DEPLOYMENT LOG for IceCube STRING # 47

Deployment Start: *at* 7:30pm *on* 1/22/07

Deployment End: *at* 7:57am *on* 1/23/07

Target depth (DOM60): **2450** m Final depth: 2551.5

Justin: J-9-11

B-1-105 Sebastian
6 1765

Deployment Crew

Position	First Shift	Second Shift
Shift lead	Albrecht Kurle	T. Ham
DOM install 1 (high)	Phil R.O.	
DOM install 2 (low)	Karthik	
DOM supply 1 / DOM install 3	Hagar. O	
DOM supply 2 / floater	Ryan O	
	Albrecht	
	Michelangelo	
	Justin Vandenbroucke Michelangelo D'Agostino	J. Vandenbroucke
	Mark Krasberg O	

of shift change: 7 am

Terry for Radio + Acoustics Questions

8
11.5 hrs
Odrill

1hr
Odrill

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:_____

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

- [x] Deployment monitoring system (PTS) operational ☐ DDB# 3
- [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): _____
- [x] ☐ CPR trained: _____
- [x] ☐ Food runners: _____

call galley at 65521

- ☐ End of Main Cable brought into TOS and secured

Cable end attachments

- ☐ Measure well depth: (48.962 after deployment) est. 47.5 m will take real measurement later (ordered by Albrecht ~)
- [x] Weights (5) attached
- ☐ Weight cable attached (weight stack complete) Time:_____

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

DOM position 60 DOM id: TP YP0313
(T, Long) Walrusish

☑ Bottom shackle connected to weight stack Payout: ~1.60 ⇒ 0.6
☑ Top shackle connected to 17 m steel cable
Photos: ☐ whole view

DOM position 59 DOM id: UP 6P1424
(U, Short) Cable mark: 1.5

☑ Bottom shackle connected to 17 m cable
☑ Top shackle connected to Yale grip Δ(59-60): 17.132 (use laser ranger)
☑ Main cable end taped to 17 m steel cable
Photos: ☐ phi orientation ☐ whole view

Breakout 30 Time: 9:10

Depth:
Payout 18.23

- 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 #: 98172 Nipple ☑ on ☐ off
☑ Connected ☑ Operational ☑ Air pressure [PSI]: 9.47
☑ Cable mark: ~ 2 m ☐ Distance to DOM59: 1.055 m above Dom 59

☑ All clear to lower cable ☺

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

DOM position 58 DOM id: TP 5H0231

(T, Long) Cable mark: 19m

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(58-59): 16.737
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 57 DOM id: UP 5H0254

(U, Short) Cable mark: 35

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(57-58): 16.945
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 29

Time:
Now 9:28
Last b/o
Δt [min]

Depth:
Paro 65.77
Payout 51.51

- 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 56 DOM id: TP 5H0203

(T, Long) Cable mark: 53m

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(56-57): 16.938
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 55 DOM id: UP 6P1412

(U, Short) Cable mark: 69

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(55-56): 16.970
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 28

Time:
Now 9:44
Last b/o _____
Δt [min] _____

Depth:
Paro 72.83
Payout 84.79

- 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 5H0121

(T, Long) Cable mark: 86.5

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(54-55): 16.957
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 53 DOM id: UP 6P1416

(U, Short) Cable mark: NA

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(53-54): 16.910
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 27

Time:
Now 16:01
Last b/o _____
Δt [min] _____

Depth:
Paro 107.01
Payout 117.94

- 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 52 DOM id: TP 5402 49

(T, Long) Cable mark: 121 m

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(52-53): 16.955
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 51 DOM id: UP 6Y4382

(U, Short) Cable mark: 137 m

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(51-52): 16.952
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 26

Time:
Now 10:15
Last b/o _____
Δt [min] _____

Depth:
Paro 141.47
Payout 151.53

- 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 50 DOM id: TP 6Y4325

(T, Long) Cable mark: 155

☑ Bottom shackle connected
☑ Top clutch connected at link # 20 Δ(50-51): 16.918
☑ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view
☐ Curved distance around DOM:_____ ☐ Vertical distance:_____

DOM position 49 BROKEN CONNECTOR DOM id: UP 6Y42B 9 2

(U, Short) Cable mark: 171 m

might be a 9; the Germans need to improve their handwriting

☑ Bottom shackle connected
☐ Top clutch connected at link # 19 Δ(49-50): 16.994
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view
☐ Curved distance around DOM:_____ ☐ Vertical distance:_____

Breakout 25

Time:
Now 10:30
Last b/o _____
Δt [min] _____

Depth:
Paro 176.74
Payout 185.94

- 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 5H0207

(T, Long) Cable mark: 188

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(48-49): 16.939
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 47 DOM id: UP 64 4252

(U, Short) Cable mark: NA

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(47-48): 16.960
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 24

Time:
Now 10:43
Last b/o _____
Δt [min] _____

Depth:
Paro 210.05
Payout 218.52

- 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 46 DOM id: TP 64361

(T, Long) Cable mark: 222

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(46-47): 16,922
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 45 DOM id: UP 540150

(U, Short) Cable mark: 239

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(45-46): 16,984
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 23

Time:
Now 10:54
Last b/o _____
Δt [min] _____

Depth:
Paro 244.66
Payout 252.11

- 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 5H0127

(T, Long) Cable mark: 257

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(44-45): 16.945
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 43 DOM id: UP 5H0132

(U, Short) Cable mark: 273

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(43-44): 16.902
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 22

Time:
Now 11:05
Last b/o _____
Δt [min] _____

Depth:
Paro 279.35
Payout 285.96

- 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 64307

(T, Long) Cable mark: 291

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(42-43): 16.968
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 41 DOM id: UP 64423

(U, Short) Cable mark: 307

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(41-42): 16.994
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 21

Time:
Now 11:16
Last b/o _____
Δt [min] _____

Depth:
Paro 313.75
Payout 319.47

- 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 5H0133

(T, Long) Cable mark: 325

☑ Bottom shackle connected
☐ Top clutch connected at link #_____ Δ(40-41): 16.963
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 39 DOM id: UP 5H0234

(U, Short) Cable mark: 342

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(39-40): 16,938
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 20

Time:

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

Depth:
Paro 347.98
Payout ~~352.84~~

- 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 64391

(T, Long) Cable mark: 358

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(38-39): 16.950
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 37 DOM id: UP 5H0230

(U, Short) Cable mark: 375

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(37-38): 16.961
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 19

Time:
Now 11:40
Last b/o _____
Δt [min] _____
Depth:
Paro 382.42
Payout 386.95

- 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 6Y4415

(T, Long) Cable mark: 393

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(36-37): 16.974
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

BROKEN CONNECTOR

DOM position 35 DOM id: UP 6Y4258

(U, Short) Cable mark: 410

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(35-36): 16.993
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 18

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

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

Depth:
Paro 418.02
Payout 421.09

- 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 64 4423

(T, Long) Cable mark: 427

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(34-35): 16.947
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 33 DOM id: UP 64 4402

(U, Short) Cable mark: 444

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(33-34): 16.933 16.91
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 17

Time:
Now 12:11 13:15
Last b/o _____
Δt [min] _____
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 ☺

AK for M d'A Picture Saya TPle Y4319

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

DOM position 32 DOM id: TP_____

(T, Long) Cable mark:_____

missed d'n deployment

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(32-33): 16.91
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 31 DOM id: UP ~~6Y4420~~ 6Y4448

(U, Short) Cable mark: 478m

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(31-32): ~~16.94~~
☑ Bow OK → ☒ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

Problems w. Connector Replaced DOM

Breakout 16 Time:

Now 21:40

- 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

☐ All clear to lower cable ☺

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

DOM position 30 DOM id: TP 6Y4245

(T, Long) Cable mark:_____

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(30-31): 16.92
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ phi orientation ☑ whole view

MVD again. BROKEN CONNECTOR

DOM position 29 DOM id: UP 644254

(U, Short) Cable mark: 512

☐ Bottom shackle connected
☐ Top clutch connected at link #_____ Δ(29-30): 16.941
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 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

Thermistor ☐ Present ☐ Distance to DOM29:_____

Keller ☑ Connected ☑ Operational ☐ Air pressure [PSI]: 3.50
Ser.#: 0606746 ☑ Cable mark: ~ 513 ☐ Distance to DOM29: .976 m above DOM 29

☐ All clear to lower cable ☺

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

DOM position 28 DOM id: TP 64451

(T, Long) Cable mark: 529 BROKEN CONNECTOR

(last wire ones before...)

☑ Bottom shackle connected
☑ Top clutch connected at link # 182 Δ(28-29): 16.981
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 27 DOM id: UP 64256

(U, Short) Cable mark: 546

☑ Bottom shackle connected
☑ Top clutch connected at link # Δ(27-28): 16.955
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 14 Time:

Now 2:10
Last b/o
Δt [min]

Depth:
Paro 556.20
Keller 575.48
Payout 554.27

- 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 ca

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

DOM position 26 DOM id: TP 6Y4321

(T, Long) Cable mark: 563

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(26-27): 16.969
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 25 DOM id: UP 6H7522

(U, Short) Cable mark: 580

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(25-26): 16.949
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 13

Time:

Now 2:22
Last b/o _____
Δt [min] _____

Depth:
Paro 590.48
Keller 589.96
Payout 587.75

- 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 24 DOM id: TP 6Y4407

(T, Long) Cable mark: 597

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(24-25): 16.939
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 23 DOM id: UP 6Y4398

(U, Short) Cable mark: 614

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(23-24): 16.940
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 12

Time:
Now 2:39
Last b/o _____
Δt [min] _____

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

Depth:
Paro 629.74
Keller 624.56
Payout 621.39

- 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 6Y4279

(T, Long) Cable mark: 631

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(22-23): 16.928
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 21 DOM id: UP 6Y4282

(U, Short) Cable mark: 648

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(21-22): 16.918
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 11 Time:

Now 2:56
Last b/o _____
Δt [min] _____

Depth:
Paro 659.18
Keller 659.75
Payout 655.09

- 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 20 DOM id: TP 6Y4419

(T, Long) Cable mark: 665

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(20-21): 16.974
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view
☐ Curved distance around DOM:_____ ☐ Vertical distance:_____

DOM position 19 DOM id: UP 5H0190

(U, Short) Cable mark: 682

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(19-20): 16.948
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view
☐ Curved distance around DOM:_____ ☐ Vertical distance:_____

Breakout 10 Time:

Now 3:01
Last b/o _____
Δt [min] _____

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

Depth:
Paro 693.35
Keller 693.14
Payout 688.53

- 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 6P1417

(T, Long) Cable mark: NA

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(18-19): 16.962
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 17 DOM id: UP 6493/4

(U, Short) Cable mark: 716 m

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(17-18): 16.967
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 9

Time:
Now 3:18
Last b/o _____
Δt [min] _____

Depth:
Paro 727.78
Keller 728.52
Payout 721.99

- 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 6Y4283 BROKEN CONNECTOR

(T, Long) Cable mark: 733

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(16-17): 16.972
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 15 DOM id: UP 6P1388

(U, Short) Cable mark: 750

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

Breakout 8

- 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 762.01
Keller 761.89
Payout 755.38

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

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

DOM position 14 DOM id: TP 5H0227

(T, Long) Cable mark: 767

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(14-15): 16.994
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 13 DOM id: UP 5H0228

(U, Short) Cable mark: 784

☑ Bottom shackle connected
☑ Top clutch connected at link # _____ Δ(13-14): 16.967
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 7

Time:
Now 3:40
Last b/o _____
Δt [min] _____

Depth:
Paro 796.36
Keller 797.16
Payout 788.97

- 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 6Y4467

(T, Long) Cable mark: 801

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(12-13): 16.958
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 11 DOM id: UP 644426

(U, Short) Cable mark: 818

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(11-12): 16.975
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 6

Time:
Now 4:50
Last b/o _____
Δt [min] _____

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

Depth:
Paro 830.60
Keller 830.61
Payout 822.54

- 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 6P1397

(T, Long) Cable mark: 835

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(10-11): 16.968
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 9 DOM id: UP 64288

(U, Short) Cable mark: 852

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(9-10): 16.947
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 5

Time:
Now 4:01
Last b/o _____
Δt [min] _____

Depth:
Paro 864.88
Keller 865.87
Payout 855.93

- 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 5H0145

(T, Long) Cable mark: 869

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(8-9): 16.966
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 7 DOM id: UP 6Y4370

(U, Short) Cable mark: ~~886~~ 886

☐ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(7-8): 16.955
☐ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 4

Time:
Now 4:13
Last b/o _____
Δt [min] _____

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

Depth:
Paro 899.07
Keller 899.32
Payout 889.40

- 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 6 DOM id: TP GP1405

(T, Long) Cable mark: 904

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(6-7): 16.949
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 5 DOM id: UP 6Y4248

(U, Short) Cable mark: 920

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(5-6): 16.988
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 3

Time:

Now 4:25
Last b/o _____
Δt [min] _____

Depth:

Paro 933.50
Keller 935.47
Payout 923.11

- 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 644337

(T, Long) Cable mark: 937

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(4-5): 16.919
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 3 DOM id: UP 644374

(U, Short) Cable mark: 954

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(3-4): 16.931
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 2

Time:
Now 4:35
Last b/o _____
Δt [min] _____

Depth:
Paro 967.53
Keller 968.90
Payout 956.58

- 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 540243

(T, Long) Cable mark: 971

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(2-3): 16.973
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

DOM position 1 DOM id: UP 6H7506

(U, Short) Cable mark:_____

☑ Bottom shackle connected
☑ Top clutch connected at link #_____ Δ(1-2): 16.917
☑ Bow OK → ☑ clutch zip tied
Photos: ☐ phi orientation ☐ whole view

Breakout 1

Time:
Now 4:45
Last b/o _____
Δt [min] _____

Depth:
Paro 1081.84
Keller 1064.14
Payout 990.21

- 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: 48.962 just after DOM 1 installed

If the two well depth measurements agree:

☐ Switch to Setra well depth in monitoring system 48.078 m after all the radio stuff was installed

Time: 5:50

Now the String Drop begins

String Drop

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

☐ Switch cable winch to computer control

☐ Speed: .39 Time: 6:00 Depth: 1225
☐ Speed: .39 Time: 6:25 Depth: 1645
☐ Speed: .33 Time: 6:55 Depth: 1853
☐ Speed: .30 Time: 7:09 Depth: 2258
☐ Speed: Time: Depth:
☐ Speed: Time: Depth:

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

2000.32

Depth by Paro[1]	Time	Well depth[1]	Depth by cable marks[2]	Depth by Payout[1]	Δdepth P-K[1]
~~1000 m~~					
1500.13 ~~1500 m~~	6:11	47.376	1483	1477.55	-4.38
~~2000 m~~	6:44	46.431	1980	1969.48	-6.43
~~2100 m~~					
2209.06 ~~2200 m~~	6:56	46.073	2180	2166.76	-8.68
~~2300 m~~					
~~2400 m~~					

[1]Read off monitoring screen
[2]Cable mark offset = 1.5 (from p.4) (at DOM59) – ~~17~~ 17.132 m = -15.632 (at DOM60)

☐ Switch to manual control @ 2400 m

☑ Well depth
~~@ 2420:~~
@ ~~2440:~~ 45.657 2445.36 before anchoring
~~2448.09~~

☑ Position string at target depth of **2450** m Time: 7:20

☑ String secured with Yale grip and anchor chain Time: 7:52

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

☐ Distance from Paro to DOM60:

$d_{Paro\text{-}DOM59}$ = 1.055 (from p. 4)

$d_{Paro\text{-}DOM60}$ = ($d_{Paro\text{-}DOM59}$ + ~~17~~ 17.132) m = 18.187 ← 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	3428.3 PSI	2670 PSI	2413.1 m	2449.3 m
Offset	10.07 PSI	-3.5 PSI	-1.6 m	-15.5 m
Well depth	45.3 m		This space is intentionally left blank	
Dist. to DOM60	m	m		
DEPTH (DOM60)	2551.5	2460	2414.7	2464.8

Time: 7:52 2451 - 17 = 2449.3

Final depth (DOM60): 2551.5

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: 7158 Date: 1/23/07

Shift Lead: Tom Ham
name / signature

Logger: _____
name / signature

PTS Lead: Justin Vandenbroucke / JVdB
name / signature

Deployment Manager: Tom Ham
name / signature

Safety Officer: _____
name / signature

IceCube On-ice Lead: _____
name / signature

Michelangelo

IceCube Deployment Monitoring Check Sheet (IDMCS)

47

Version 4.0
December 12, 2006

Kurt Woschnagg, UCB

Justin J-9-11

Sebastian B-1-105 61765

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

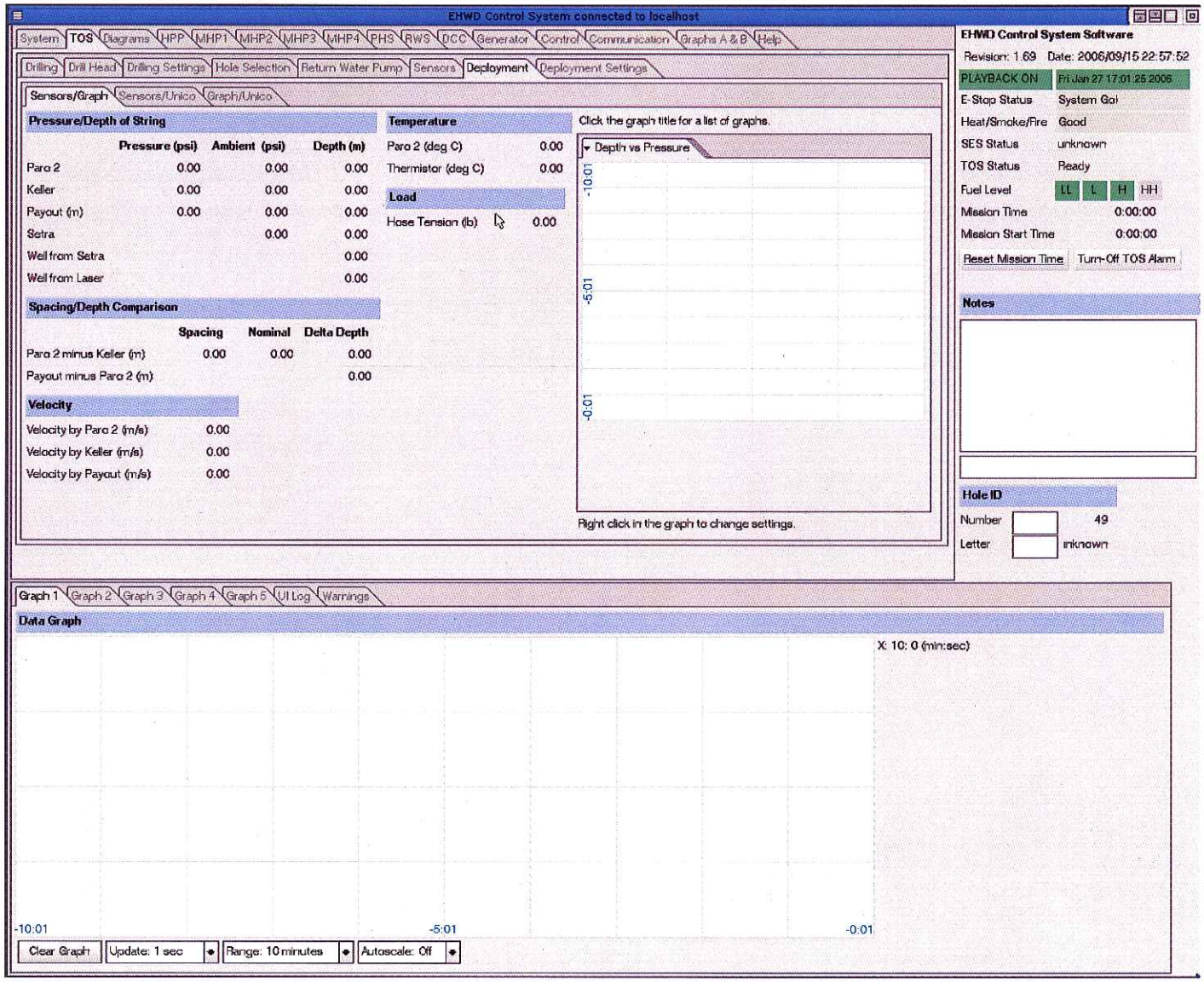
- All vertical measurements are relative to the floor of the tower (not the lip of the kick board).
  - Measure well depth from this level.
  - Take cable mark readings at this level.
- The location of a DOM on a string (for distance measurements) is defined as the position of the center of the sphere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

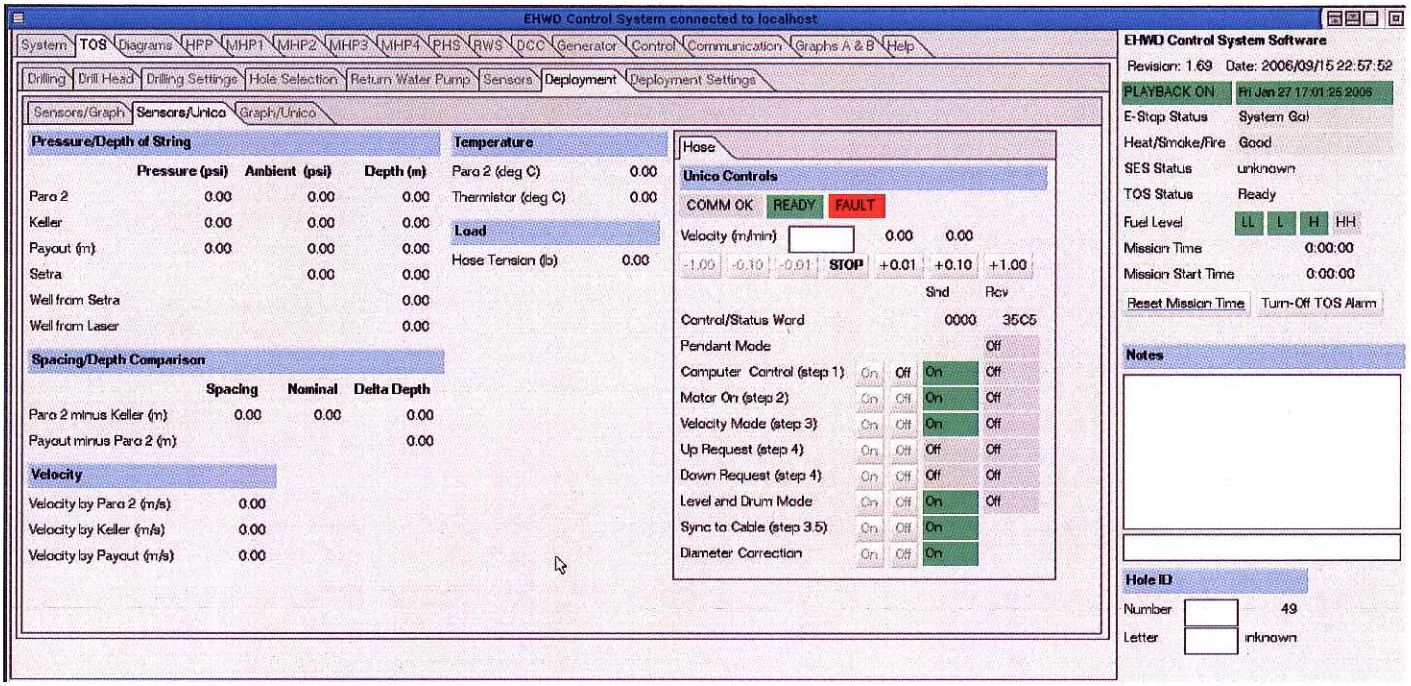
Pressure/Depth of String Current and ambient (air) pressures, and the corrected depths at DOM60.
Spacing/Depth Comparison Difference in depth from pressure data. *Should be stable during deployment!*
Velocity The deployment velocity calculated from recent pressure/payout readings.
Temperature Temperature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



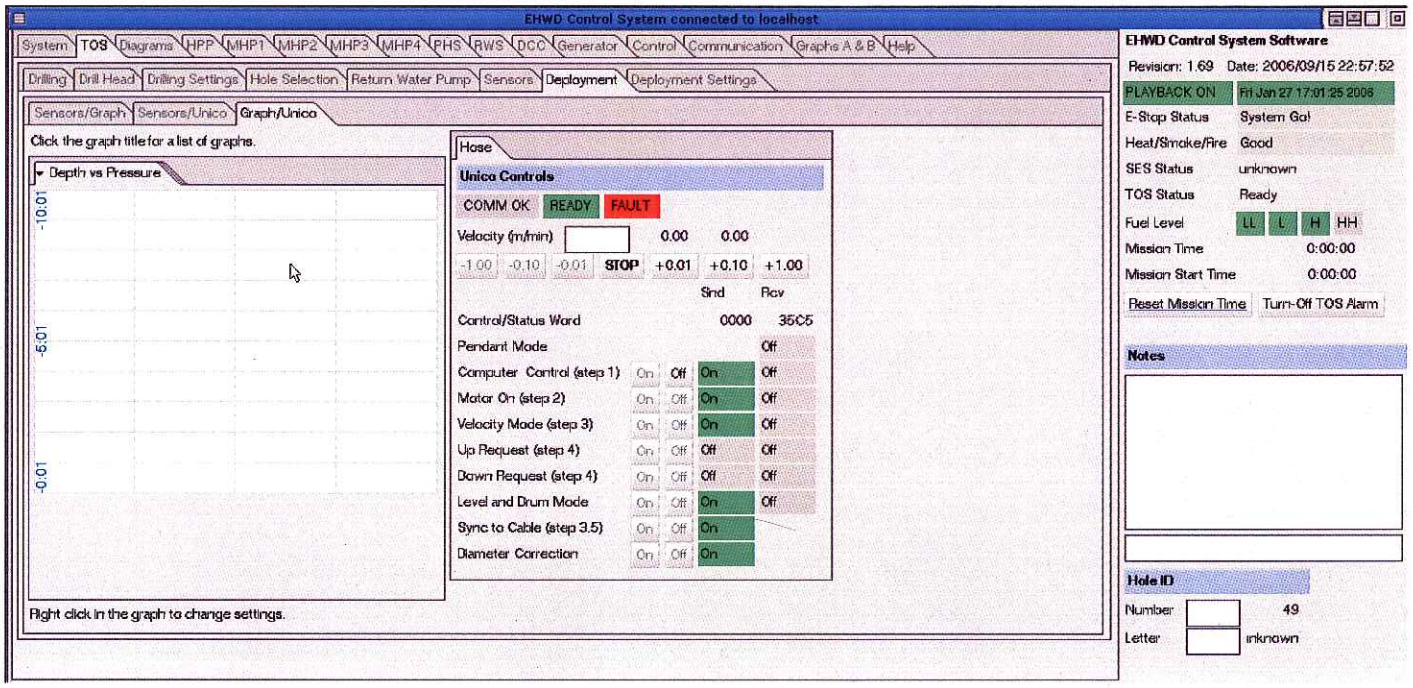
Screen Tab: TOS ► Deployment

► 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

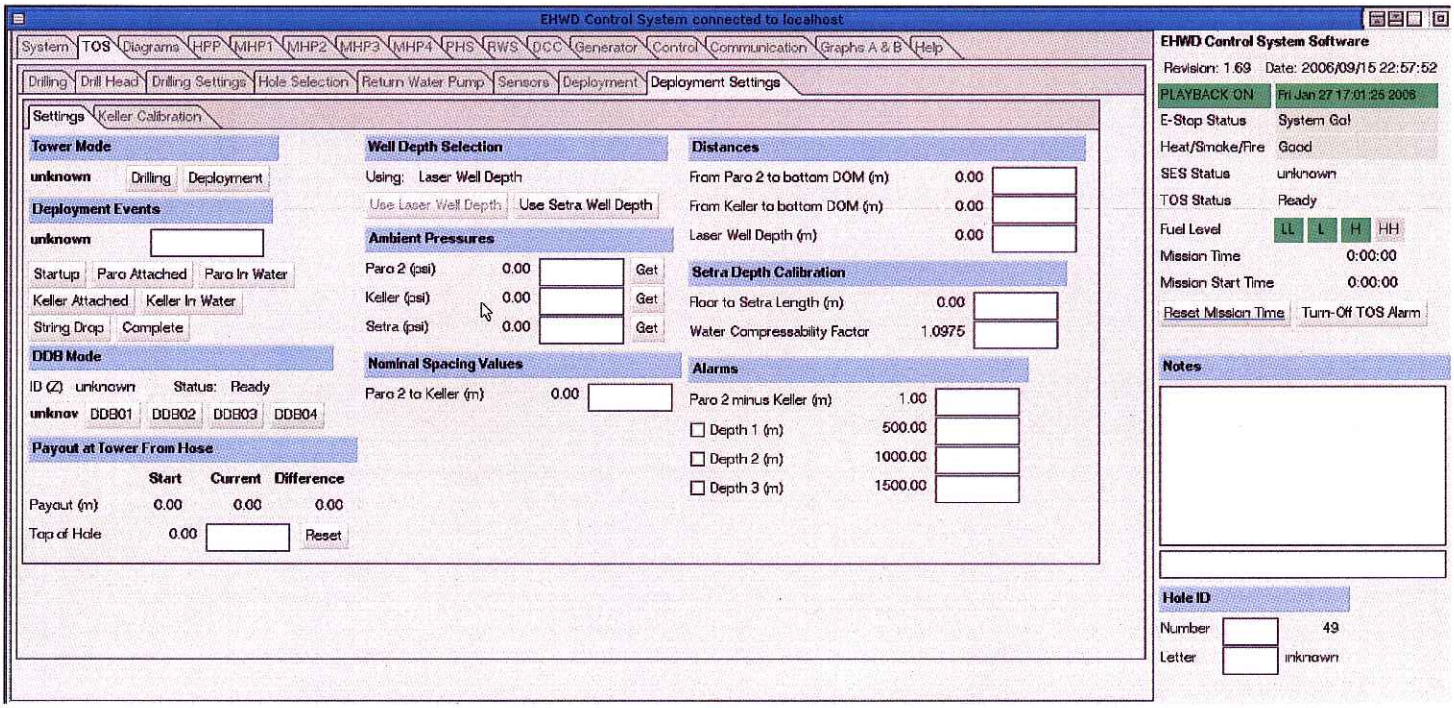


Screen Tab: TOS ▶ Deployment Settings

▶ 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).



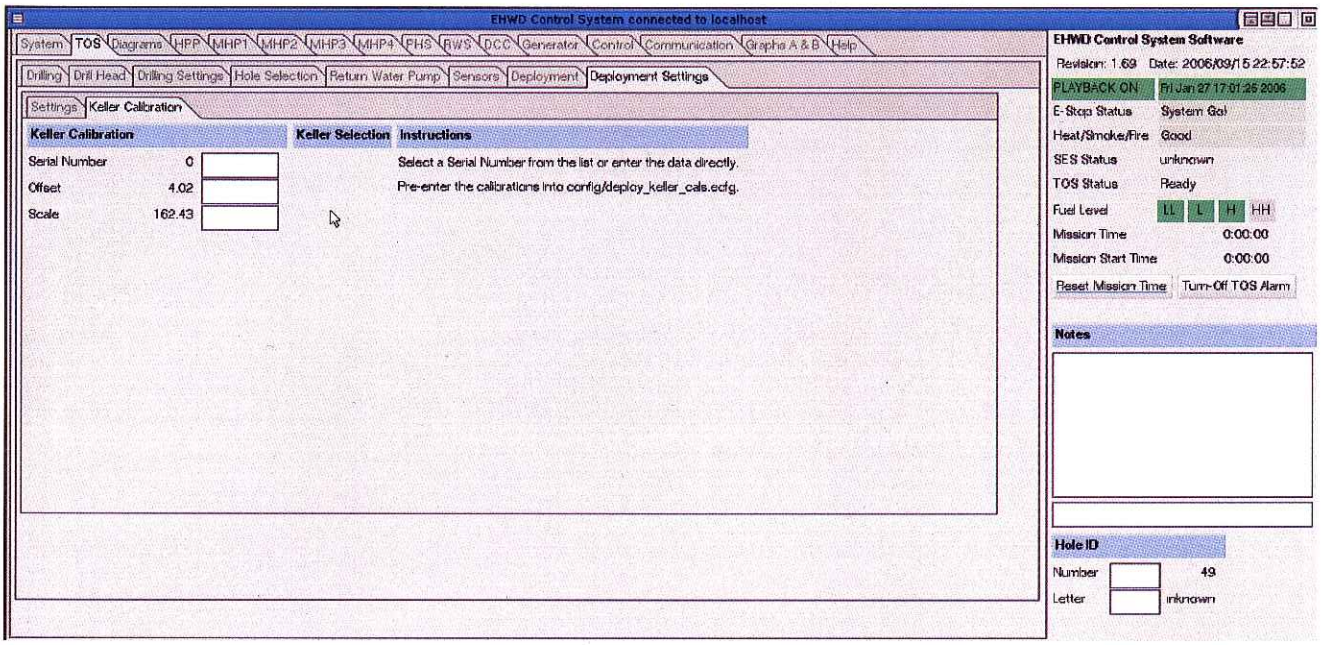
Deployment Events

☐ **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

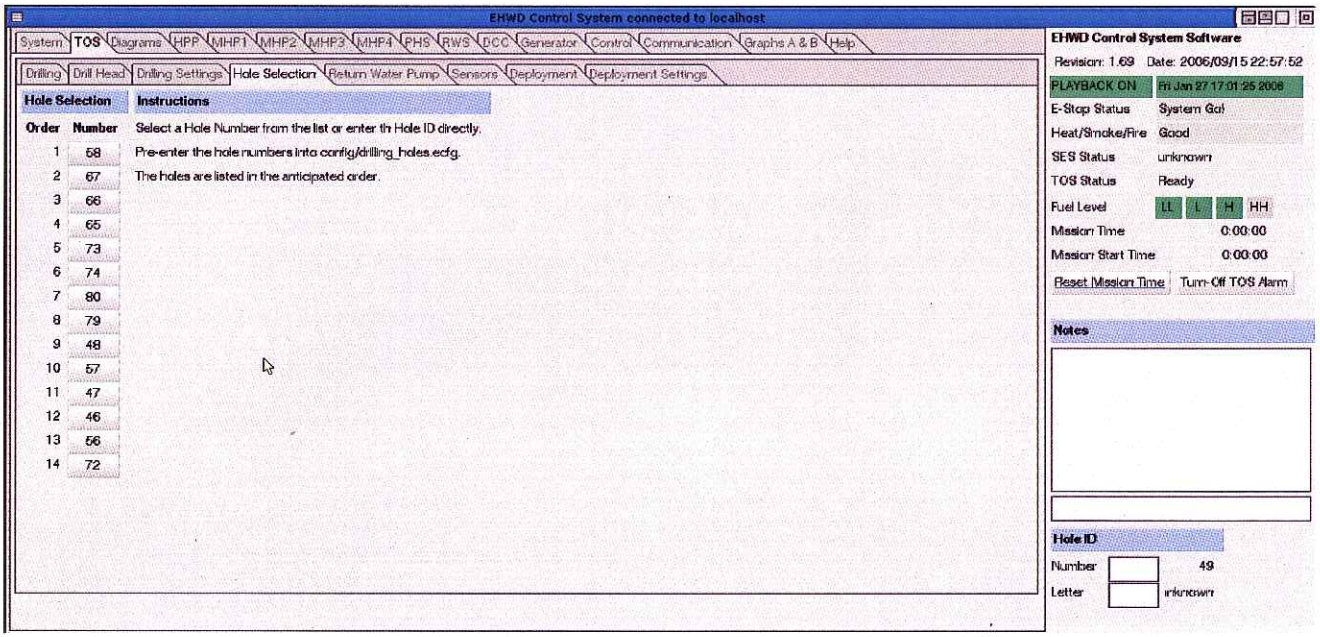
► Keller Calibration

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 # 47

DATE: 1/22/07

Before Deployment

- [x] **Action**: Locate laser ranger for well depth measurements.
- [x] **Action**: Locate metric tape measure.
- [ ] **Action**: Locate one Paro and one Keller, *plus spares* of each. need 1 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.
- [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) 3

Logbook: DDB#

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

ENTER: Well depth [m] will do later, est. 47.5 m, but too frothy

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] 1.5

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

Logbook: Paro serial number 98172

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

☑ **Action**: Measure distance between Paro location and nearest DOM. 1.055 m above DOM 59

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

1.055 + 17.132 = 18.187

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] ≈2m

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

ENTER: Ambient pressure [PSI] for Paro 10.07

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 0606746

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). .976 m + 31×17 = 527.976

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

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 #47

Name	Number	Position
Walrusish	TP4P0313	60
Haihowak	UP6P1424	59
Mariatorget	TP5H0231	58
Seglargrundet	UP5H0254	57
Ensta	TP5H0203	56
Kemps_Card	UP6P1412	55
Kassgrundet	TP5H0121	54
Craits	UP6P1416	53
Ulriksdal	TP5H0249	52
Hapi	UP6Y4382	51
Duat	TP6Y4325	50
Asat	UP6Y4292	49
Svarthakedopping	TP5H0207	48
Kihanga	UP6Y4252	47
Tepoztecatl	TP6Y4361	46
Knipa	UP5H0150	45
Kungsfiskare	TP5H0127	44
Skata	UP5H0132	43
Huracan	TP6Y4307	42
Engai	UP6Y4234	41
Bondkobben	TP5H0133	40
Tallbit	UP5H0234	39
Tali	TP6Y4391	38
Storlom	UP5H0230	37
Hatmehit	TP6Y4415	36
Ichneumon	UP6Y4258	35
Mehit	TP6Y4423	34
Cheper	UP6Y4402	33
Albrecht Karle	XXXXXXX	32
Li_Tiekuai	UP6Y4448	31
Ahmakiq	TP6Y4245	30
Gla	UP6Y4254	29
Pangu	TP6Y4451	28
Orunmila	UP6Y4256	27
Nchienge	TP6Y4321	26
Celsiusgatan	UP6H7522	25
Pemba	TP6Y4407	24
Kadesch	UP6Y4398	23
Coyopa	TP6Y4279	22
Yum_Xac	UP6Y4282	21
Hayagriva	TP6Y4419	20
Alkekung	UP5H0190	19
Top_Trumps	TP6P1417	18
Kali	UP6Y4314	17
Cumhau	TP6Y4283	16
Sixty_three	UP6P1388	15
Fiskekobb	TP5H0227	14
Fingerbulen	UP5H0228	13

? TP6Y4319

Li_No_cha	TP6Y4467	12
Benben	UP6Y4426	11
Bingo_Card	TP6P1397	10
Cakulha	UP6Y4288	9
Gulkobben	TP5H0145	8
Fong_Tsai	UP6Y4370	7
Crazy_Eights	TP6P1405	6
Makaras	UP6Y4248	5
Xochipilli	TP6Y4337	4
Hun_Nal	UP6Y4374	3
Ropsten	TP5H0243	2
	UP6H7506	1
Dchi	TP6Y4273	
Moya	TP6Y4319	
Eiebt	TP6Y4479	
Nefertem	UP6Y4280	
Amentet	UP6Y4342	
Harachte	UP6Y4420	