DEPLOYMENT LOG for IceCube STRING # 78

Deployment Start: *at* 1554 *on* JAN 13, 07

Deployment End: *at* 6AM *on* Jan 14

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

Deployment Crew

Position	First Shift	Second Shift
Shift lead	Tom Harm	Albrecht
DOM install 1 (high)	Daren Blythe	Darel
DOM install 2 (low)	GABRIEL	Karthik
DOM supply 1 / DOM install 3	JAMES ROTH	Greg Sullivan
DOM supply 2 / floater	SVEN LIDSTROM	Ryan
Winch operator (cable & tower)	DAR GIBSON (Dangerous Shirley)	Dar
Notary (logbook & photos)	MEL ZIMMERMAN	Mel
PTS (monitoring / sensors)	JUSTIN VANDENBERG	Michelangelo
Support (optional)		

Time of shift change:

Summary/Comments: 4 drill 3.5 hrs — 3 drill 10.5

This is fun!

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:_____

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:_____

☑ Cable winch anchored and ☐ operational
☑ Tower winch operational
☑ Tie off verified
☑ Yellow rope verified

No (Pressure not working)
☐ Deployment monitoring system (PTS) operational ☐ DDB#_____
☐ Pressure sensors on hand: Paro and Keller, with backups
☑ Laser ranger, tape measure (metric) on hand

☐ Bleeder string installed (on quad connectors inside cable reel drum)

☐ Uphole pressure system on hand: Setra sensor and cable

☑ DOMs placed in racks
☑ Weight stack on hand: weights (5) and 2 m cable
☐ 17 m string extension steel cable on hand

Safety checks complete (☐ 1st shift ☐ 2nd shift)
☑ ☐ Crew safety briefing
☑ ☐ E-stop locations identified
☑ ☑ TOS evacuation procedures reviewed
☑ ☐ Mustering point identified
☑ ☐ Snow mobile driver(s): _____
☑ ☑ CPR trained: everyone
☑ ☐ Food runners: _____
call galley at 65521

☑ End of Main Cable brought into TOS and secured

Cable end attachments

☑ Measure well depth: 75.2 m
☑ Weights (5) attached
☑ Weight cable attached (weight stack complete) Time:_____

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

DOM position 60 DOM id: TP 6P1371
(T, Long)

☑ 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 5P1036
(U, Short) Cable mark: 1.8

☑ Bottom shackle connected to 17 m cable
☑ Top shackle connected to Yale grip Δ(59-60): 17.1 (use laser ranger)
☐ Main cable end taped to 17 m steel cable
Photos: ☐ phi orientation ☐ whole view

Breakout 30 Time: 17:01

Depth:
Payout 17

- 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

TP6P1371

☐ Loose pigtails taped to cable

Paro Serial #: 104657 Nipple ☑ on ☐ off
☑ Connected ☑ Operational ☑ Air pressure [PSI]: 10.1
☐ Cable mark: 3.4 ☐ Distance to DOM59: 1.6

☐ All clear to lower cable ☺

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

DOM position 58 DOM id: TP5P0969

(T, Long) Cable mark: 19

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(58-59): 14.7
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 57 DOM id: UP6P1384

(U, Short) Cable mark: ~~10~~ Can't Find (under tape)

☑ Bottom shackle connected
☐ Top clutch connected at link # 19 Δ(57-58): 16.8
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 29

Time:
Now 17:~~29~~17
Last b/o _____
Δt [min] _____

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

Depth:
Paro 10.9
Payout 13.7

- 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 ☺

* Payout is reading inaccurate

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

DOM position 56 DOM id: TP 6P1416

(T, Long) Cable mark: 53

☐ Bottom shackle connected
☐ Top clutch connected at link # 19 Δ(56-57): 16.9
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 55 DOM id: UP SP0996

(U, Short) Cable mark: 70

☐ Bottom shackle connected
☐ Top clutch connected at link # 19 Δ(55-56): 16.4
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 28

Time:
Now 17:34
Last b/o
Δt [min]

Depth:
Paro 10.1
Payout 11.0

- 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 54 DOM id: TP 64y4267

(T, Long) Cable mark: 87

☐ 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 6P1368

(U, Short) Cable mark: Hidden under tape

☐ Bottom shackle connected
☐ Top clutch connected at link #_____ Δ(53-54): 16.9
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 27

LUNCH BREAK- Time:
Now 1844
Last b/o _____
Δt [min] _____

Depth:
Paro 10.1
Payout 7.82

- 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) 6P1389

DOM position 52 DOM id: TP 6P1389

(T, Long) Cable mark: X

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(52-53): 16.9
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 51 DOM id: UP 5P0968

(U, Short) Cable mark: X

☑ Bottom shackle connected
☑ Top clutch connected at link # Δ(51-52): 16.9
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 26

Time:
Now 1905
Last b/o
Δt [min]

Depth:
Paro 10.1
Payout 5.75

- 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 50 DOM id: TP 5PG989

(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 6P1278

(U, Short) Cable mark: 10210

☐ 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 1914
Last b/o _____
Δt [min] 9

Depth:
Paro _____
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 48 DOM id: TP UP1395

(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

DOM position 47 DOM id: UP SHP128 (spare)

(U, Short) Cable mark: 206

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

Breakout 24

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

La
Δt
Paro
Payout 2.3

- 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 SP1005
(T, Long) Cable mark: 223

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(46-47): 16.9
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 45 DOM id: UP 6P1404
(U, Short) Cable mark: 240

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(45-46): 16.9
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 23

Time:
Now 19:40
Last b/o 10min
Δt [min]

Depth:
Paro 255
Payout N/A

- 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 44 DOM id: TP SP0853

(T, Long) Cable mark: 257

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(44-45): 16.9
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 43 DOM id: UP 164312

(U, Short) Cable mark: 274

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(43-44): 16.9
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 22

Time:
Now 19:55
Last b/o
Δt [min] 15
Depth:
Paro 288.4
Payout N/A

- 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: TP5P0971

(T, Long) Cable mark: 291

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(42-43): 16.16.9
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 41 DOM id: UP 6Y4332

(U, Short) Cable mark: [illegible] X = couldn't read under tape

☐ Bottom shackle connected
☐ Top clutch connected at link # 19 Δ(41-42): 16.9
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 21

Time:
Now 20:09
Last b/o
Δt [min] 15

Depth:
Paro 326
Payout N/A

- 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 5P0937

(T, Long) Cable mark: 325

☐ Bottom shackle connected
☐ Top clutch connected at link # 19 Δ(40-41): 16.945
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 39 DOM id: UP 5P1042

(U, Short) Cable mark: ~~8~~ ?

☑ Bottom shackle connected
☐ Top clutch connected at link # 19 Δ(39-40): 16.9
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 20

* BROKEN CONNECTOR but still deployed b/c it was suitable.

Time:
Now 20:25
Last b/o
Δt [min] 15 min

Depth:
Paro 2557.5
Payout N/A

- 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 6P1367

(T, Long) Cable mark: 359

☐ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(38-39): 16.948
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 37 DOM id: UP 5P1046

(U, Short) Cable mark: 376

☐ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(37-38): 16.913
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 19

broke yellow rope & spent 10 min locating a new one.

Time:
Now 20:45
Last b/o
Δt [min] 20 min

Depth:
Paro ~~200~~ 392
Payout N/A

- 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: TP0P1369

(T, Long) Cable mark: 393

☐ Bottom shackle connected
☐ Top clutch connected at link # 19 Δ(36-37): 16.9
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 35 DOM id: UP6Y430C

(U, Short) Cable mark: 410

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(35-36): 18.9
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 18

Time:
Now 21:00
Last b/o 15min
Δt [min]

Depth:
Paro 425
Payout N/A

- 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

☐ 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 6P1419

(T, Long) Cable mark: 427

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(34-35): 16.94
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 33 DOM id: UP 5P0588

(U, Short) Cable mark: 444

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(33-34): 16.96
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 17

Time:
Now 21:11
Last b/o
Δt [min] 11 min
Depth:
Paro 459
Payout N/A

- 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: TP5P0985

(T, Long) Cable mark: 461

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(32-33): 16.98
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 31 DOM id: UP 6P1204

(U, Short) Cable mark: 478

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(31-32): 16.9
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 16

Time:
Now 21:23
Last b/o
Δt [min] 12 min
Depth:
Paro 493
Payout N/A

- 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: TP6P1413

(T, Long) Cable mark: 495

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(30-31): 16.9
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 29 DOM id: UP5H0242

(U, Short) Cable mark:

☐ Bottom shackle connected
☑ Top clutch connected at link # Δ(29-30): 16.920
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 15 Time:

Now 21:40
Last b/o 17min
Δt [min]

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

Depth:
Paro 528
Payout N/A

- 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: .732 m above 29

Keller ☑ Connected ☑ Operational ☑ Air pressure [PSI]: -5.29
Ser.#: 0606733 ☑ Cable mark: 513 ☐ Distance to DOM29:

☑ All clear to lower cable ☺

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

DOM position 28 DOM id: TP 6Y4249

(T, Long) Cable mark: 529.5

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(28-29): 16.927
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 27 DOM id: UP 6Y4298

(U, Short) Cable mark: 546.5

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(27-28): 16.944
☑ Bow OK → ☐ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 14

Time:
Now 10:12
Last b/o _____
Δt [min] _____

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

Depth:
Paro 563
Keller 603.83
Payout _____

- 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 5P0977

(T, Long) Cable mark: 564

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 (same as before...) Δ(26-27): 16.987
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 25 DOM id: UP 6Y4460

(U, Short) Cable mark: NA

☐ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(25-26): 16.954
☑ Bow OK → ☐ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 13

Time:

Now 10:31
Last b/o _____
Δt [min] _____

Depth:
Paro 597
Keller 602
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 24 DOM id: TP64 4259

(T, Long) Cable mark: 598

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(24-25): 16.966
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☐ whole view

DOM position 23 DOM id: UP 5P1066

(U, Short) Cable mark: 614

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(23-24): 16.983
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 12

Time:
Now 10:46
Last b/o _____
Δt [min] _____

Depth:
Paro 632
Keller 602
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

* I don't think the Keller is working. Its pressure is not really going up as we drop...

☐ All clear to lower cable ☺

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

DOM position 22 DOM id: TP 5P0973

(T, Long) Cable mark: 631

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(22-23): 16.932
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 21 DOM id: UP 6P1386

(U, Short) Cable mark: 649

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(21-22): 16.940
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 11

Time:
Now 11:04
Last b/o _____
Δt [min] _____

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

Depth:
Paro 666
Keller 603
Payout _____

- 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 5P0587

(T, Long) Cable mark: 666

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(20-21): 16.937
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view
☐ Curved distance around DOM:_____ ☐ Vertical distance:_____

DOM position 19 DOM id: UP 644474

(U, Short) Cable mark: 683

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(19-20): 16.886
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view
☐ Curved distance around DOM:_____ ☐ Vertical distance:_____

Breakout 10

Time:
Now 11:18
Last b/o _____
Δt [min] _____

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

Depth:
Paro 705
Keller 603
Payout _____

- 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 6Y4341

(T, Long) Cable mark: 700

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(18-19): 16.926
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 17 DOM id: UP 5P1060

(U, Short) Cable mark: 717

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(17-18): 16.952
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 9

Time:
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 735
Keller 604
Payout _____

- 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 5P0963

(T, Long) Cable mark: 734

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(16-17): 16.926
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 15 DOM id: UP 5H0138

(U, Short) Cable mark: 751

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(15-16): 16,968
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 8

Time:
Now 11:42
Last b/o _____
Δt [min] _____

Depth:
Paro 768
Keller 603
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 14 DOM id: TP 644457

(T, Long) Cable mark: 769

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(14-15): 16.948
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 13 DOM id: UP 540118

(U, Short) Cable mark: 785

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(13-14): 16.930
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 7

Time:
Now 11:57
Last b/o _____
Δt [min] _____

Depth:
Paro 819
Keller 604
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 12 DOM id: TP 5P0595

(T, Long) Cable mark: 802

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(12-13): 16.949
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 11 DOM id: UP 5P0930

(U, Short) Cable mark: 819

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(11-12): 16.951
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 6

Time:
Now 12:09
Last b/o _____
Δt [min] _____

- 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

Depth:
Paro 837
Keller 827
Payout _____

Keller started working again...

☐ All clear to lower cable ☺

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

DOM position 10 DOM id: TP 644453

(T, Long) Cable mark: 836

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(10-11): 16.982
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 9 DOM id: UP 644340

(U, Short) Cable mark: 853

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(9-10): 16.961
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 5

Time:
Now 12:21
Last b/o _____
Δt [min] _____

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

Depth:
Paro 871
Keller 861
Payout _____

- 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 5P1001

(T, Long) Cable mark: 870

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(8-9): 16.932
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

DOM position 7 DOM id: UP 644346

(U, Short) Cable mark: 887

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(7-8): 16.953
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Breakout 4

Time:
Now 1:33
Last b/o _____
Δt [min] _____

- 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

Depth:
Paro 918
Keller 910
Payout _____

after we lowered next DOM in place. OOPS...

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

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

DOM position 6

DOM id: TP 64329

(T, Long) Cable mark: 905

HARNESS CAUGHT ON HOLE LIP + SO WAS REPLACED W/ TP5P0967

☑ Bottom shackle connected

☑ Top clutch connected at link # _____

☑ Bow OK → ☑ clutch zip tied

Photos: ☑ phi orientation ☑ whole view

Δ(6-7): ~~16.943~~ 16.990

DOM position 5

DOM i

(U, Short) Cable mark: 921

☑ Bottom shackle connected

☑ Top clutch connected at link # _____

☑ Bow OK → ☐ clutch zip tied

Photos: ☑ phi orientation ☑ whole view

Δ(5-6): 16

Breakout 3

Now 1:51

Last b/o _____

Δt [min] _____

Depth:

Paro 942

Keller 933

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 4

(T, Long)

DOM id: TP 644351

Cable mark: 930

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

Δ(4-5): 16.931

DOM position 3

(U, Short)

DOM id: UP 644336

Cable mark: N.A.

* harness not parallel to floor on this one

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

Δ(3-4): 16.966

Breakout 2

- 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

Time:

Now 2:09
Last b/o ____
Δt [min] ____

Depth:

Paro 975
Keller 966
Payout ____

☐ 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: 67.904
AFTER RADIO:

If the two well depth measurements agree:

☐ Switch to Setra well depth in monitoring system

Time:_____

Now the String Drop begins

String Drop

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

☐ Switch cable winch to computer control

☐ Speed: .19	Time: 4:54	Depth: 1218
☐ Speed: .18	Time: 4:58	Depth: 1297
☐ Speed: .23	Time: 5:11	Depth: 1559
☐ Speed: .35	Time: 5:42	Depth: 2116
☐ 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	5:07	67.237	1485		5.0
2000 m	5:35	65.4	1983		2.4
2100 m	5:41	65.1	2085		2.05
2200 m	5:48	64.8	2185		1.43
2300 m	5:54	64.6	2283		0.0
2400 m	6:03		2385		0.65

at 2260

[1]Read off monitoring screen

[2]Cable mark offset = 1.8 (at DOM59) – 17 m = −15.2 (at DOM60)
(from p.4)

~~☐ Switch to manual control @ 2400 m~~

~~☐ Well depth~~
~~@ 2420:~~
~~@ 2440:~~

stopped at 2445 by Paro
at 2426 by cable mark
+15 = 2441 by c.m.

4m stretch ?

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

then attached Yale grip

☐ String secured with Yale grip and anchor chain Time: 6:00 AM

FINAL CABLE MARK: 2435 − 1.7 m = (2433.3)

FINAL WELL DEPTH: 64.0

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

☑ Distance from Paro to DOM60: 18.6

$d_{Paro\text{-}DOM59}$ = 1.6 (from p. 4)

$d_{Paro\text{-}DOM60}$ = ($d_{Paro\text{-}DOM59}$ + 17) m = 18.6 ← 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 = 10.1 PSI → $\exp(-KP_0)$ = _____

Pressure reading (from screen): P = 3399.3 PSI → $\exp(-KP)$ = _____

Subtract exponentials → = _____

× $1.85947 \cdot 10^5$

Paro depth in water → = _____ m

Add distance to DOM60 (above) → + 18.6 m

Add well depth → + 64.0 m

Depth of bottom DOM → = _____ m

Final depth estimates

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

Time:	Paro	Keller	Payout	Cable marks
Reading	3399.3 PSI	266.18 PSI	-40.66 (broken) m	2433.3 m
Offset	10.01 PSI	10.10 PSI	— m	~~-15.2~~ m
Well depth	64.0 m		This space is intentionally left blank	
Dist. to DOM60	18.6 m	18.6 m		
DEPTH (DOM60)	2450.55	2449.06	—	2448.5

Time: 6:00 AM

Final depth (DOM60): 2450.55 (PARO)

Deployment Closeout

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

Time: 6:00 AM Date: 1/14/07

Shift Lead: A. K.
name / signature

Logger: R. D'Agostino
name / signature

PTS Lead: R. D'Agostino
name / signature

Deployment Manager: _____
name / signature

Safety Officer: _____
name / signature

IceCube On-ice Lead: _____
name / signature

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

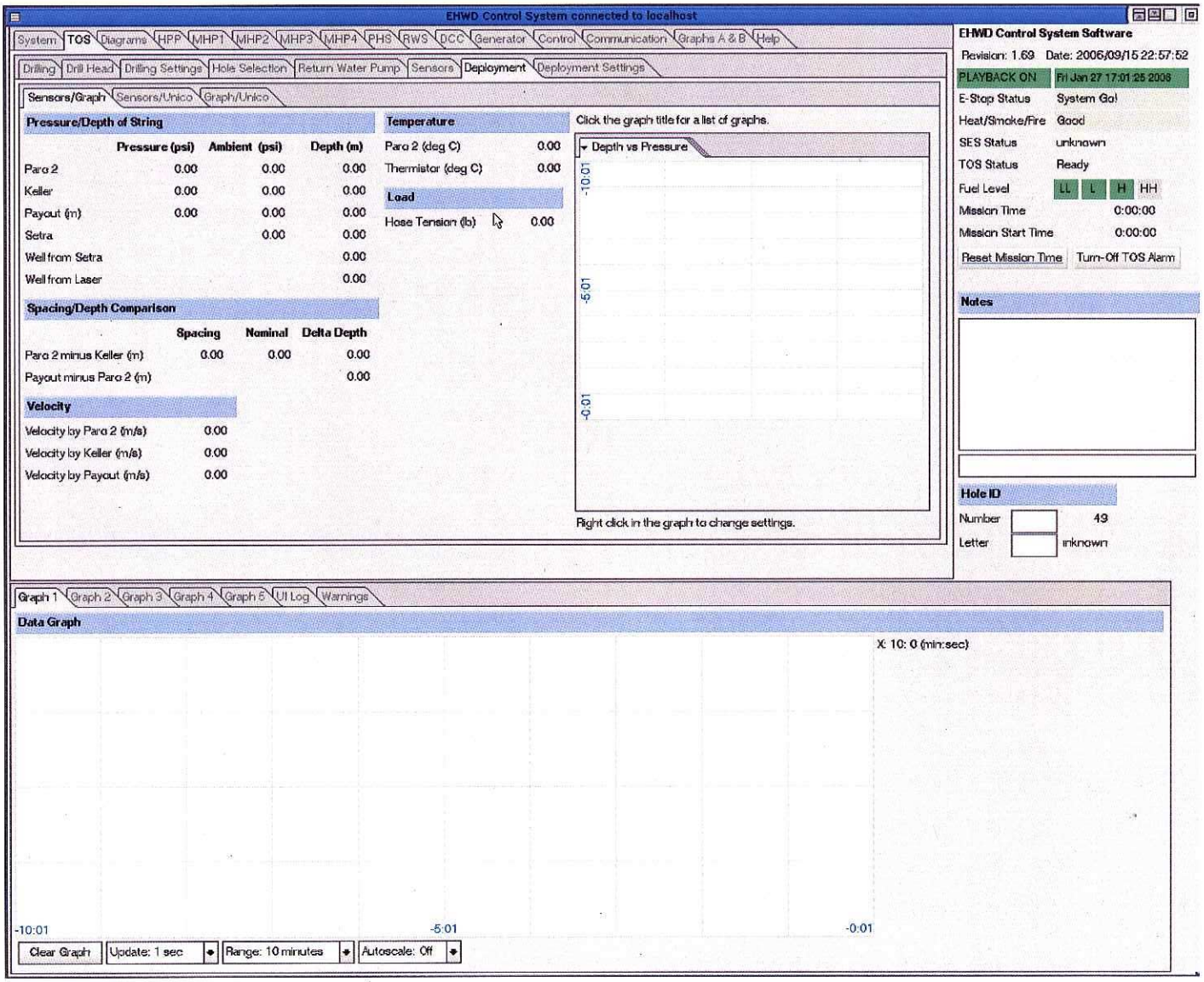
- All vertical measurements are relative to the floor of the tower (not the lip of the kick board).
  - Measure well depth from this level.
  - Take cable mark readings at this level.
- The location of a DOM on a string (for distance measurements) is defined as the position of the center of the sphere (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.

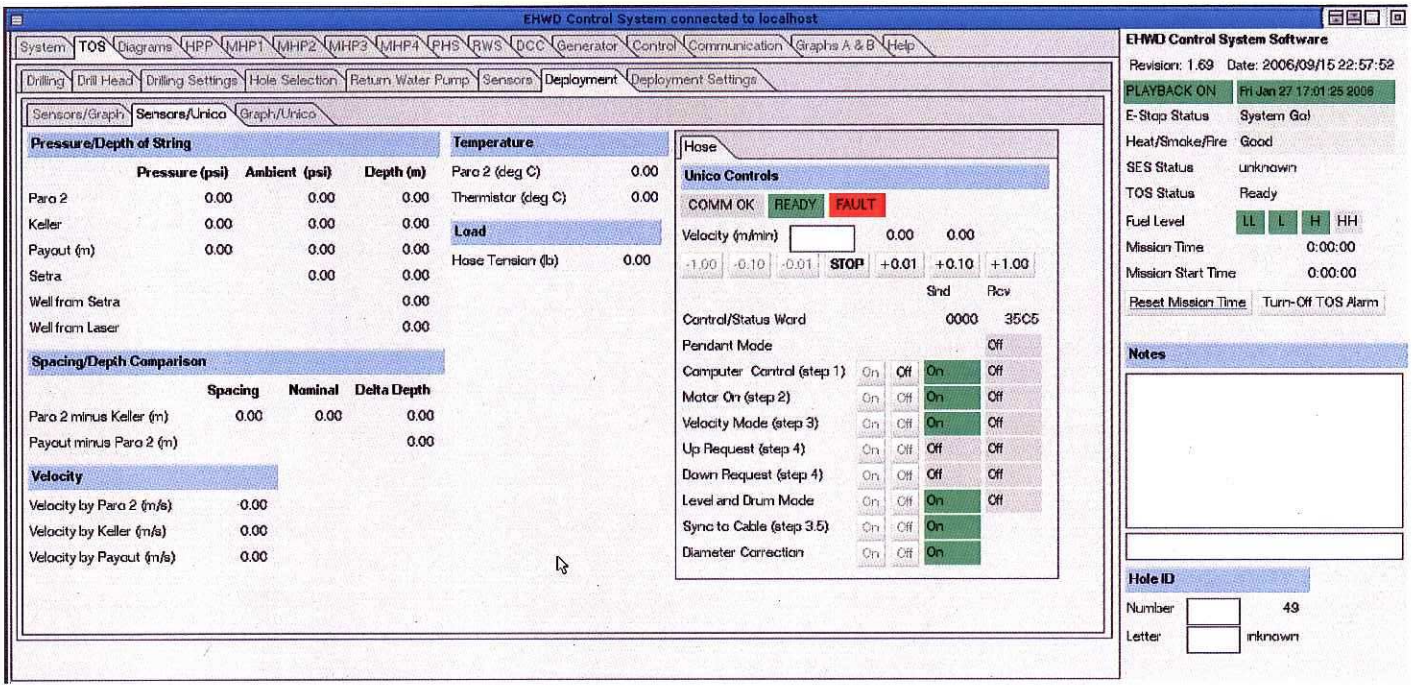
Pressure/Depth of String Current and ambient (air) pressures, and the corrected depths at DOM60.
Spacing/Depth Comparison Difference in depth from pressure data. *Should be stable during deployment!*
Velocity The deployment velocity calculated from recent pressure/payout readings.
Temperature Temperature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



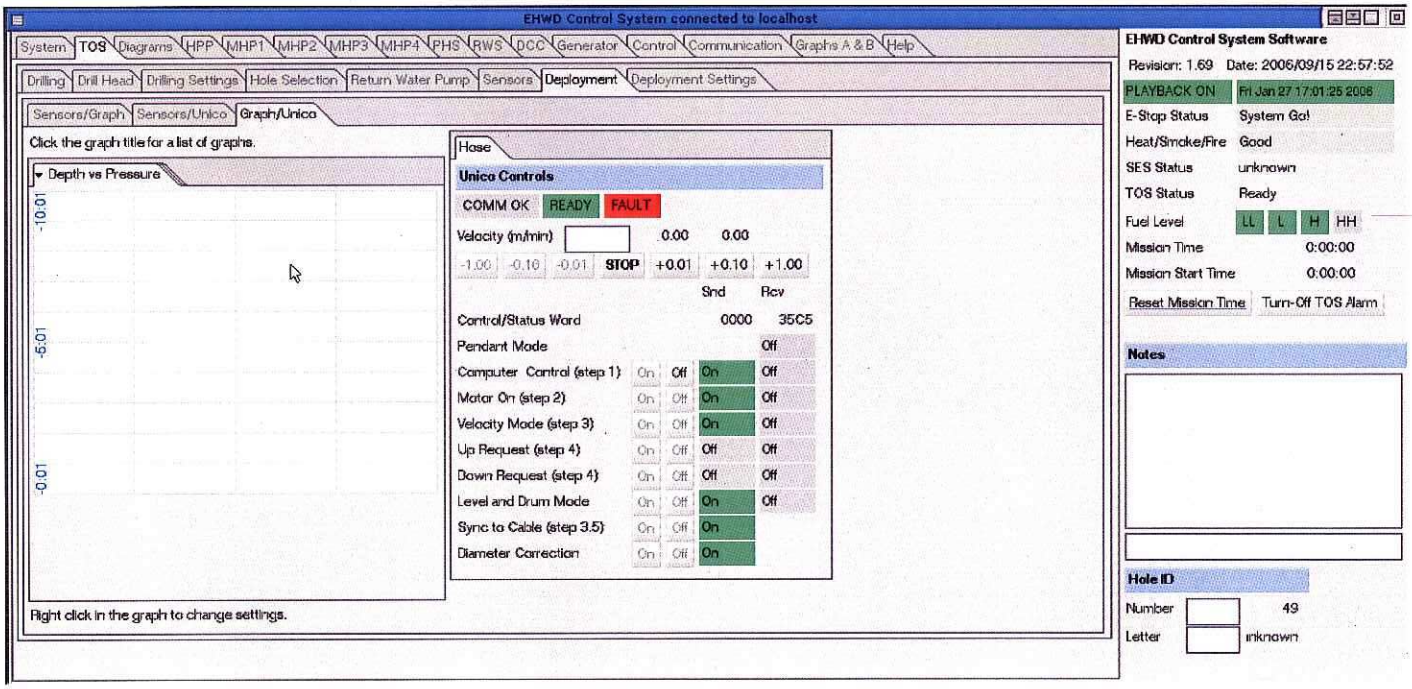
Screen Tab: TOS ► Deployment

► 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

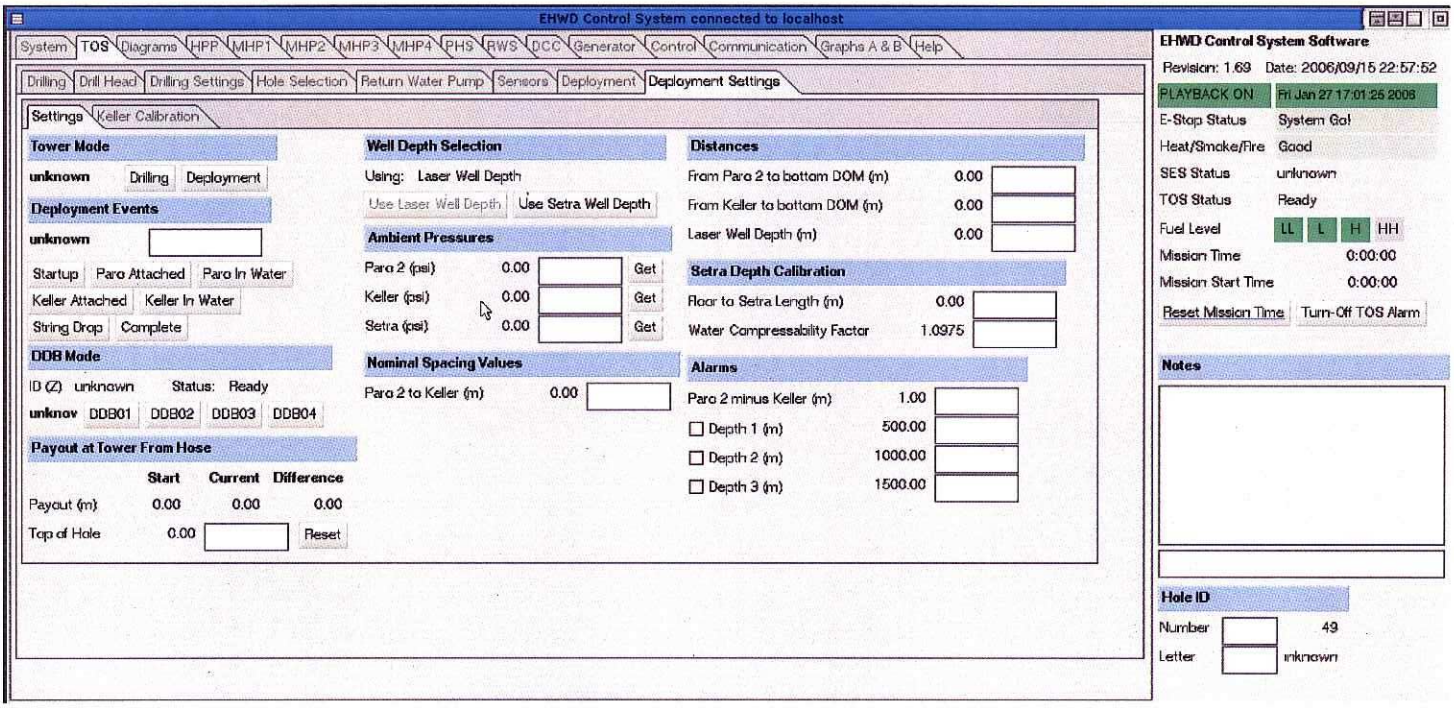


Screen Tab: TOS ► Deployment Settings

► 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).



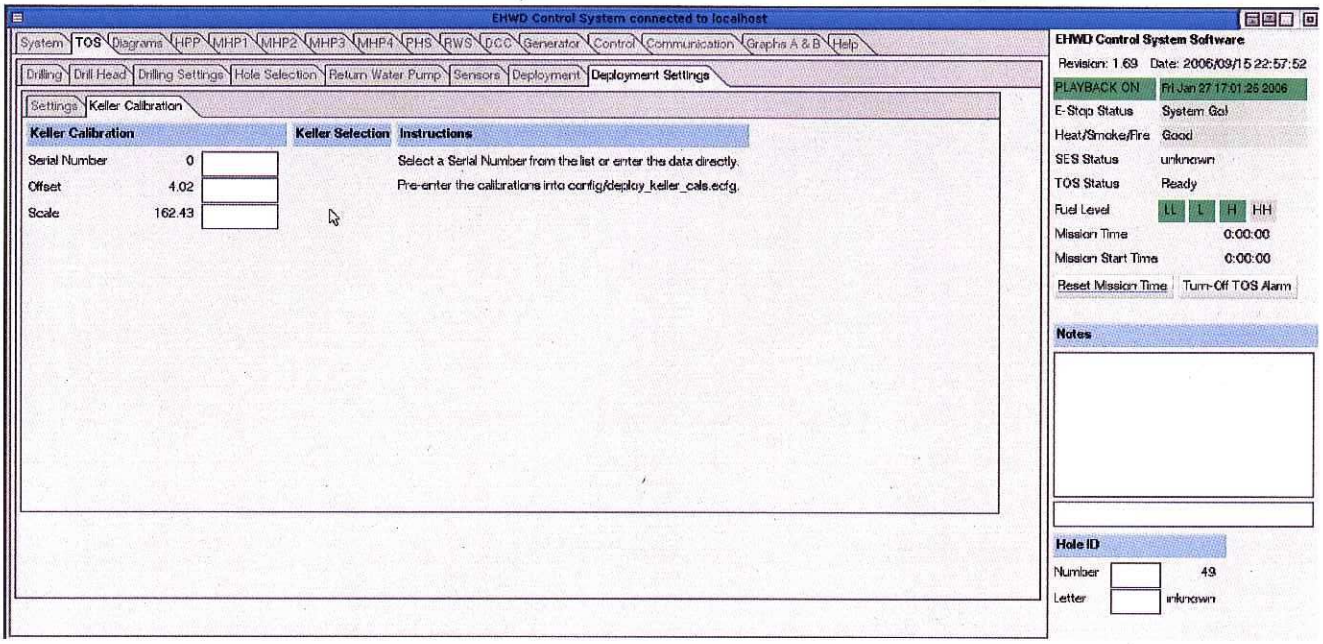
Deployment Events

☐ **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

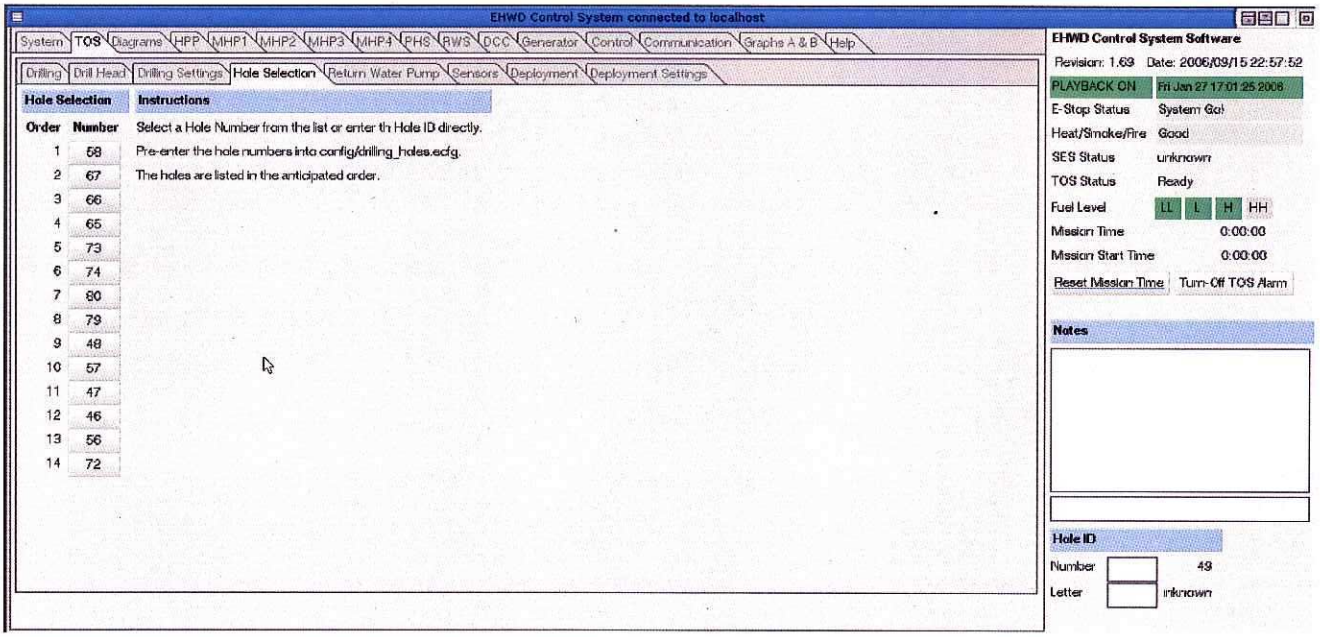
► Keller Calibration

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: _____ = _____

Distance between Keller and DOM60: _____ = _____

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 # 78

DATE: 1/13/06

Before Deployment

- [X] **Action**: Locate laser ranger for well depth measurements. 75.2 m well depth
- [X] **Action**: Locate metric tape measure.
- [X] **Action**: Locate one Paro and one Keller, *plus spares* of each. missing Keller
- [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.
- [ ] no **Action**: Select string (=hole) number on Hole Selection tab. not in list
- [X] **Action**: Note deployment start time.

  Logbook: Time ~4pm (see Log)

- [X] **Action**: Click "Reset Mission Time" on the right panel on the deployment screen.

  4:35 pm

- [X] **Action**: Click "Startup" under Deployment Events.

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

ENTER: DDB# (select button)

Logbook: DDB#

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

ENTER: Well depth [m]

Logbook: Well depth 75.2 m

☒ **Action**: Reset Payout when DOM60 breaks the plane of the floor. −15.9 + 1.15 = −14.75

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

Logbook: Payout Start value ~~forgot to zero when DOM 60 @ floor. Zeroed when DOM 60 at 15.9 m depth~~ set so it is at 15.9 m, payout with DOM 60 now at 15.9 m according to Laser

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

1.8 m

Logbook: Cable mark [m]

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

Logbook: Paro serial number 104657

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

☒ **Action**: Measure distance between Paro location and nearest DOM. 1.60 m above DOM 60

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) = 18.6 m

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

Keller

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

229.7882 slope

−928.57412 intercept

Logbook: Cable mark [m]

forgot to.

estimate: 1.8m + 1.6 m = 3.4 m

DOM 56 @ 5:40 pm

56 to go · 6 minutes / DOM

= 336 minutes until last DOM

= 5.5 hours → last DOM @ 10:10 pm

radio until 12:10 am

Drop until 2:10 am

SPATS 2 – 6 am

Floor @ 85

DOM 60 was @ ~~80~~ -16

now DOM 60 @ 85 + 16 = 101 m

Depth by Paro. 2 = 100 m ✓

Payout is giving garbage

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

ENTER: Ambient pressure [PSI] for Paro @ DOM 55

Logbook: Paro2 air pressure 10.01

During Deployment

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

☐ **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 060733

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) 527.732

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

AFTER RADIO
CABLE MARK: 1056 } before radio hit water
PARO: 1077.08 }
WELL DEPTH: 67.904 } after radio hit water

☑ **Action**: Get cable mark reading at Keller. 513

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 -5.29 ⇒ 10.10 (I thought it was in water before it actually was...)

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

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

Logbook: Cable mark [m] 989

☑ **Action**: Measure well depth as soon as top DOM is under water. AFTER ALL RADIO COMPONENTS INSTALLED:

ENTER: Well depth [m]

Logbook: Well depth [m], measurement method (laser/tape) 67.904

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] 67.904

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

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

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

cool: every time the stop the Paro oscillates and damps out.

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)

PARO
3399.30 PSI 2450.55

KELLER
2666.18 PSI 2449.06

☑ **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) 64.0 laser

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

Logbook: Time 6AM

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

Distribute Droopies evenly !

STRING 78

NAME	DOMID	REMARK	DEPLOYED POSITION	Cable Mark	Difference	Est of Depth
Big_Two_Card	TP6P1371		60	0	0	2450.55
SARS	UP5P1036	Droopy	59	1.8	17.2	2433.35
Chagas	TP5P0969	Droopy	58	19	16.8	2416.55
Q_Squared_Joe	UP6P1384		57	35.8	17.2	2399.35
California_Speed	TP6P1415		56	53	17	2382.35
Anglophilia	UP5P0996	Droopy	55	70	17	2365.35
Huangdi	TP6Y4267		54	87	16.9	2348.45
Draw_Poker	UP6P1368		53	103.9	16.9	2331.55
Cribbage	TP6P1389		52	120.8	16.9	2314.65
Mississippi	UP5P0968	Droopy	51	137.7	17.3	2297.35
Lyme_Disease	TP5P0989	Droopy	50	155	16.9	2280.45
Buffer 6	UP6P1278		49	171.9	17.1	2263.35
Three_Card_Brag	TP6P1395		48	189	17	2246.35
Stare	UP5H0128	Droopy	47	206	17	2229.35
Buffer 4	TP5P1005		46	223	17	2212.35
Happy_Families	UP6P1404		45	240	17	2195.35
Macrophiliaish	TP5P0853	Droopy	44	257	17	2178.35
Ix_Chup	UP6Y4312		43	274	17	2161.35
Buffer 3	TP5P0971	Droopy	42	291	16.9	2144.45
Xolotl	UP6Y4332		41	307.9	17.1	2127.35
Measles	TP5P0937	Droopy	40	325	16.9	2110.45
Shigellosis	UP5P1042	Droopy	39	341.9	17.1	2093.35
Piquet	TP6P1367		38	359	17	2076.35
Giardia	UP5P1046	Droopy	37	376	17	2059.35
Hearts_Card	TP6P1369		36	393	17	2042.35
Gonggong	UP6Y4306		35	410	17	2025.35
Old_Maid	TP6P1419		34	427	17	2008.35
Loch_Ness_Monsterish	UP5P0588	Droopy	33	444	17	1991.35
Hepatitis	TP5P0985	Droopy	32	461	17	1974.35
Orchid	UP6P1204		31	478	17	1957.35
Solitaire	TP6P1413		30	495	16.9	1940.45
Vattenrall	UP5H0242	Droopy	29	511.9	17.6	1922.85
He_Xiangu	TP6Y4249		28	529.5	17	1905.85
Guan_Yin	UP6Y4298		27	546.5	17.5	1888.35
Buffer 2	TP5P0977	Droopy	26	564	16.9	1871.45
Lung_Wang	UP6Y4460		25	580.9	17.1	1854.35
Emeishan	TP6Y4259		24	598	16	1838.35
Influenza	UP5P1066	Droopy	23	614	17	1821.35
Salmonella	TP5P0973	Droopy	22	631	18	1803.35
Skat_Card	UP6P1386		21	649	17	1786.35
Buffer 1	TP5p0587	Droopy	20	666	17	1769.35
Din_Hau	UP6Y4474		19	683	17	1752.35
Xilonen	TP6Y4341		18	700	17	1735.35
Trypanosomiasis	UP5P1060	Droopy	17	717	17	1718.35
Q_Fever	TP5P0963	Droopy	16	734	17	1701.35
Flugsnappare	UP5H0138	Droopy	15	751	18	1683.35
Chu_Jung	TP6Y4457		14	769	16	1667.35
Svala	UP5H0118	Droopy	13	785	17	1650.35
Satanophobiaish	TP5P0595	Droopy	12	802	17	1633.35
Discophiliaish	UP5P0930	Droopy	11	819	17	1616.35
Tu_Ti	TP6Y4453		10	836	17	1599.35
Buffer 5	UP6Y4340		9	853	17	1582.35
Leishmaniasis	TP5P1001	Droopy	8	870	17	1565.35
Mayahuel	UP6Y4346		7	887	18	1547.35
Aspergillosis	TP5P0967	Droopy	6	905	16	1531.35
Dengue_Fever	UP5P1040	Droopy	5	921	9	1522.35
Kao_Kuo_zhu	TP6Y4351		4	930	16.96	1505.39
Xochiquetzal	UP6Y4336		3	946.96	26.04	1479.35
Ebola	TP5P0979	Droopy	2	973	16	1463.35
Bubonic_Plague	UP5P1044	Droopy	1	989	16	1447.35
Rubella	TP5P0943	Droopy				
Buffer 4	TP5P0971	Droopy				
Ah_Bolom_Tzacab	TP6Y4329					
Holly	UP6P1206					

Harness caught

String Installation Traveler

Surface Cable# : 78 **Length (m) :** 672 m	**Start date:** 1/13/07
Surface to DOM Cable# : C27	**Start date:** / /

	Process Step	Doc. no. reference	Tech initials	Date Completed	Comments
1	Visual Inspection of Cables at Pole	9400-0006-QLP	MK	1/11/07	

Surface Cable Assembly Inspection **Pass** ☑ **Fail** ☐ **By:**

Surface to DOM Cable Assembly Inspection **Pass** ☑ **Fail** ☐ **By:** MK

2	Trench Surface Cable Assembly (SCA)	9400-0006-QLP			
3	Install SCA into Surface Junction Box (SJB)	9400-0006-QLP	TM	12/28/06	
4	Install SCA into ICL	9400-0075-PLN			
5	Complete IceTop FCU Power and Data Installation Procedure	9400-005-QLP			
6	Verify Connectivity of IceTop DOMs with Quad Connectivity Tester (QCT)				
7	Pre-deployment Inspection Procedure		MK	1/13/07	
8	S2D Cable into SJB installation	9400-0007-QLP	MK	1/14/07	Q1 goes to Q17 for Radio #1
9	Wet Connector Testing of Quads		MK	1/14/07	Q15 is wet
10	QCT Testing of Quads		MK	1/14/07	
11	SJB Final Inspection Complete (Ok to Bury)	9400-0007-FRM	MK	1/25/07	
12	Handoff to IceCube C &V Team		MK	1/14/07	

String Installation Traveler

String QCT and Wet Connector Test Form

String # 78 Name of Tester: Mike Kleist

	QCT Results # of DOMs (0, 1, 2)			Wet Connector Test Results (micro Amps)					
Quad name	# of DOMs WP0	# of DOMs WP1	Pass/ Fail	J	L	M	K	Pass/ Fail	Recheck Pass/ Fail
Q2	2	2	P					P	
Q3	2	2	P					P	
Q4	2	2	P					P	
Q5	2	2	P					P	
Q6	2	2	P					P	
Q7	2	2	P					P	
Q8	2	2	P					P	
Q9	2	2	P					P	
Q10	2	2	P					P	
Q11	2	2	P					P	
Q12	2	2	P					P	
Q13	2	2	P					P	
Q14	2	2	P					P	
Q15	2	2	P	> 130μA	> 130μA			F	P 1/24/07
Q16	2	2	P					P	
IceTop Quads									
ITQ1	1	1	P						
ITQ2	1	1	P						

Service Quads	Device Connected	Verified on	Tech Initials	Comments
Q1				
Q17				
Q18				
Q19				
Q20				