35.23
standard 100, probe 52.3
**Not correctable.

Problems and Anomalies:

All parameters 9/8 1030-9/11 930: No data. No sonde was deployed during this time.

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Oxygen 9/28 030-10/3 930: DO probe read 35.3% in 100% standard following deployment period. Probes were heavily fouled (80% coverage) likely causing the depressed oxygen measurements late in the deployment period. The suspected portion of the record was deemed **faulty** and was deleted. The remaining portion of the record was retained without correction and **may be faulty** due to fouling or drift.

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OCTOBER--2003

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

Deployments: (4); 9/19-10/3, 10/3-10/17, 10/17-10/27, 10/27-11/7

Condition of Sondes: 9/19-10/3 (heavy probe fouling), 10/3-10/17 (very heavy probe fouling), 10/17-10/27 (light probe fouling), 10/27-11/7 (very heavy probe fouling)

Removed Data:

Parameter(s)	Problem	Data Points
oxygen	FOUL	9/28 030-10/3 930
Oxygen	FOUL/PF	10/9-10/17
Oxygen	FOUL	11/5-11/7

Corrected Data:

9/19-10/3

Specific Conductivity:

standard 10, probe 10.04
Formula=(-((10.04-10)/(B2015-B1345))*(B1345-B1345))+E1345
Salinity =(0.721*N1345)-3.4053

Oxygen:

pre-deployment O2: 108.2
post-deployment O2: 35.23
standard 100, probe 52.3
Formula: =(-((100-100)/(B672-B2))*(B2-B2))+F2 +(100-108.2)
Conversion for O2 concentration:=1.78-(0.0483*C2)-(0.0146*N2)+(0.0662*K2)
**Slope not correctable (see below)

10/3-10/17

Specific Conductivity:

standard 10, probe 9.765
Formula: =(-((9.765-10)/(B1346-B673))*(B673-B673))+D673
Salinity =(0.6985*M673)-2.4285

Oxygen:

pre-deployment O2: 101.1
post-deployment O2: 13.84
standard 100, probe 14.1
Formula: =(-((100-100)/(B1346-B673))*(B673-B673))+F673 +(100-101.1)
Conversion for O2 concentration:=1.65-(0.042*C673)-(0.0186*N673)+(0.0686*K673)
**Slope not correctable (see below)

10/17-10/27

Specific Conductivity:

standard 10, probe 10.92
Formula: =(-((10.92-10)/(B1826-B1347))*(B1347-B1347))+D1347
Salinity =(0.7048*M1347)-2.6386

Oxygen:

pre-deployment O2: 90.67
post-deployment O2:75.53
standard 100, probe 74.5

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Formula: =(-((75.53-90.67)/(B1826-B1347))*(B1347-B1347))+F1347 +(100-90.67)
Conversion for O2 concentration:=1.55-(0.0393*C1347)-(0.0188*N1347)+(0.0696*K1347)

10/27-11/7

Specific Conductivity:

standard 10, probe 8.761
Formula: =(-((8.761-10)/(B2353-B1827))*(B1827-B1827))+D1827
Salinity =(0.7085*M1827)-2.7986

Oxygen:

pre-deployment O2: 102
post-deployment O2: 82.62
standard 100, probe 77.4
Formula: =(-((100-100)/(B2353-B1827))*(B1827-B1827))+F1827 +(100-102)
Conversion for O2 concentration:=3.91-(0.119*C1827)-(0.0318*N1827)+(0.0702*K1827)
**Slope not correctable (see below)

Problems and Anomalies:

Oxygen 9/28 000-10/3 930: DO probe read 35.3% in 100% standard following deployment period. Probes were heavily fouled (80% coverage) likely causing the depressed oxygen measurements late in the deployment period. The suspected portion of the record was deemed **faulty** and was deleted. The remaining portion of the record was retained and was corrected for the incorrect calibration value prior to deployment but could not be corrected for any fouling or drift that may have occurred. The remaining portion of the record **may be faulty** due to fouling or drift.

Salinity 10/3: Discontinuity. Salinity increased from 28.5ppt to 21ppt when sondes were changed on 10/3. This discontinuity is **faulty**.

Oxygen 10/9 000-10/17 1030: DO probe read 13.84% in 100% standard following deployment period. Probes were heavily fouled (90% coverage) likely causing the depressed oxygen measurements late in the deployment period. The suspected portion of the record was deemed **faulty** and was deleted. The remaining portion of the record was retained and was corrected for the incorrect calibration value prior to deployment but could not be corrected for any fouling or drift that may have occurred. The remaining portion of the record **may be faulty** due to fouling or drift.

Salinity 10/17: Discontinuity. Salinity increased from 16.8ppt to 19.2ppt when sondes were changed on 10/17. This discontinuity is **faulty**.

Oxygen 11/5 000-11/7 1000: DO probe read 82.6% in 100% standard following deployment period. Probes were heavily fouled (90% coverage) likely causing the depressed oxygen measurements late in the deployment period. The suspected portion of the record was deemed **faulty** and was deleted. The remaining portion of the record was retained and was corrected for the incorrect calibration value prior to deployment but could not be corrected for any fouling or drift that may have occurred. The remaining portion of the record **may be faulty** due to fouling or drift.

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NOVEMBER--2003

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

Deployments: (3); 10/27-11/7, 11/7-11/25, 11/25-12/8

Condition of Sondes: 10/27-11/7 (very heavy probe fouling), 11/7-11/25 (heavy probe fouling), 11/25-12/8 (very light probe fouling)

Removed Data:

Parameter(s)	Problem	Data Points
Oxygen	FOUL	11/5-11/7

Corrected Data:

10/27-11/7

Specific Conductivity:

standard 10, probe 8.761
Formula: =(-((8.761-10)/(B2353-B1827))*(B1827-B1827))+D1827
Salinity =(0.7085*M1827)-2.7986

Oxygen:

pre-deployment O2: 102
post-deployment O2: 82.62
standard 100, probe 77.4
Formula: =(-((100-100)/(B2353-B1827))*(B1827-B1827))+F1827 +(100-102)
Conversion for O2 concentration:=3.91-(0.119*C1827)-(0.0318*N1827)+(0.0702*K1827)
**Slope not correctable (see below)

11/7-11/25

Specific Conductivity:

standard 10, probe 9.124
Formula: =(-((9.124-10)/(B1391-B529))*(B529-B529))+D529
Salinity=(0.69645*M529)-2.2941

Oxygen:

pre-deployment O2: 99.2
post-deployment O2: 98.18
standard 100, probe 97.2
Formula: =(-((98.18-99.2)/(B1391-B529))*(B529-B529))+F529 +(100-99.2)
Conversion for O2 concentration:=3-(0.0866*C529)-(0.0364*N529)+(0.073*K529)

11/25-12/8

Specific Conductivity:

standard 10, probe 9.8
Formula: =(-((9.8-10)/(B2014-B1392))*(B1392-B1392))+D1392
Salinity =(0.7009*M1392)-2.4114

Oxygen:

pre-deployment O2: 99.65
post-deployment O2: 98.925
standard 100, probe 96.3
Formula: =(-((98.925-99.65)/(B2014-B1392))*(B1392-B1392))+F1392+(100-99.65)
Conversion for O2 concentration:=3.56-(0.115*C1392)-(0.0509*N1392)+(0.0789*K1392)

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Problems and Anomalies:
Salinity 11/7: Discontinuity. Salinity increased from 26.7ppt to 30ppt when sondes were changed on 11/7. This discontinuity is **faulty**.
Oxygen 11/5 000-11/7 1000: DO probe read 82.6% in 100% standard following deployment period. Probes were heavily fouled (90% coverage) likely causing the depressed oxygen measurements late in the deployment period. The suspected portion of the record was deemed **faulty** and was deleted. The remaining portion of the record was retained and was corrected for the incorrect calibration value prior to deployment but could not be corrected for any fouling or drift that may have occurred. The remaining portion of the record **may be faulty** due to fouling or drift.
Salinity 11/25: Discontinuity. Salinity increased from 23.5ppt to 28ppt when sondes were changed on 11/25. This discontinuity is **faulty**.