DEPLOYMENT LOG for IceCube STRING # 46

Deployment Start: *at* 4:13 pm *on* 1/26/07

Deployment End: *at* 2:41 Am *on* ~~1/26/07~~ 1/27/07 TKH

Target depth (DOM60): **2450** m Final depth: 2450.45

Deployment Crew

Position	First Shift	Second Shift
Shift lead	Tom Ham	Albrecht Karle
DOM install 1 (high)		Georges Kohnen
DOM install 2 (low)	Gabriel Gourie	Paul Wisniewski / Sebastian Boeser
DOM supply 1 / DOM install 3	Mark Krasberg / Phil Roth	Phil Roth
DOM supply 2 / floater		Mark Krasberg
Winch operator (c...	Darryn Blythe	Albrecht / ~~[illegible]~~ Owen
	Justin Vandenbroucke	Mick D'Agostino

...hift change: 7 09pm

43 + 41 Not on original list

Please check serial number for # 52

6
2 drill
3 hrs

8
1 drill
9.7 hrs

Hole Handover

☐ Drill data reviewed

- ☐ maximum drift in x:_____ ☐ plot
- ☐ maximum drift in y:_____ ☐ plot
- ☐ maximum depth:_____
- ☐ minimum radius:_____ ☐ plot
- ☐ plot of predicted radius vs depth and time

☐ Hole dimensions verified Time: 3pm

Drill Lead: _____
name / signature / date

Deployment Lead: _____
name / signature / date

☐ Handover complete

Hole Logging
(skip if not applicable)

☐ Logger drop started Time:_____ Speed:_____
☐ Logging started Time:_____ Speed:_____
☐ Logging ended Time:_____

☐ Estimated hole lifetime:_____

► Must reach target depth by _____ on _____

Deployment Startup

Time: 4:16

- [x] Cable winch anchored and [x] operational
- [x] Tower winch operational
- [x] Tie off verified
- [x] Yellow rope verified

- [x] Deployment monitoring system (PTS) operational [x] DDB# 4
- [x] Pressure sensors on hand: Paro and Keller, with backups
- [x] Laser ranger, tape measure (metric) on hand

- [x] Bleeder string installed (on quad connectors inside cable reel drum)

- [ ] ~~Uphole pressure system on hand: Setra sensor and cable~~

- [x] DOMs placed in racks
- [x] Weight stack on hand: weights (5) and 2 m cable
- [x] 17 m string extension steel cable on hand

Safety checks complete (☐ 1st shift ☐ 2nd shift)

- [x] ☐ Crew safety briefing
- [x] ☐ E-stop locations identified
- [x] ☐ TOS evacuation procedures reviewed
- [x] ☐ Mustering point identified
- [x] ☐ Snow mobile driver(s): most
- [x] ☐ CPR trained: Krashny, Kleist, Ham, Gourie, Blythe
- ☐ ☐ ~~Food runners~~: ______

call galley at 65521

NOTE: hole much bigger than usual — using driller cover, not DOM cover 32 cm not 24 cm

- [ ] End of Main Cable brought into TOS and secured

Cable end attachments

- [x] Measure well depth: ~~estimate~~ 60 m

hole is narrow and snaking (first in dep. drill) → no laser or wooden block measurement

fim successful

- [x] Weights (5) attached
- [x] Weight cable attached (weight stack complete) Time: 4:29

Photos: DOM ids (☒ long ☒ short); connectors (☐ long ☐ short)

DOM position 60 -14 DOM id: TP 5P 0909
(T, Long) San Francisco

☒ Bottom shackle connected to weight stack Payout: 0
☒ Top shackle connected to 17 m steel cable
Photos: ☒ whole view

DOM position 59 DOM id: UP 6P4246
(U, Short) Cable mark: 3

☒ Bottom shackle connected to 17 m cable
☒ Top shackle connected to Yale grip Δ(59-60): 16.8 (use laser ranger)
☒ Main cable end taped to 17 m steel cable
Photos: ☐ phi orientation ☒ whole view

Breakout 30 ~~17.4 = 68 m~~ So Paro hits after DOM 56 Time: 5:08 pm

Depth:
Payout 0
↑ zeroed

- LongDOM
  - ☒ connector O-ring in place and ☒ lubed
  - ~~☐ breakout O-ring in place and ☐ lubed~~
  - ☒ connected
- ShortDOM
  - ☒ connector O-ring in place and ☒ lubed
  - ~~☐ breakout O-ring in place and ☐ lubed~~
  - ☒ connected

☒ Loose pigtails taped to cable

Paro Serial #: 98247 Nipple ☒ on ☐ off
☒ Connected ☒ Operational ☒ Air pressure [PSI]: 9.79
☒ Cable mark: taped ☐ Distance to DOM59: 1.7 m
→ 18.7 to DOM 60

☒ All clear to lower cable ☺

Photos: DOM ids (☒ long ☒ short); connectors (☐ long ☐ short)

DOM position 58 DOM id: TP 4P0083

(T, Long) Cable mark: 19.5

broken conn. see photo

☒ Bottom shackle connected
☒ Top clutch connected at link # 19 Δ(58-59): 16.9
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ phi orientation ☒ whole view

DOM position 57 DOM id: UP 64380

(U, Short) Cable mark: 36.5

broken conn. see photo

☒ Bottom shackle connected
☒ Top clutch connected at link # 19 Δ(57-58): 17.0
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ phi orientation ☒ whole view

Breakout 29

Time:
Now 5:24
Last b/o 5:08
Δt [min] 16

- LongDOM
  - ☒ connector O-ring in place and ☒ lubed
  - ~~☐ breakout O-ring in place and ☐ lubed~~
  - ☒ connected

Depth:
Paro 10.07 psi
Payout -1.62 broken ↑

- ShortDOM
  - ☒ connector O-ring in place and ☒ lubed
  - ~~☐ breakout O-ring in place and ☐ lubed~~
  - ☒ connected

☒ Loose pigtails taped to cable

☒ All clear to lower cab

Photos: DOM ids (☒ long ☒ short); connectors (☐ long ☐ short)

DOM position 56 DOM id: TP SP0797

(T, Long) Cable mark: 53.5

☒ Bottom shackle connected
☒ Top clutch connected at link # 19
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ phi orientation ☒ whole view

16.9
Δ(56-57): [redacted]

load = 905

DOM position 55 DOM id: UP 644262

(U, Short) Cable mark: 70.5

☒ Bottom shackle connected
☒ Top clutch connected at link # 19
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ phi orientation ☒ whole view

Δ(55-56): 16.9

Breakout 28 Time:

Now 5:35 pm
Last b/o 5:24
Δt [min] 11

- LongDOM
  - ☒ connector O-ring in place and ☒ lubed
  - ~~☐ breakout O-ring in place and ☐ lubed~~
  - ☒ connected

Depth:
Paro 10 psi → 60 m
Payout -3 m

- ShortDOM
  - ☒ connector O-ring in place and ☒ lubed
  - ~~☐ breakout O-ring in place and ☐ lubed~~
  - ☒ connected

☒ Loose pigtails taped to cable

Paro hit water just after beginning lowering [redacted] DOM 55

☐ All clear to lower cable ☺

Photos: DOM ids (☒ long ☒ short); connectors (☐ long ☐ short)

DOM position 54 DOM id: TP 5P0773

(T, Long) Cable mark: 87.5

+14 = 101.5 m depth by c.m.

☒ Bottom shackle connected

☒ Top clutch connected at link # 19 Δ(54-55): 16.9

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ phi orientation ☒ whole view *

DOM position 53 DOM id: UP 5P0952

(U, Short) Cable mark: taped over

(est. 104.5) + 14 = 118.5 depth by c.m.

☒ Bottom shackle connected

☒ Top clutch connected at link # 19 Δ(53-54): 16.9

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ phi orientation ☒ whole view

Breakout 27

Time:

Now 5:47

Last b/o 5:35

Δt [min] 12

Depth:

Paro 120.8

Payout -4.3

- LongDOM
  - ☒ connector O-ring in place and ☒ lubed
  - ~~☐ breakout O-ring in place and ☐ lubed~~
  - ☒ connected
- ShortDOM
  - ☒ connector O-ring in place and ☒ lubed
  - ~~☐ breakout O-ring in place and ☐ lubed~~
  - ☒ connected

☒ Loose pigtails taped to cable

* DOM 54 @ Floor: 120.73m = depth by Paro 2. should be 6.17 = 104 so add 31 to well depth? 91 m well? okay, using it...

☐ All clear to lower cable ☺

Photos: DOM ids (☒ long ☒ short); connectors (☐ long ☐ short)

DOM position 52 DOM id: TP 5H029

(T, Long) Cable mark: 121

+14 = 135 depth by c.m.

☒ Bottom shackle connected

☒ Top clutch connected at link # 19

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ phi orientation ☒ whole view

Believe 0209

DOM position 51

(U, Short) Cable mark: 138

+14 = 152 m

☒ Bottom shackle connected

☒ Top clutch connected at link # 19

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ phi orientation ☒ whole view

Breakout 26

Time:

Now 6:02

Last b/o 5:47

Δt [min] 15

Depth:

Paro 155.5

Payout -6.74

- LongDOM
  - ☒ connector O-ring in place and ☒ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☒ connected

☒ Loose pigtails taped to cable

(*) forgot Δ (Paro − DOM60):

91 − 18.7

= 72.3 m well estimate

fixed (*)

☐ All clear to lower cable ☺

Photos: DOM ids (☒ long ☒ short); connectors (☐ long ☐ short)

DOM position 50 DOM id: TP 5H0253

(T, Long) Cable mark: 155

☒ Bottom shackle connected
☒ Top clutch connected at link # 19 Δ(50-51): 16.9
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ phi orientation ☒ whole view
~~☒ Curved distance around DOM: ☐ Vertical distance:~~

DOM position 49 DOM id: UP [redacted] 4P0314

(U, Short) Cable mark: 172
tank = 186 depth by c.m.

☒ Bottom shackle connected
☒ Top clutch connected at link # 19 Δ(49-50): 16.9
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ phi orientation ☒ whole view
~~☐ Curved distance around DOM: ☐ Vertical distance:~~

Breakout 25

Time:
Now 6:09
Last b/o 6:02
Δt [min] 7

- LongDOM
  - ☒ connector O-ring in place and ☒ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☒ connected

Depth:
Paro 189.5
Payout −9.2

- ShortDOM
  - ☒ connector O-ring in place and ☒ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☒ connected

☒ Loose pigtails taped to cable

☒ All clear to lower cable ☺

Photos: DOM ids (☒ long ☒ short); connectors (☐ long ☐ short)

DOM position 48

DOM id: TP 5P0975

(T, Long) Cable mark: 189

☒ Bottom shackle connected
☒ Top clutch connected at link # 19 Δ(48-49): 16.9
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ phi orientation ☒ whole view

Load =

DOM position 47

DOM id: UP 5P0864

(U, Short) Cable mark: 206

☒ Bottom shackle connected
☒ Top clutch connected at link # 19 Δ(47-48): 17.0
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ phi orientation ☐ whole view

Breakout 24

Time:

Now 6:20
Last b/o 6:09
Δt [min] 11

- LongDOM
  - ☒ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☒ connected

Depth:
Paro 224.0
Payout −11.11

- ShortDOM
  - ☒ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☒ All clear to lower cable ☺

Photos: DOM ids (☒ long ☒ short); connectors (☐ long ☐ short)

DOM position 46 DOM id: TP 5P0861

(T, Long) Cable mark: 223

☒ Bottom shackle connected
☒ Top clutch connected at link # 19 Δ(46-47): 16.9
☐ Bow OK → ☒ clutch zip tied
Photos: ☒ phi orientation ☐ whole view

DOM position 45 DOM id: UP 5H0144

(U, Short) Cable mark: taped over

☒ Bottom shackle connected
☒ Top clutch connected at link # 19 Δ(45-46): 16.9
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ phi orientation ☒ whole view

Breakout 23 Time:

Now 6:33
Last b/o
Δt [min]

- LongDOM
  - ☒ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☒ connected

Depth:
Paro 258.0
Payout −13.9

- ShortDOM
  - ☒ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☒ connected

☒ Loose pigtails taped to cable 964 load (lbs)

☒ All clear to lower cable ☺

Photos: DOM ids (☒ long ☐ short); connectors (☐ long ☐ short)

DOM position 44 DOM id: TP 5P0993

(T, Long) Cable mark: 256.5

☒ Bottom shackle connected
☒ Top clutch connected at link # 19 Δ(44-45): 16.9 SHIFT CHANGE
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ phi orientation ☒ whole view

DOM position 43 DOM id: UP 5H0166

(U, Short) Cable mark: tape covered

☒ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(43-44): [illegible] 16.924
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 22

Time:
Now 6:55
Last b/o
Δt [min]
Depth:
Paro 293.03
Payout

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 42 DOM id: TP 6P1235

(T, Long) Cable mark: 290

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(42-43): 16.901
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 41 DOM id: UP 5Y0130

(U, Short) Cable mark: 307

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(41-42): 16.938
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 21

Time:
Now 7:14
Last b/o _____
Δt [min] _____
Depth:
Paro 327.50
Payout -22.49

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 40 DOM id: TP 6P1271

(T, Long) Cable mark: 324

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(40-41): 16.938
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 39 DOM id: UP 5P0774

(U, Short) Cable mark: 341

☑ Bottom shackle connected
☑ Top clutch connected at link # 17 Δ(39-40): 16.948
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 20

Time:
Now 7:29
Last b/o _____
Δt [min] _____
Depth:
Paro 362.11
Payout -25.53

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 38 DOM id: TP 4P0215

(T, Long) Cable mark: 358

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(38-39): 16.902
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

BROKEN CONNECTOR

DOM position 37 DOM id: UP 5P0862

(U, Short) Cable mark: 375

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(37-38): 16.955
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 19 Time:

Now 7:45
Last b/o _____
Δt [min] _____
Depth:
Paro 396.49
Payout _____

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 36 DOM id: TP 5P0943

(T, Long) Cable mark: 392

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(36-37): OOPS...
☑ Bow OK → ☑ clutch zip tied (on the phone...)
Photos: ☐ phi orientation ☐ whole view

DOM position 35 DOM id: UP 6P1236

(U, Short) Cable mark: 409

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(35-36): 16.938
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 18 Time:

Now 7:57
Last b/o _____
Δt [min] _____

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

Depth:
Paro 431.35
Payout -31.10

- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ Put two Kellers (one is for backup) in bucket of water/ice mix

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 34 DOM id: TP 5P0827

(T, Long) Cable mark: 426

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(34-35): 16.938
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 33 DOM id: UP 5H0108

(U, Short) Cable mark: 443

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(33-34): 16.963
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 17

Time:
Now 8:10
Last b/o _____
Δt [min] _____

Depth:
Paro 465.55
Payout -33.86

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 32 DOM id: TP 5P0605

(T, Long) Cable mark: 460

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(32-33): 16.940
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 31 DOM id: UP 5H0244

(U, Short) Cable mark: 477

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(31-32): 16.917
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 16

Time:
Now 8:24
Last b/o _____
Δt [min] _____
Depth:
Paro 500.07
Payout -37.55

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 30 DOM id: TP 6P1225
(T, Long) Cable mark: 494

☑ Bottom shackle connected
☐ Top clutch connected at link #_____ Δ(30-31): 16.941
☐ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 29 DOM id: UP 4P0256
(U, Short) Cable mark: 510

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(29-30): 16.933
☐ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 15 Time:

Now 8:39
Last b/o _____
Δt [min] _____

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

Depth:
Paro 547.67
Payout -42.50

- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

Thermistor ☑ Present ☑ Distance to DOM29: .969 above DOM 29
Keller ☑ Connected ☑ Operational ☐ Air pressure [PSI]: 1.09
Ser.#: 060 6739 ☐ Cable mark: _____ ☐ Distance to DOM29: _____

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 28 DOM id: TP 5H0123

(T, Long) Cable mark: 528

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(28-29): 16.937
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 27 DOM id: UP 6P1268

(U, Short) Cable mark: 544

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(27-28): 16.919
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 14

Time:
Now 8:50
Last b/o _____
Δt [min] _____

Depth:
Paro 568.77
Keller 601.17
Payout -44.02

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 26 DOM id: TP GP1201

(T, Long) Cable mark: 562

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(26-27): 16.938
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 25 DOM id: UP SY0092

(U, Short) Cable mark: 578

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(25-26): 16.903
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 13 Time:

Now 9:00
Last b/o _____
Δt [min] _____

Depth:
Paro 603.15
Keller 602.07
Payout -46.48

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 24 DOM id: TP 5P0667

(T, Long) Cable mark: 595

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(24-25): [redacted] 16.971
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 23 DOM id: UP 5P0826

(U, Short) Cable mark: 612

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(23-24): 16.943
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 12

Time:
Now 9:15
Last b/o _____
Δt [min] _____

Depth:
Paro 637.77
Keller 636.38
Payout -50.15

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 22 DOM id: TP 5Y0113

(T, Long) Cable mark: 630

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 ↓ Δ(22-23): 16.942
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

BROKEN CONNECTOR

DOM position 21 DOM id: UP 5P1068

(U, Short) Cable mark: 646

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(21-22): 16.960
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 11 Time:

Now 9:24
Last b/o _____
Δt [min] _____

Depth:
Paro 672.21
Keller 671.58
Pay

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 20 DOM id: TP 5P0717

(T, Long) Cable mark: 663

☑ Bottom shackle connected
☐ Top clutch connected at link #_____ Δ(20-21): 16.963
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view
☐ Curved distance around DOM:_____ ☐ Vertical distance:_____

DOM position 19 DOM id: UP 6Y4452

(U, Short) Cable mark: 680

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(19-20): 16.924
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view
☐ Curved distance around DOM:_____ ☐ Vertical distance:_____

Breakout 10

Time:
Now 9:35
Last b/o _____
Δt [min] _____
Depth:
Paro 706.57
Keller 706.77
Payout -56.61

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 18 DOM id: TP 6P1251

(T, Long) Cable mark: 697

☑ Bottom shackle connected
☑ Top clutch connected at link # 17
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Δ(18-19): 16.970

DOM position 17 DOM id: UP 5P0928

(U, Short) Cable mark: 713

☑ Bottom shackle connected
☑ Top clutch connected at link #_____
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Δ(17-18): 16.921

Breakout 9

Time:

Now 10:25
Last b/o _____
Δt [min] _____

Depth:
Paro 742.20
Keller 741.06
Payout -58.09

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 16 DOM id: TP 4P0299

(T, Long) Cable mark: 731

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(16-17): 16.937
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 15 DOM id: UP 5P0988

(U, Short) Cable mark: 747

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(15-16): 16.962
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 8

Time:
Now 10:35
Last b/o _____
Δt [min] _____

Depth:
Paro 776.86
Keller 775.34
Payout -63.01

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 14 DOM id: TP 6P1315

(T, Long) Cable mark: 765

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(14-15): 16.945
☐ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 13 DOM id: UP 4Y0040

(U, Short) Cable mark: 781

☐ Bottom shackle connected
☐ Top clutch connected at link # _____ Δ(13-14): 16.965
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 7

Time:
Now 10:45
Last b/o _____
Δt [min] _____

Depth:
Paro 811.19
Keller 809.61
Payout -66.43

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 12 DOM id: TP 4P0309

(T, Long) Cable mark: ~~#~~ 799

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(12-13): 16.931
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 11 DOM id: UP 4P0222

(U, Short) Cable mark: 815

☑ Bottom shackle connected
☐ Top clutch connected at link #_____ Δ(11-12): 16.941
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 6 Time:

Now 11:00
Last b/o _____
Δt [min] _____

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

Depth:
Paro 845.75
Keller 846.63
Payout -68.88

- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 10 DOM id: TP 6Y4339

(T, Long) Cable mark: ~ 832

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(10-11): 16.902
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 9 DOM id: UP 5Y0108

(U, Short) Cable mark: 849

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(9-10): 16.945
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 5

Time:
Now 11:14
Last b/o _____
Δt [min] _____

Depth:
Paro 880.26
Keller 883.74
Payout -74.01

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 8 DOM id: TP 644345

(T, Long) Cable mark: 866

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(8-9): 16.960
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 7 DOM id: UP 4Y0046

(U, Short) Cable mark: _____

☑ Bottom shackle connected
☑ Top clutch connected at link # 17 Δ(7-8): 16.869
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 4 Time: 23:29

Now 11:30
Last b/o _____
Δt [min] _____

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

Depth:
Paro 916.25
Keller 919.84
Payout -78.71

- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short) 5

DOM position 6 DOM id: TP #H0119 BROKEN CONNECTOR

(T, Long) Cable mark: 900

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(6-7): 16.970
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 5 DOM id: UP 5H0104

(U, Short) Cable mark: 917

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(5-6): 16.924
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 3

Time:
Now 11:40
Last b/o _____
Δt [min] _____

Depth:
Paro 949.47
Keller 949.78
Payout -80.88

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 4 DOM id: TP 5P0555

(T, Long) Cable mark: 934

☐ Bottom shackle connected
☐ Top clutch connected at link #_____ Δ(4-5): 16.956
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 3 DOM id: UP 6P1232

(U, Short) Cable mark: NA

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(3-4): 16.910
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 2

Time:
Now 11:50
Last b/o
Δt [min]

Depth:
Paro 984.11
Keller 985.06
Payout -84.73

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

Photos: DOM ids (☐ long ☐ short); connectors (☐ long ☐ short)

DOM position 2 DOM id: TP 4P0267

(T, Long) Cable mark: 968

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(2-3): 16.936
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 1 DOM id: UP 5P0642

(U, Short) Cable mark: 984

☑ Bottom shackle connected
☐ Top clutch connected at link # _____ Δ(1-2): 16.952
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 1

Time:
Now 12:01
Last b/o _____
Δt [min] _____

Depth:
Paro 1018.63
Keller 1020.33
Payout -90.40

- LongDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

No second Paro no more…

☑ Group photo

☐ All clear to lower cable ☺

Uphole Pressure Sensor (Setra)

After DOM1 is safely under the surface (> 50 m)

Time:_____

☐ Stop the cable winch

☐ Lower Setra pressure sensor into hole

☐ Distance to Setra from floor:_____

☐ Setra readout verified with monitoring system

☐ Well depth from Setra: _____

☐ Well depth from laser: 54,477

If the two well depth measurements agree:

☐ Switch to Setra well depth in monitoring system

Time: 1:10

Now the String Drop begins

String Drop

*The target depth is **2450** m*

☐ Switch cable winch to computer control

☐ Speed: .49	Time: 1:10	Depth: 1165
☐ Speed: .52	Time: 1:26	Depth: 1535
☐ Speed: .36	Time: 1:36	Depth: 1786
☐ Speed: .37	Time: 1:45	Depth: 1936
☐ Speed:	Time:	Depth:
☐ Speed:	Time:	Depth:

Depth Monitoring (log on the fly – do not stop for this)

Depth by Paro[1]	Time	Well depth[1]	Depth by cable marks[2]	Depth by Payout[1]	Δdepth P-K[1]
~~1000 m~~					
~~1500 m~~ 1502.00	1:25	53.049	1479	-268.81	-6.62
~~2000 m~~					
~~2100 m~~					
2200 m	1:56	50.947	2170	-802.39	-10.87
~~2300 m~~					
~~2400 m~~ 2399	2:10	50.395	2369	-923.44	-14.88

[1]Read off monitoring screen

[2]Cable mark offset = 3 (from p.4) (at DOM59) – 17 m = -13.8 (at DOM60)

16.8

☐ Switch to manual control @ 2400 m

☐ Well depth

~~@ 2420:~~ _____

~~@ 2440:~~ 50.242 2445

☐ Position string at target depth of **2450** m Time: 2:15

☐ String secured with Yale grip and anchor chain Time: 2:41

FINAL WELL DEPTH

Absolute depth with bottom Paro
(depth in *meters* and pressure in *PSI*)

☐ Distance from Paro to DOM60:

$d_{Paro\text{-}DOM59}$ = _____ (from p. 4)

$d_{Paro\text{-}DOM60}$ = ($d_{Paro\text{-}DOM59}$ + 17) m = _____ ← insert below

☐ Convert Paro pressure to string depth:

$K = 3.78151 \cdot 10^{-6}$ /PSI (compressibility of aerated water)

(use 6 decimals for exp's)

Ambient pressure (from p. 4): P_0 = _____ PSI → $\exp(-KP_0)$ = _____

Pressure reading (from screen): P = _____ PSI → $\exp(-KP)$ = _____

Subtract exponentials → = _____

× $1.85947 \cdot 10^5$

Paro depth in water → = _____ m

Add distance to DOM60 (above) → + _____ m

Add well depth → + _____ m

Depth of bottom DOM → = _____ m

Final depth estimates

◀---------- read off deployment screen ---------▶

Time:	Paro	Keller	Payout	Cable marks
Reading	3418.86 PSI	2700.01 PSI	-961.69 m	24/9 m
Offset	16.00 PSI	1.09 PSI	0 m	-13.8 m
Well depth	m		This space is intentionally left blank	
Dist. to DOM60	[illegible] m	[illegible] m		
DEPTH (DOM60)	2450.45	2464.53		2432.8

Time: 2:41

Final depth (DOM60): 2450.45

Deployment Closeout

- [x] Log entries complete
- [x] String safely secured
- [x] Hole covered and secured
- [ ] Equipment safely shutdown and secured
- [x] Deployment data OK (in database)
- [ ] Site cleanup
- [ ] Deployment crew dismissed
- [x] String deployment complete

Time: 2:41 Date: 1/27/07 TCH

Shift Lead: A. Karle, AK.
name / signature

Logger: M. D'Agostino
name / signature

PTS Lead: M. D'Agostino
name / signature

Deployment Manager: [signature]
name / signature

Safety Officer: [signature]
name / signature

IceCube On-ice Lead: A. Karle
name / signature

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IceCube Deployment Monitoring Check Sheet (IDMCS)

Version 4.0
December 12, 2006

Kurt Woschnagg, UCB

General instructions

- Read through this entire document before deployment starts.
- Deployment monitoring is done with a computer (housed in the TOS) running drill/deployment monitoring software (by Chuck Rentmeesters) with a GUI for readout and manual inputs. All deployment sensor data and manual inputs are logged and saved on disk by this system.
- For each manual entry into the monitoring interface (marked **ENTER** below), also make a note in the logbook (marked *Logbook* below).
- For each entry in the logbook, include time and name (initials).
- Write down as much useful information you can think of (it *will* all be needed sooner or later).

Measurement instructions

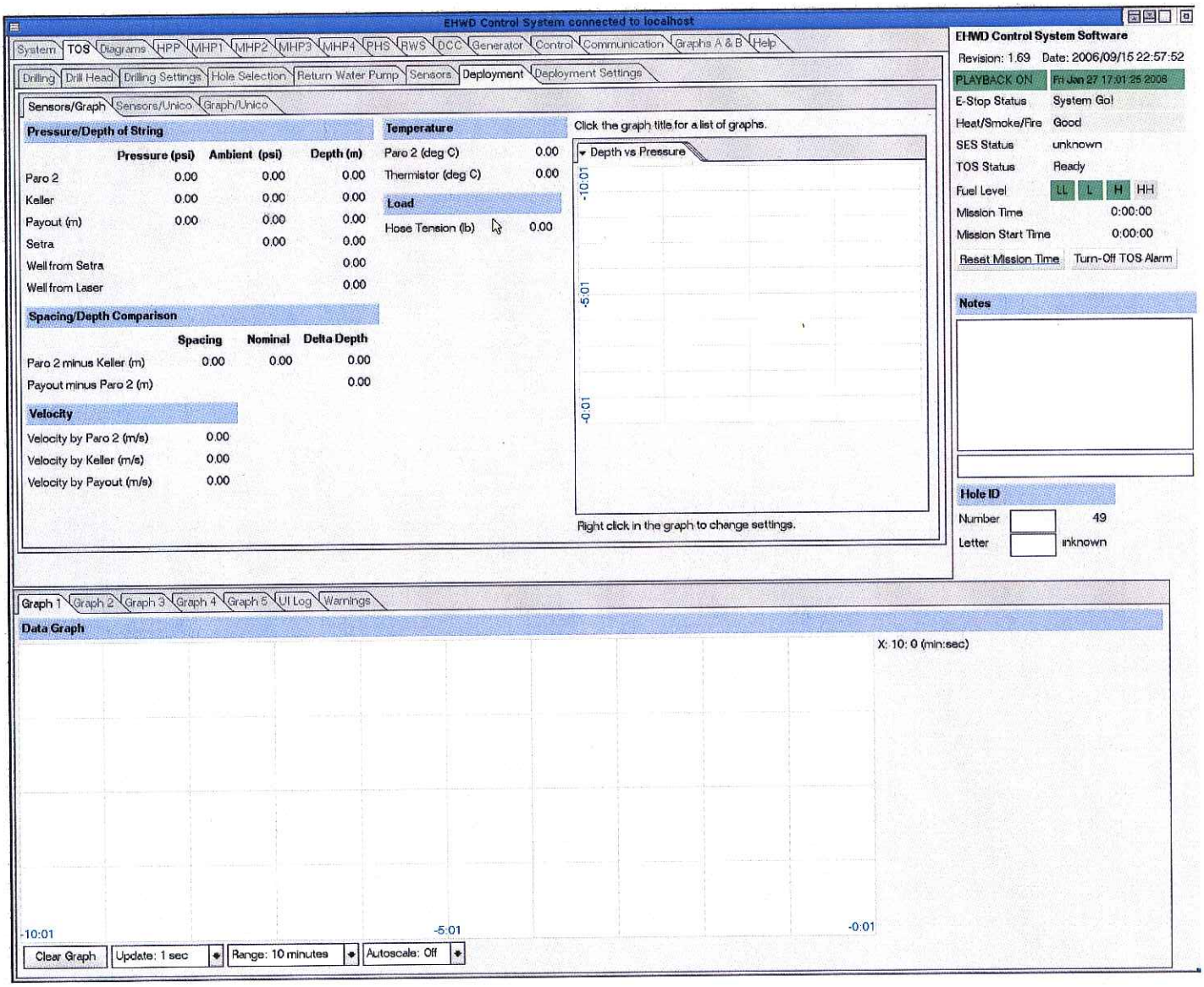
- All vertical measurements are relative to the floor of the tower (not the lip of the kick board).
  - Measure well depth from this level.
  - Take cable mark readings at this level.
- The location of a DOM on a string (for distance measurements) is defined as the position of the center of the sphere (at the equator defined by the harness).
- When taking a cable mark reading, estimate the location to nearest cm (0.01 m) with closest cable marks and tape measure.
- The location of a Paro is defined at the bottom of its body (at the little hole with the nipple).
- The location of a Keller is defined at the row of holes in the black plastic nose cap.
- The distance between a pressure sensor and the nearest DOM is positive/negative if the unit is above/below the DOM.
- Well depth is measured with a laser ranger (if possible), or with a tape measure (if not).
- The unit used for all distances and depths during deployment is **meters**.

Screen Tab: TOS ▶ Deployment

▶ Sensors/Graph

This is the main tab used during deployment monitoring. No input required on this tab.

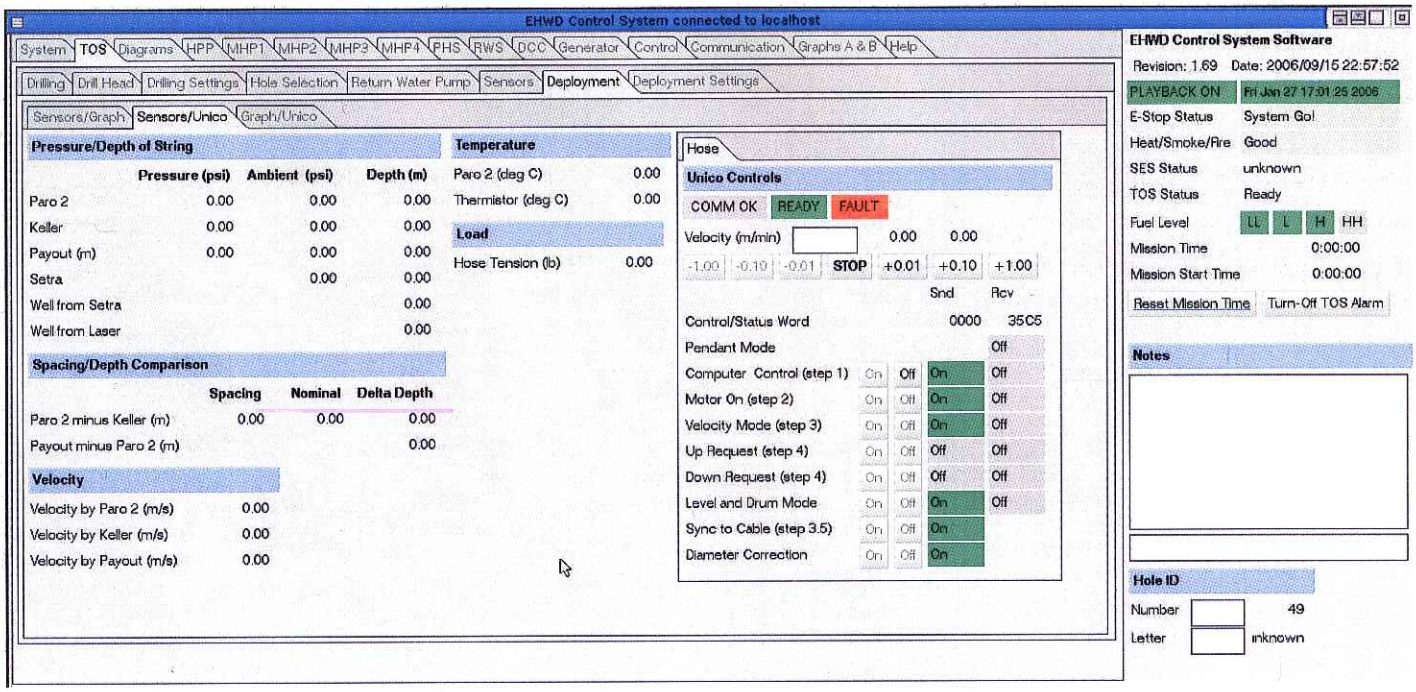
Pressure/Depth of String Current and ambient (air) pressures, and the corrected depths at DOM60.
Spacing/Depth Comparison Difference in depth from pressure data. *Should be stable during deployment!*
Velocity The deployment velocity calculated from recent pressure/payout readings.
Temperature Temperature readings.
Load Cable tension from load cell data.



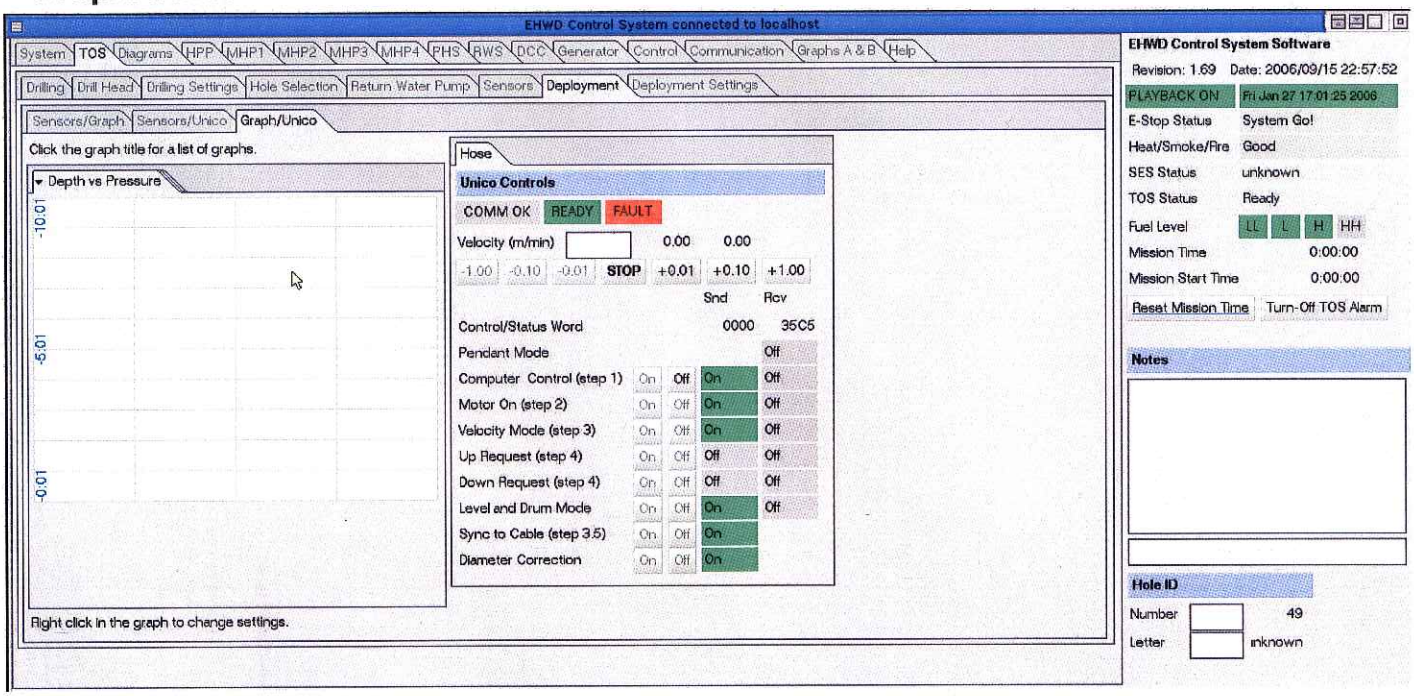
Screen Tab: TOS ▶ Deployment

▶ Sensors/Unico

This tab has the same data display as the main Sensors/Graph tab above, but instead of the graph window this tab has the controls for the Unico drive which controls the winch.



▶ Graph/Unico

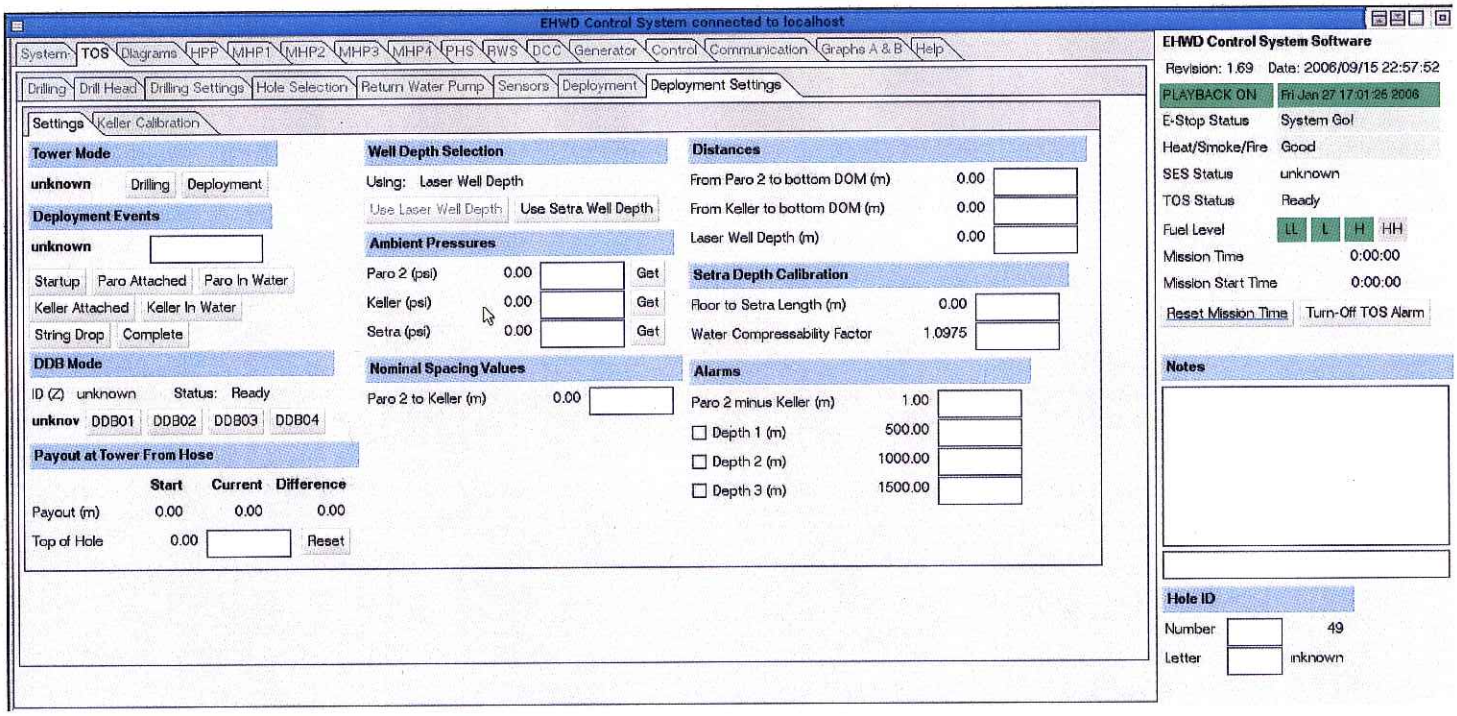


Screen Tab: TOS ► Deployment Settings

► Settings

This is the main tab for entering information that is needed for a correct depth calibration of the pressure data. Make sure you understand what all the entries mean before deployment starts.

Tower Mode	Click on "Deployment".
Deployment Events	Click the appropriate button when one of the predefined events occurs (see list below).
DDB Mode	Select the correct DDB ID before deployment startup (needed for Keller calibration).
Payout at Tower	Reset payout when bottom DOM is at tower floor level.
Well Depth Selection	Select source of well depth used in depth calculation.
Ambient Pressures	Press "Get" when pressure sensor is attached to cable, or enter reading at that time.
Nominal Spacing	Enter calculated distance between Paro and Keller.
Distances	Enter calculated distances between Paro/Keller and DOM60, and well depth.
Setra Depth Calib.	Enter measured length of Setra cable, from floor to sensor.
Alarms	Set values for which alarm is to be sounded (optional).



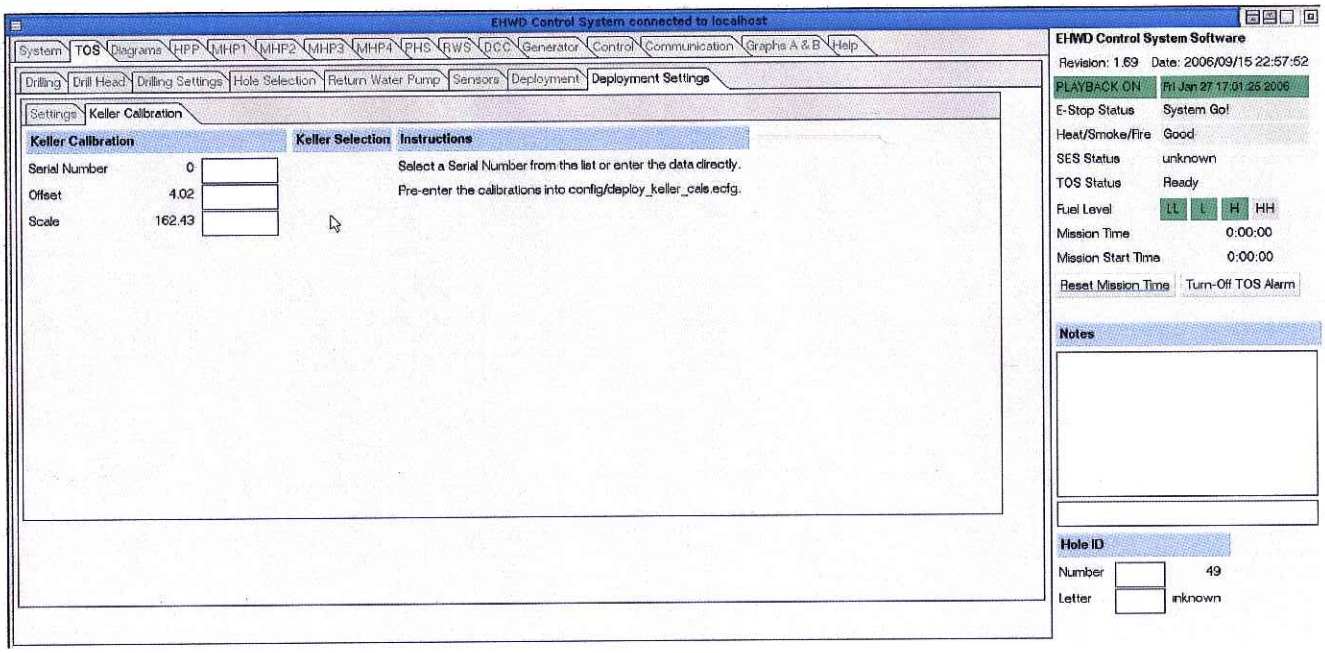
Deployment Events

☐ **Startup**	Click when the deployment begins.
☐ **Paro Attached**	Click when the Paro is attached to the breakout and starts sending data.
☐ **Paro In Water**	Click when the Paro reaches the water.
☐ **Keller Attached**	Click when the Keller is attached to the breakout and starts sending data.
☐ **Keller In Water**	Click when the Keller reaches the water.
☐ **String Drop**	Click when the String Drop phase begins, after all DOMs have been attached.
☐ **Complete**	Click when the deployment ends (string is secured, etc).

Screen Tab: TOS ▶ Deployment Settings

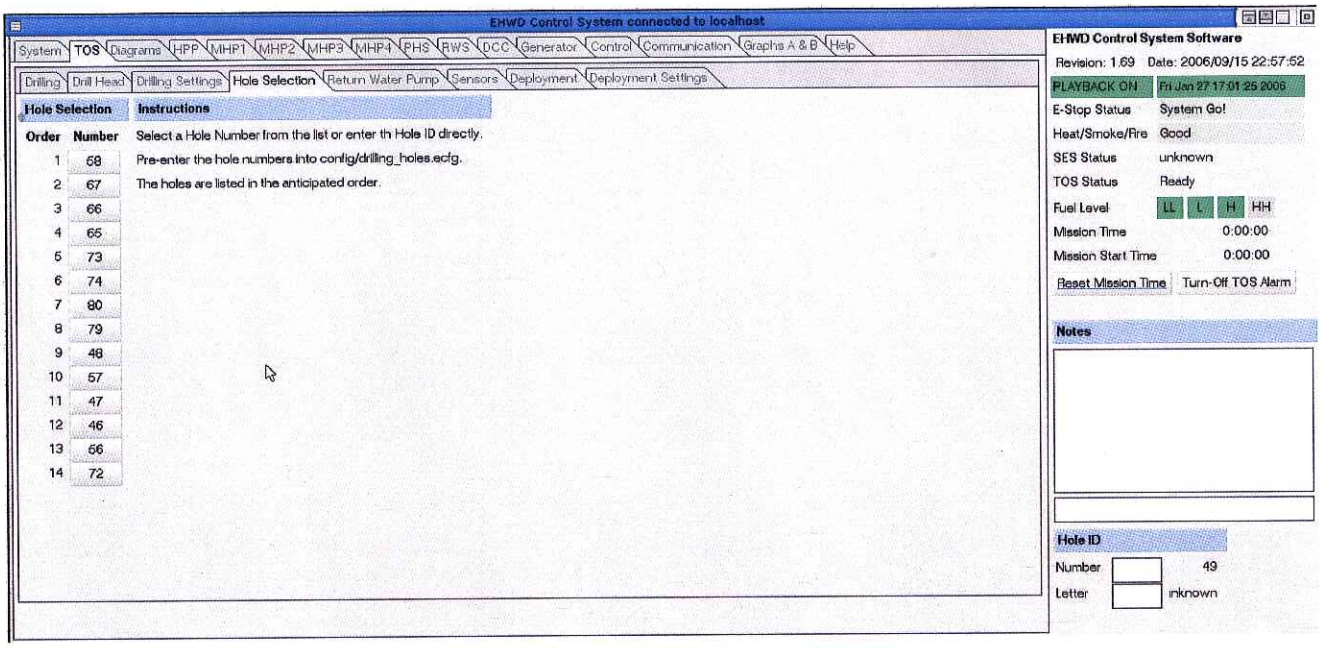
▶ Keller Calibration

On this tab you select the Keller ID by clicking on the appropriate button. The correct (pre-programmed) calibration constants will then be used for the Keller pressure reading.



Screen Tab: TOS ▶ Hole Selection

On this tab you select the hole/string number, *either* by clicking on the numbered button on the left *or* by entering it in the "Hole ID" field in the lower right hand corner.



Distances between devices

calculate manually and enter on Deployment Settings tab

Distance between Paro and DOM60: 17 + _____ = _____

Distance between Keller and DOM60: 31·17 + _____ = _____

= 30 * 0 + 210 + 17 +

= 527 +

Distance between Paro and Keller: _____ = _____

Notes:

There are 60 DOMs on every string.

The nominal spacing between DOMs is 17 m.

The nominal spacing between breakouts is 34 m.

Breakouts (1-30) and DOMs (1-60) are counted from the top.

The Keller is at breakout 15, just above DOM29.

The Paro is at breakout 30, just above DOM59.

(Fun Fact: There used to be a second Paro at breakout 1 on the first four strings)

Pressure conversions

	PSI	mH_2O	Atm
1 PSI =	1	0.70	0.07
1 mH_2O =	1.4	1	0.1
1 atm =	14.7	10.3	1

Check Sheet

STRING # 46

DATE: 1/26/07

Before Deployment

- [x] **Action**: Locate laser ranger for well depth measurements.
- [x] **Action**: Locate metric tape measure.
- [x] **Action**: Locate one Paro and one Keller, *plus spares* of each.
- [x] **Action**: Locate bucket (for cooling of Keller sensor with water/ice mix).
- [x] **Action**: Fill bucket with snow and place in heated area to make slush.
- [ ] **Action**: Locate Setra ~~uphole pressure assembly~~ (sensor + cable).

Deployment Startup

- [x] **Action**: Click "Deployment" button under "Tower Mode" on Deployment Settings tab.
- [x] **Action**: Select string (=hole) number on Hole Selection tab.
- [x] **Action**: Note deployment start time.

  Logbook: Time

- [x] **Action**: Click "Reset Mission Time" on the right panel on the deployment screen.
- [x] **Action**: Click "Startup" under Deployment Events.

☒ **Action**: Note DDB id number (1, 2, 3, or 4).

ENTER: DDB# (select button)

Logbook: DDB#

☐ **Action**: Take a well depth measurement with the laser ranger.

ENTER: Well depth [m] see log

Logbook: Well depth

☒ **Action**: Reset Payout when DOM60 breaks the plane of the floor.

CLICK: "Reset" button (Top of Hole Reset) on Deployment Settings ▶ Settings tab.

Logbook: Payout Start value

☒ **Action**: Get cable mark reading at DOM59.

Logbook: Cable mark [m]

☒ **Action**: Attach Paro at breakout #30. (This is called "Paro2" on the monitoring screen).

Logbook: Paro serial number

☒ **Action**: Click "Paro Attached" under Deployment Events.

☒ **Action**: Measure distance between Paro location and nearest DOM.

Estimate distance to *bottom* DOM by adding *n* 17-meter segments
(*n* should be 1 for the Paro since nearest DOM is #59).

ENTER: Distance [m] from Paro to *bottom* DOM (#60)

Logbook: Distance to nearest DOM, nearest DOM#, estimated distance to DOM60

☐ **Action**: Get cable mark reading at Paro.

Logbook: Cable mark [m]

☒ **Action**: Take Paro air pressure reading just before it breaks the water surface.

ENTER: Ambient pressure [PSI] for Paro

Logbook: Paro2 air pressure

During Deployment

☒ **Action**: Click "Paro In Water" under Deployment Events.

☐ **Action**: Measure curved distance of main cable going around DOM (for at least two DOMs).

Logbook: Straight (vertical) distance for DOM segment, curved cable distance

☑ **Action**: Measure real distance between neighboring DOMs (for every pair) with laser ranger.

Logbook: DOM#'s, distance

☑ **Action**: Put Keller (and one spare) in bucket of water (at near freezing temperature) at least one hour before breakout #15 is reached.

Note: The Keller is not temperature corrected and must therefore be brought to the temperature of the water in the hole (0-2°C) before the air pressure offset is determined.

☑ **Action**: Attach Keller at breakout #15.

ENTER: Keller serial number 0606739

Logbook: Keller serial number

☑ **Action**: Click "Keller Attached" under Deployment Events.

☑ **Action**: Measure distance between Keller and nearest DOM.

Estimate distance to *bottom* DOM by adding *n* 17-meter segments (*n* should be 31 for Keller since nearest DOM is #29).

ENTER: Distance [m] from Keller to *bottom* DOM (#60) .969 + 527 = 527.969

Logbook: Distance to nearest DOM, nearest DOM#, estimated distance to DOM60

☐ **Action**: Get cable mark reading at Keller.

Logbook: Cable mark [m] for Keller

☐ **Action**: Determine Keller air pressure offset before (or just as) Keller hits water.

ENTER: Ambient pressure [PSI] for Keller

Logbook: Ambient Keller pressure

☐ **Action**: Click "Keller In Water" under Deployment Events.

☐ **Action**: Get cable mark reading at top DOM.

Logbook: Cable mark [m]

☐ **Action**: Measure well depth as soon as top DOM is under water.

ENTER: Well depth [m]

Logbook: Well depth [m], measurement method (laser/tape)

Between DOM attachment and String Drop

☐ **Action**: Lower Setra assembly into hole (after top DOM is at least 50 m under the surface).

☐ **Action**: Measure distance between Setra sensor and floor of tower (distance marked on cable).

ENTER: Distance Setra to floor [m]

Logbook: Distance Setra to floor

☐ **Action**: Measure well depth with Setra system and laser ranger and compare.

Logbook: Well depth from Setra [m], well depth from laser [m]

☐ **Action**: If the two well depth meaurements agree, switch from laser to Setra in monitoring system.

During String Drop

☐ **Action**: Click "String Drop" under Deployment Events.

☐ **Action**: Measure well depth manually (with laser ranger and/or tape measure).

(if shift lead allows: repeat several times during drop)

ENTER: Well depth [m]

Logbook: Well depth, measurement method (laser/tape)

☐ **Action**: Read cable marks at regular intervals.

Logbook: Cable mark [m]; depth readings [m] (Paro, Keller); time

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End of Deployment

☐ **Action**: Get final pressure readings from Paro and Keller when final depth has been reached.

Logbook: Pressure readings [PSI]; corrected depths [m] (from screen)

☐ **Action**: Get final well depth reading (laser and/or Setra).

HAS TO BE SIMULTANEOUS WITH FINAL PRESSURE READINGS!

Logbook: Well depth [m] (laser); well depth [m] (Setra)

☐ **Action**: Note deployment end time.

Logbook: Time

☐ **Action**: Click "Complete" under Deployment Events.

DOMs for String 46 (Hole 12)

Name	ID #	Position	
San_Francisco	TP5P0909	60	
Kamephis	UP6Y4246	59	
Peach	TP4P0083	58	
Qi	UP6Y4380	57	
	TP5P0797	56	
Cizin	UP6Y4262	55	
Zoology	TP5P0773	54	
Washington	UP5P0952	53	
Talgoxe	TP5H0209	52	?
Anka	UP5H0236	51	
Ringkobben	TP5H0253	50	
Gerbil	UP4P0314	49	
West_Nile_Virusish	TP5P0975	48	
Angelology	UP5P0864	47	
Hartford	TP5P0861	46	
Bodharan	UP5H0144	45	
Mononucleosis	TP5P0993	44	
	UP5H016	43	?
Magnolia	TP6P1235	42	
	UP5Y0130	41	?
Tansy	TP6P1271	40	
Carpology	UP5P0774	39	
Mole	TP4P0215	38	
Anthropology	UP5P0862	37	
Rubella	TP5P0943	36	
Dracula	UP6P1236	35	
Europhilia	TP5P0827	34	
Lillbredskobben	UP5H0108	33	
Placophobia	TP5P0605	32	
Steglits	UP5H0244	31	
Queenanneslace	TP6P1225	30	
Skomakarkobben	UP5H0256	29	
Labbkobb	TP5H0123	28	
Tulip	UP6P1268	27	
Lilac	TP6P1201	26	
	UP5Y0092	25	
Taurophobia	TP5P0667	24	
Entomology	UP5P0826	23	
	TP5Y0113	22	
Scabies	UP5P1068	21	
Motorphobia	TP5P0717	20	
Shun	UP6Y4452	19	
Chincerinchee	TP6P1251	18	
Georgia	UP5P0928	17	
Tayra	TP4P0299	16	
Japonophilia	UP5P0988	15	
Pamela_Sue_Voorhees	TP6P1315	14	
Aktien	UP4Y0040	13	

Vaquita	TP4P0309	12	
Aardvark	UP4P0222	11	
Ah_Cun_Can	TP6Y4339	10	
Isuzu_Rodeo	UP5Y0108	9	
Ahulane	TP6Y4345	8	
DAB	UP4Y0046	7	
Trana	TP5H0119	6	
Glada	UP5H0104	5	
Wyvern	TP5P0555	4	
Tea_Olive	UP6P1232	3	
Raccoon	TP4P0267	2	
Iophobia	UP5P0642	1	
Sparv	TP5H0131		
Olyckskobben	TP5H0213		
Wannsee	TP5Y0113		
Livlandskobben	UP5H0106		
Dromophobia	UP5P0558		
Helminthology	UP5P0797		
Arizona	UP5P1020		Rejected by Krasberg
GMC_Jimmy	UP5Y0092		