

Glider Prep and Deployment Checklists

Glider -
deployment

R023

Project

MOO Entrance Line

Deployment
dates

3/20/23 - 4/13/23

Location/notes

Entrance Line

Extant

Notes

1) Glider check-out sheet

☒☐

2) Ballasting/dunk sheets

☒☐

3) Deployment checklists
(on boat, shore side)

☒☐

4) Glider check-in sheet

☒☐

5) Misc. (science, etc.)

☐☐☒

CTD

☐ Optode

☐ LISST

6) Other

☐☐

GLIDER	
PREPARER	
PREP DATE	
LOCATION / MISSION	
DENSITY @ TEMP	
INSURED?	

SCIENCE BAY SERIAL NUMBERS	1) CTD	Calibration Date (user/factory)
	2) F13S10	
	3) B33S10	
	4)	
	5)	
	6)	

PRE-SEAL

TAKE PICTURES OF CONNECTORS AT EACH SEALING JOINT

FORE CHECK

Check pump & pitch threaded rods
(clean and grease)

Grounded nose?

Dessicant Exposed?

Leak detect in place, batteries

secure, grab & wiggle pitch battery to

check secure, white guides free, no

metal shavings, bottles installed

PAYLOAD CHECK

Special Sensors / Additional Sensors?

Grounded?

Corrosion?

Fore Sci Ring

Aft Sci Ring

CTD cable clear, no leak at CTD
joint, no leak at pucks

CTD

Other?

AFT CHECK

Iridium Card Installed (SIM #) (if not standard)

Flash Card Check (remove old files, backed up? See **Software** section)

Inspect strain on connectors/worn connectors

Battery secured

Ballast bottle present

Aft cap clean/clear of leak

Ejection weight stem grounded? Should it be? (Version specific)

Thruster greased?

Ensure safety of ballast pump prior to powering glider

Battery check: G2/G1 turn glider on with only 1 battery connected; G3 use BMS current

Aft Pack Voltage

Pitch Pack Voltage

Nose Packs Voltage

Emer (if possible) Voltage

Cabling/connectors - lithium vs. alkaline circuit correct?

POST-SEAL, pre-ballast

GENERAL

Pick Point Present?

Special Cargo?

HARDWARE

Nose cone and pump bladder inspection

Anode grounded?

Pressure Sensor Check (corrosion, clear)

Aft sensor

Ejection weight assembly ok/not seized?

Anode size / remainder

Payload sensor

POWERED

Put m_coulomb_amphr_total accordingly (0 = new batteries)
Put f_coulomb_battery_capacity (Alk=155, Lilon=200, li=450,625)
Vacuum @ T @ ballast 6.364996 inHg 24.312500°C Stabilized m_battery
Get m_tot_num_inflections. Verify relative < 20000 or sufficient
Get m_leakdetect_voltage, science, forward (>2.3)
Get m_digifin_leakdetect_reading (less than 1019 requires service)
✓ Altimeter test - put c_alt_time 0, verify chirp, note m_altimeter_voltage
Verify Argos ping _____ Wiggle for 5 minutes

✓
155 ✓
15.607281 volts
~~8152.0000~~ nodim
2.499969 volts
1023.0000 nodim
0 secg ; 0.086233 volts

SOFTWARE

(paths are RU specific)

GENERAL

Backup Glider and Science Cards
COOL//gliderData//glider_OS_backups/"glider name"
Format both CF cards - FAT Format
Apply new copy of latest TWR Software Image
For Glider: COOL//gliderData//gliderDos_releases/archived/"version"/target-glider
For Science: COOL//gliderData//gliderDos_releases/archived/"version"/target-science

Copy/overwrite STATE and CONFIG Folders
FW Transfer latest RU Software Image
COOL/Gliders/Glider Software Image/"use most recent image"

Software Version _____ Configure TBDlist
Date OK? _____ Configure NBDlist

✓
✓
✓
✓
✓
✓
✓
✓

\CONFIG

simul.sim deleted

\MAFILES

goto_l10.ma (set x_last...)
yo*.ma, surfac*.ma pertinent for each glider and test missions

✓
✓
✓

\MISSIONS

b_arg: undervolts: 10.5V alkaline, 9-10 V Li3S, 12.5V Li4S, 12V Lilon
Remove unused sample behaviors in missions

✓
✓

AUTOEXEC.MI

Iridium: Numbers may vary. Listed: Main - Rutgers Alternate - TWR
Irid Main: 88160000592 ✓ Irid Alt: 17818711614 ✓
u_iridium_failover_retries = 10 ✓ Ver 7.15 u_iridium_idle -1? ✓
sci timestamp sensors (ctd41cp) ✓ Calibration coefficients ✓
Reset the glider, observe any errors ✓
get f_max_working_depth 102m ✓

✓
✓
✓
✓
✓

CACHE MANAGEMENT

indir del *.cac
del ..\state\cache*.cac
after *bdlst.dat are set (exit reset):
logging on; logging off
send ..\state\cache*.cac
send *.mbd *.sbd *.tbd

✓
✓
✓
✓

DOCKSERVER

Version _____
Check script _____

TWR BACKUP

Confirm to-glider folder clear _____
Confirm correct script running _____

* **Software Burning Tips** : if using Procomm or local folder, copy all the files from the software image locally. Then proceed to edit them for the glider and do a mass freewave transfer of the files. Save these files or prepare the to-glider with these files

* Do a logging on for all these checks, take note of log and transfer before deployment

SENSOR RETURN

put c_science_send_all 1

put c_science_all_on 8

put c_science_on 3

All sensors reporting values?

CTD

Tank static comparison OK?

Pumped CTD operational?

Plot ballast *BD log, sci_water_pressure non-noisy and near < .5 m

OPTODE

Check in completed?

Saturation reading in air

OPTICS

Check max return using fluoro sticks

Check dark counts with sensor covered (11-20)

Optics file name

LISST

Clean LISST and perform ZSCAT

OTHER

OUTSIDE

GPS Alamanc/firmware updated?

GPS check Latitude

Iridium connect

zero_ocean_pressure (0.184)

Air bladder shutoff (time)?

Compass calibration

For deep gliders, put c_de_oil_vol -1000 to fully retract oil inside reservoir

Longitude

Alternate number

Get m_pressure 0.0

Sync_time (proper date?)

Compass check

ADDITIONAL

***WARNING: Advanced knowledge required to avoid damage/injury

Check burn wire - disconnect, then put c_weight_drop 1, confirm 12 V

Fore leakdetect Science Aft leakdetect

THRUSTER

Report ++ m_thruster_current

Put c_thruster_on 20

Verify thruster spins clockwise and current value updates regularly

Put c_thruster_on 0 to turn off

NOTES

RUZ3 fin/rudder broke during compass cal

Fin replaced w/ Ruz2 "new" Vims fin

Vacuum 3/15/23 4:51pm = 8.356 @ 228.97 cc @ 24.75°C

3/17/23 9:31am = 8.26 @ 228.97 cc @ 24.44°C

Outside checks w/ new fin 3/17 NLW

Iridium Primary ☒ Alternate ☒ 17818711614

GPS Lat: 40 28.748 N Lon: -74 26.223 E

zero-ocean-pressure ☒

m-pressure 0.0067 bar

sync-time ☒

air-bladder-shutoff No - did not shut off after 20 min

GLIDER: _____

Iteration 4 Log File 0365.0000 Date / Location 3/17/23 Nicole

FORE	EB	SB	AFT	Ballast	Notes
Front Scale				FBB1 stbd <u>381g</u> <u>1S</u>	<u>new fn</u> old = 1189.7g New = 1231.7g → remove 42g from aft bottle
Aft Scale				FBB2 Port <u>269g</u> <u>2P</u>	
				Aft BB <u>44g</u>	
Instrument: <u>1581</u> Instrument: _____					
T = <u>21.826</u> T = _____				Roll <u>0.037 rad</u>	
C = <u>4.179</u> C = _____				Ballast <u>-4.15 cc</u>	
D = <u>1019.54</u> D = _____				Battery <u>0.024 in</u>	

Iteration 5 Log File 0366.0000 Date / Location 3/17/23 Nicole

FORE	EB	SB	AFT	Ballast	Notes																		
Front Scale				FBB1 stbd <u>277g</u> <u>1S</u>	<table border="0"> <tr> <td><u>E</u></td> <td><u>A</u></td> <td></td> </tr> <tr> <td><u>318</u></td> <td><u>62</u></td> <td></td> </tr> <tr> <td><u>-128</u></td> <td><u>+128</u></td> <td>balance scales</td> </tr> <tr> <td><u>-104</u></td> <td><u>-103</u></td> <td>remove 207</td> </tr> <tr> <td><u>+25</u></td> <td><u>-25</u></td> <td>note heavy</td> </tr> <tr> <td><u>-207</u></td> <td><u>-0</u></td> <td></td> </tr> </table>	<u>E</u>	<u>A</u>		<u>318</u>	<u>62</u>		<u>-128</u>	<u>+128</u>	balance scales	<u>-104</u>	<u>-103</u>	remove 207	<u>+25</u>	<u>-25</u>	note heavy	<u>-207</u>	<u>-0</u>	
<u>E</u>	<u>A</u>																						
<u>318</u>	<u>62</u>																						
<u>-128</u>	<u>+128</u>	balance scales																					
<u>-104</u>	<u>-103</u>	remove 207																					
<u>+25</u>	<u>-25</u>	note heavy																					
<u>-207</u>	<u>-0</u>																						
Aft Scale				FBB2 Port <u>164g</u> <u>2P</u>																			
				Aft BB <u>44g</u>																			
Instrument: _____ Instrument: _____																							
T = _____ T = _____				Roll <u>0.026 rad</u>																			
C = _____ C = _____				Ballast <u>-0.512 cc</u>																			
D = _____ D = _____				Battery <u>0.026 in</u>																			

Iteration _____ Log File _____ Date / Location _____

FORE	EB	SB	AFT	Ballast	Notes
Front Scale				FBB1 stbd _____	
Aft Scale				FBB2 Port _____	
				Aft BB _____	
Instrument: _____ Instrument: _____					
T = _____ T = _____				Roll _____	
C = _____ C = _____				Ballast _____	
D = _____ D = _____				Battery _____	

GLIDER: 23Iteration 1 Log File 03630000.mlg Date / Location 2/9/23

FORE	EB	SB	AFT	Ballast	Notes
Front Scale				FBB1 stbd	Between EB/SB both 3P - 391g Front - 1235g - 93-83% Back - 88g - 64-5% → added 111g
Aft Scale				FBB2 Port	
Instrument: CTD1645				Aft BB	
Instrument: RU23				Roll	
T = 22.311				Ballast	
C = 3.974				Battery	
D = 1018.004					
2/13/23					

Iteration 2 Log File 1769 Date / Location 2/16/23

FORE	EB	SB	AFT	Ballast	Notes
Front Scale				FBB1 stbd	between FLY/SB ^{#1 502} 502 bottom - 3P ^{#2 111g top} - 4P
Aft Scale				FBB2 Port	
Instrument: CTD				Aft BB	
Instrument:				Roll	
T =				Ballast	
C =				Battery	
D = 1018.12					
tank					

Iteration 3 Log File 17490 Date / Location 2/20/23

FORE	EB	SB	AFT	Ballast	Notes
Front Scale				FBB1 stbd	battpos 0.9655 in ballast pumped 228.06 cc battery 15.737v
Aft Scale				FBB2 Port	
Instrument: CTD1581				Aft BB	
Instrument: RU23				Roll	
T = 22.13				Ballast	
C = 3.99				Battery	
D = 1018.19					

Backwash
63 out of 60HR

Glider Deployment Checklist – Shore Side

Glider

Date

Project/Location

Field Participants, Vessel

Pilot

Pre-deployment

/to-glider folder populated & recent ☐

del large/numerous SBD & TBD's ☐

Glider Power Up - Pre-deploy

Confirm 'boot app' with 'boot' ☐

Battery Voltage

m_vacuum (> 7)

Coulomb AH total set

☐

Digifin & glider leakdetect OK ☐

sync_time (after GPS hit)

☐

Glider In Water - Deployed

zero_ocean_pressure ☐

m_depth < 1 m

☐

run od, od5.mi - confirm overdepth
abort ☐

run shallow, deep.mi ☐

Download shallow.mi MBD and NBD file

segment #:

Boat – perform CTD comparison cast ☐

CTD s/n:

Laptop:

Test Mission Check

Vehicle Altimeter Works ☐

Flies to commanded depth and to
surface ☐

Average vehicle roll

+/- 26 (or desired pitch) obtained,
no overshoot or undershoot

☐

Average battery position on dives
and climbs

Does vehicle track heading or
m_heading cross c_heading

☐

Fin not hardover
entire time (avg fin)

Avg Dive Rate

Avg Climb Rate

Science Checks

Surface Water Density

Bottom Water Density

CTD and m_pressure agree

☐

Average offset

CTD temp & salinity downcast =
upcast (no lag)

☐

Remaining Sensors reporting
reasonable values

☐

Prepare for Primary Mission

SBD/TBD's prior to od.mi deleted

☐

Transfer SBD's and TBD's

☐

Adjust yo to bottom if altimeter
works

☐

Post Dive

Verify SBD and TBD are in tact

☐

Verify .cac availa for SBD/TBD

☐

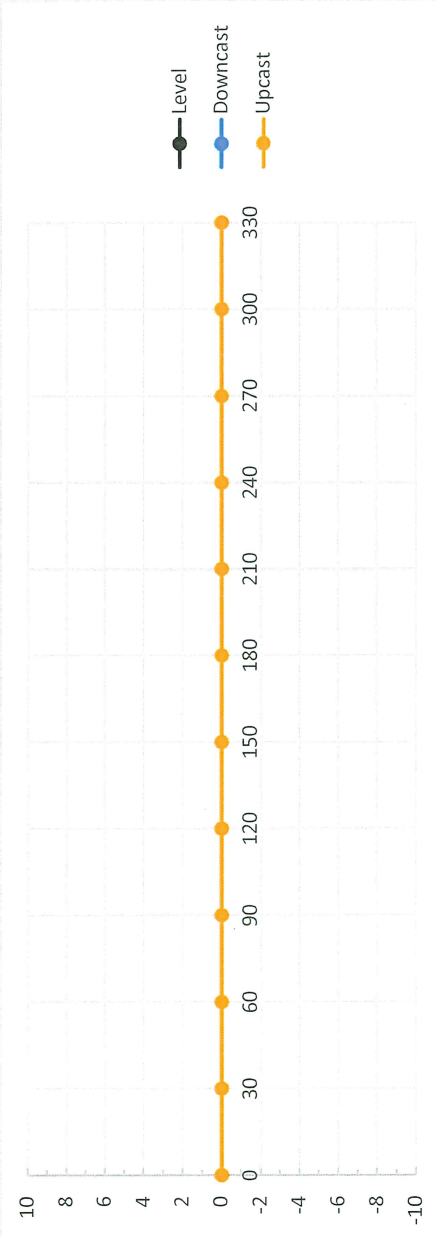
Glider / Mission: _____ Date _____ Operator _____

Cal Location

→ LEVEL →		
HAND	GLIDER	ERROR
		0
		30
		60
		90
		120
		150
		180
		210
		240
		270
		300
		330

↓ DOWNCAST ↓		
HAND	GLIDER	ERROR
		0
		30
		60
		90
		120
		150
		180
		210
		240
		270
		300
		330

↑ UPCAST ↑		
HAND	GLIDER	ERROR
		0
		30
		60
		90
		120
		150
		180
		210
		240
		270
		300
		330



Glider _____

Date _____

Pilots _____

Where _____

Laptop _____

Vehicle Powerup: CTRL ^ C (until you get to prompt)!!!

On boat
(Remember after 10 min
glider will go into mission,
as well as on powerup!)

Battery Voltage	get m_battery
Vacuum Pressure	get m_vacuum, should be > 7 for bladder inflation
Iridium Connection	look for connect dialog & surface dialog, let it dial at prompt
boot app	boot app
boot (should report application)	reports boot application
run status.mi	mission completed normally?

In Water

zero_ocean_pressure	while glider in water
run od.mi (with or without float, ask RU)	glider should dive and surface, type why? Should say overdepth, if not
send *.dbd *.mlg *.sbd (do nothing)	"send *.sbd" is most important (FW)
run shallow.mi or deep.mi	(IRID) (glider should dive and not reappear) (report to Rutgers or steam out sl
Verify dive; disconnect freewave Report to Rutgers send xxxxx.mbd (from test mission) Perform CTD Comparison CAST	(IRID) typically done with RU provided SBE19 or Cast Away CTD
LAT: _____	LON _____

Oxygen Optode Check & Calibration

OPTODE SN	_____	DATE	_____
FOIL ID	_____	AIR PRESSURE (hPa)	_____
PRE SALINITY	_____	CALIBRATED?	_____

*** REMEMBER TO ISSUE THE SAVE COMMAND AFTER CHANGING VALUES**

100% SOLUBILITY	_____	TITRATION	_____
* $\mu\text{M} = \text{ppm} * 1000 / 32$		EPA Na2S2O3 Check	_____ mL
		Sodium Sulfite / mL	_____ 0%

PRE-CHECK	
100%	0%
Conc (μM) = _____	Conc (μM) = _____
Saturation (%) = _____	Saturation (%) = _____
Temp ($^{\circ}\text{C}$) = _____	Temp ($^{\circ}\text{C}$) = _____
Phase = _____	Phase = _____

POST-CAL	
100%	0%
Conc (μM) = _____	Conc (μM) = _____
Saturation (%) = _____	Saturation (%) = _____
Temp ($^{\circ}\text{C}$) = _____	Temp ($^{\circ}\text{C}$) = _____
Phase = _____	Phase = _____

GLIDER CONFIG	
POST SALINITY	_____
TEXT OUTPUT OFF	_____

*** REMEMBER TO ISSUE THE SAVE COMMAND AFTER CHANGING VALUES**



Center for Ocean Observing Leadership

Sequoia LISST Background Check-Out/Check-In

GLIDER: _____ LISST: _____ DEPLOYMENT: _____

How to Do a ZSCAT to collect background data

1. Obtain filtered Seawater and let sit out overnight to degas.
2. Cover LISST with black tape to create a chamber.
3. Slowly fill chamber with degassed FSW. Try not to create bubbles. Make sure chamber is not leaking.
4. Make sure there are no bubbles on the LISST sensor windows.
5. Cover the top of the chamber to make it dark.
6. Perform a zscat on the LISST to collect background data (u4stalk to LISST). Do 3 in a row that pass, and then save the zscat.

```
consci, type proglets.dat, look up uart and bit in proglets
u4stalk uart 9600 bit
zs
```

7. Turn on the LISST to collect an RBN file. (through glider)

```
put c_science_on 1
put c_science_all_on_enabled 0
put c_science_send_all 1
put c_lisst_on 4
put c_science_on 3
```

8. Wait a minute or two and then turn off the LISST

```
put c_lisst_on -1
```

9. Write down RBN file name displayed on screen (sci_lisst_rbn1_file)

Check-Out, Pre-Deployment	Check-In, Post-Deployment
Date: _____	Date: _____
Clean LISST windows use Lens Paper/Alcohol, _____ don't scratch windows. _____	Do NOT clean LISST windows. _____
Perform ZSCAT (see above) _____	Perform ZSCAT (see above) _____
RBN file name _____	RBN file name _____
Once data saved off LISST, append to RBN filename: _____ _preMission_zscat	Once data saved off LISST, append to RBN filename: _____ _postMission_preCleaning_zscat
	Clean LISST windows use Lens Paper/Alcohol, _____ don't scratch windows _____
Notes: _____	Notes: _____

MASS (g) COMMENTS

<u>Deployment</u>		FORE STEM (minus FBB1,2)	
		FORE HULL	
		AFT STEM (red plug, card)	
<u>Glider</u>		AFT HULL	
		COWLING	
		SCREWS (vacuum, cowling, aft battery)	
<u>Date</u>		PAYLOAD BAY	
		WINGS	
		OTHER	
<u>Preparer</u>		AFT BATTERY	
		PITCH BATTERY	
		FORE BATTERY 1, 2, EMER	
		AFT BOTTLE	
		FORE BOTTLE 1 (stbd) (FBB1)	
		FORE BOTTLE 2 (port) (FBB2)	
		OTHER	

ENTIRE VEHICLE (Ohaus Scale)

Tank Specifics		Glider Specifics	
Tank Density (kg/m^3)	1023.00	Glider Volume (L)	57.000
Tank Temperature (C)	23.00	Total Mass (kg)	0.000
Weight in Tank (g)	0.00	Glider Density (in air)	0.00
Target Specifics		Volume Change (temperature induced)	
Target Density (kg/m^3)	1023.00	Volume Change (target) (mL)	0.0
Target Temperature (C)	23.00	Coefficient of Thermal Expansion	2.35E-05
		Carbon hulls	2.35E-05
		Aluminum hulls	7.00E-05
Glider Volume (at lab temp) (L)	0.000		

Ballasting Using Volume		Ballasting Using Mass	
Should Hang (in tank) (g)	0.0	Adjust Glider Mass (entered volume) (g)	58311.0
Adjust by (g)	0.0	Glider Density (target water, using mass)	0.0
Weight Change (no dunk) (g)			
Glider Density (target)	1023.0		

H	MOMENT (rad)	(deg)
Angle of Rotation (before)		0.0
Angle of Rotation (after)		0.0
Angle of Rotation	0	0.0
Weight on Spring (after)		
Weight added	290	
Radius of Hull	107	
H-distance	####	

125 for G2+, deeps

MISC MASSES & VOLUMES	
Pick point	- 40 mL - 107 g air - 66 g water
Wing Rail Weights	- 1.8 mL @ 15.4 g each ~ 13.5 g in water
VMT Transceiver	- 173 mL - 162 g water
FIRE Shroud SN02 (ru01)	- 266 mL - 112 g water
Optode - 130Glider Ballast	Optode - 130Glider Ballast
LISST Bay	- roughly 6.55 L



Center for Ocean Observing Leadership

Slocum Glider Check-IN

DATE: 4/17/23 GLIDER: RU23 SB: _____

Vehicle Powered

1. Power on vehicle in order to fully retract pump, and/or to deflate air bladder. ✓
2. Wiggle vehicle for 5 minutes. ✓

Vehicle Cleaning (hose down with pressure)

Nose cone

1. Remove nose cone ✓
2. Loosen altimeter screws, and remove altimeter or leave temporarily attached ✓
3. Retract pump ✓
4. Remove altimeter and hose diaphragm removing all sand, sediment, bio oils ✓
5. Clean nose cone and altimeter ✓

Tail cone

1. Remove tail cone ✓
2. Hose and clean anode and air bladder making sure air bladder is completely clean ✓
3. Clean cowling ✓

Wing rails

1. Remove wing rails and hose down ✓

Tail plug cleaning

1. Dip red plug in alcohol and clean plug if especially dirty ✓
2. Re-dip red plug and repeatedly insert and remove to clean the glider plug ✓
3. Compress air glider female connector ✓
4. Lightly silicon red plug and replace in glider once silicon has been dispersed evenly in the plugs ✓

CTD Comparison Check

1. Inspect CTD sensor for any sediment buildup, take pictures of anything suspicious or make note. ✓
2. Record results of Static Tank Test on CTD Check-in/out sheet ✓

Optode Check/Calibration

1. Record results on Optode Check Sheet

LISST Check/ZSCAT

1. Record results on LISST Check Sheet

Vehicle Disassembled

1. Check leak points for water or salt buildup ✓
2. **BACKUP FLASH CARDS** in ✓
/coolgroup gliderData/glider_OS_backups/<glider>/<glider-deploymentID>/<from glider>,<from sb_0xxx> **** DO NOT DELETE DATA OFF CARDS****

✓ Tail: RU23

Science bay: PB 0175

rucool
rucoolgliders

3. Change permissions on <glider-deploymentID> folder to read, write, execute for owner and group, and read, execute for everyone ✓
4. Remove used batteries and place in return crate
5. Re-assemble glider with a vacuum ✓ 6.205 inHg

Update Glider/Sensor History/Notes/Inventory

1. If needed, add notes to deployment page, glider binder, payloads binder, etc.

Compile Deployment Checklist Packet Check ✓

2. Print/fill out checklist packet title page
3. Make sure all pages are accounted for.
4. Scan entire packet and save to:
/coolgroup/gliderData/deployments/<YEAR>/<glider-missionID>/meta/<Glider-missionID_checklists>
5. Put packet into the appropriate year deployment binder.

Slocum CTD Comparison Check

GLIDER: _____ SB: _____ DEPLOYMENT: _____

Pre-Deployment

Date: _____

SBE19 s/n:	Glider:
Temperature:	Temperature:
Conductivity:	Conductivity:

Notes:

Post-Deployment

Date: 4/17/23

SBE19 SBE19 s/n:	Glider:
Temperature: <u>22.43723 °C</u>	Temperature: <u>22.4261 °C</u>
Conductivity: <u>4.38133 S/m</u>	Conductivity: <u>4.37053 S/m</u>

Notes: glider @ 2:20pm ; SBE19 @ 2:30pm (different times)

*** CTD Maintenance if comparison is not acceptable (reference SeaBird Application Note 2D)

1. Perform CTD backward/forward flush with 1% Triton X-100 solution
2. Perform CTD backward/forward flush with 500 – 1000 ppm bleach solution
3. Perform the same on a pumped unit, just different approach
4. Repeat comparison test if above results not within $T < .01$ C, $C < .005$ S/m

Glider Deployment Checklist – Shore Side

Glider

Date

Project/Location

RU 23

3/20/23

RUMES

Field Participants, Vessel

Pilots

Ryan Grech, Emily Bush, Nide Wark,
Reimer, Barry, Captain Chip Haldeman

MOU 23 class

Pre-deployment

/to-glider folder populated & recent



del large/numerous SBD & TBD's



Had to upload cache A6 to SFMC

not needed

Glider Power Up - Pre-deploy

Confirm 'boot app' with 'boot'



Battery Voltage

15.34

m_vacuum (> 7)

9.40056

Coulomb AH total set



Digifin & glider leakdetect OK



Digifin = 1022

m_leakdetect
voltage = 2.5
" " "
voltage forward
= -1

sync_time (after GPS hit)



Glider In Water - Deployed

zero_ocean_pressure



m_depth < 1 m



= 0m

run od, od5.mi - confirm overdepth
abort



run shallow, deep.mi



(don't run deep.mi for this gen glider)

Download shallow.mi MBD and NBD file

segment #: 0372.0000

Boat – perform CTD comparison cast



CTD s/n:

Laptop:

Test Mission Check

Vehicle Altimeter Works



Flies to commanded depth and to
surface



Average vehicle roll

187

+/- 26 (or desired pitch) obtained,
no overshoot or undershoot

☐

Average battery position on dives
and climbs

Does vehicle track heading or
m_heading cross c_heading

☐

Fin not hardover
entire time (avg fin)

Avg Dive Rate

Avg Climb Rate

Science Checks

Surface Water Density

Bottom Water Density

CTD and m_pressure agree

☐

Average offset

CTD temp & salinity downcast =
upcast (no lag)

☐

Remaining Sensors reporting
reasonable values

☒ 100% OK

Prepare for Primary Mission

SBD/TBD's prior to od.mi deleted

☐

Transfer SBD's and TBD's

☐

Adjust yo to bottom if altimeter
works

☐

Post Dive

Verify SBD and TBD are in tact

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Verify .cac availa for SBD/TBD

☐

change script to: MA-Sci-X4_sbd_tbd-verm etc

★ Set New Yo & New surfac
files for evening.