# DEPLOYMENT LOG for IceCube STRING # 30

Deployment Start: *at* _____ *on* 13 ~~9~~ Jan 2006

Deployment End: *at* 7:40 AM *on* Jan/14/2006

Target depth (DOM60): **2450** m Final depth: 2453.34

## Deployment Crew

| Position | First Shift | Second Shift | Third Shift |
|---|---|---|---|
| Shift lead | Gary Hill | | |
| DOM install 1 (high) | Jan Eichi | | |
| DOM install 2 (low) | Patrick | | |
| DOM supply 1 / DOM install 3 | Bernhard | | |
| DOM supply 2 / floater | Kara/Hogler/Andreas | | |
| Winch operator (cable & tower) | Dan | | |
| Notary (logbook & photos) | Ethan | | |
| PTS (monitoring / sensors) | Andree/Justin | Justin/Ignacio | |
| Support (optional) | | | |
| Time shift on: | | | |
| Time shift off: | | | |

Summary/Comments:

need digital clock for TOS

## 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: 18:54

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

☑ Deployment hole cover on hand Time: 18:59

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

- ☐ Deployment monitoring system (PTS) operational ☐ DDB# 3
- ☐ Pressure sensors on hand: Paro(s) and Keller
- ☐ Laser ranger, tape measure (metric) on hand

- ☑ Loopback terminators connected (inside cable reel drum) DDB 1
- ☐ Uphole pressure system on hand: Setra sensor and cable switched during deployment
- ☐ DOMs placed in racks
- ☑ Weight stack on hand: weights (5) and 2 m cable

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): Ethan Gary Dan
- ☑ ☐ CPR trained: Ethan Gary Dan Kara
- ☐ ☐ Food runners: _____

call galley at 65521

- ☑ End of Main Cable brought into TOS and secured 19:53
- ☑ Disable Payout ← Added by I. Taboada

19:47 weight stack start

## Cable end attachments

2 holes @ 2 levels

- ☑ Measure well depth: 49.9 / 50.4 one firn hole ~10m below water level; one lost water hole
- ☑ Weights (5) attached may be other hole water level
- ☑ Weight cable attached (weight stack complete) Time: ~~[illegible]~~ 20:09

main cable tied off 19:53 in TOS

weight stack complete

IceCube String Deployment Log String 30

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

## DOM position 60

(T, Long) Cable mark: ~~NA~~ 0.6

DOM id: ☐ TP4P0137
☐ _____
Reason for substitution:

☐ Bottom shackle connected to weight stack
☐ Top clutch connected at link # 19
☐ Bow OK → ☐ clutch zip tied
☐ Cable end taped to weight stack cable
Photos: ☐ chain with clutch ☐ phi orientation ☐ whole view

Payout: N/A

20:32 DOM 60 descent

## DOM position 59

(U, Short) Cable mark: 17.5

DOM id: ☐ UP4H0025
☐ _____
Reason for substitution:

☐ Bottom shackle connected
☐ Top clutch connected at link # 18
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ chain with clutch ☐ phi orientation ☐ whole view

Δ(59-60): 17.1 (use laser ranger)

## Breakout 30

Time: 20:36

Depth:

Payout N/A

-13?

21:26 DOM59 descent

☐ Cable/LC continuity test complete (Q16)
- ☐ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

20:53 waiting on Matt Newcomb to come from station problem w/ paro readout

20:59 Newcomb arrived

21:22 - New paro working software probl

**Thermistor:** ☐ Present ☐ Distance to DOM59: 49 cm

**Paro:** (= Paro2) ☐ Connected ☐ Operational ☐ Air pressure [PSI]: _____

Ser.#: 98105 ☐ Cable mark: 18.9 ☐ Distance to DOM59: 1.29 m

Adapter: 147 Ω ☐ All clear to lower cable ☺ Nipple ☐ on ☐ off

98107 ~~[illegible]~~ 98173 147 Ω

21:25 DOB RS485, Ethernet dead

21:26

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

## DOM position 58

(T, Long) Cable mark: 34.7

DOM id: ☐ TP4P0091
☐ _____
Reason for substitution:

☑ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(58-59): 17.0
☐ Bow OK → ☐ clutch zip tied
Photos: ☑ chain with clutch ☑ phi orientation ☑ whole view

## DOM position 57

(U, Short) Cable mark: 51.6

DOM id: ☑ UP4H0030
☐ _____
Reason for substitution:

☑ Bottom shackle connected
☑ Top clutch connected at link # 19 Δ(57-58): 17.1 no stickers
☑ Bow OK → ☑ clutch zip tied
Photos: ☑ chain with clutch ☑ phi orientation ☑ whole view

## Breakout 29

☑ Cable/LC continuity test complete (Q16)
- ☑ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☑ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☑ connector O-ring in place and ☑ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☑ connected

☑ Loose pigtails taped to cable

Time:
Now 20:36 21:38
Last b/o 20:36
Δt [min] 1:02

Depth:
Paro2 N/A
Payout N/A

☑ All clear to lower cable ☺

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

## DOM position 56

(T, Long) Cable mark: 68.7

DOM id: ☒ TP4Y0051
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 19 Δ(56-57): 17.0
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## DOM position 55

(U, Short) Cable mark: 85.6

DOM id: ☒ UP4P0084
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(55-56): 17.1
☒ Bow OK → ☐ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## Breakout 28

Time:
Now 21:56
Last b/o 21:38
Δt [min] :18

Depth:
Paro2 N/A
Payout N/A

☒ Cable/LC continuity test complete (Q15)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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: ☐ TP5P0929
☐ _____
Reason for substitution:

(T, Long) Cable mark: ~~102~~ 102.8

☐ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(54-55): 17.1
☑ Bow OK → ☐ clutch zip tied
Photos: ☑ chain with clutch ☑ phi orientation ☑ whole view

## DOM position 53

DOM id: ☑ UP4P0080
☐ _____
Reason for substitution:

(U, Short) Cable mark: 119.6

☑ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(53-54): 17.1
☐ Bow OK → ☑ clutch zip tied
Photos: ☑ chain with clutch ☑ phi orientation ☐ whole view

## Breakout 27

Time:
Now 22:08
Last b/o 21:56
Δt [min] :12

Depth:
Paro2 127.1
Payout N/A

☑ Cable/LC continuity test complete (Q15)
- ☐ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☐ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☐ lubed
  - ☑ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☐ connector O-ring in place and ☐ lubed
  - ☑ breakout O-ring in place and ☑ lubed
  - ☐ connected

☑ Loose pigtails taped to cable

**Thermistor:** ☑ Present ☐ Distance to DOM53: _____
No

☑ All clear to lower cable ☺

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

**DOM position 52** DOM id: ☐ TP4H0036

(T, Long) Cable mark: 136.9 ☐ _____

Reason for substitution: no id

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(52-53): 1.1

☐ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

**DOM position 51** DOM id: ☒ UP4P0120

(U, Short) Cable mark: 153.9 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(51-52): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 26** Time:

☒ Cable/LC continuity test complete (Q14)

☒ all pass

☐ fail: _____

Now 22:19

Last b/o 22:08

Δt [min] :11

- LongDOM

☐ connector discharged (ESD)

☒ connector O-ring in place and ☒ lubed

☒ breakout O-ring in place and ☒ lubed

☒ connected

Depth:

Paro2 159.3

Payout N/A

- ShortDOM

☐ connector discharged (ESD)

☒ connector O-ring in place and ☒ lubed

☒ breakout O-ring in place and ☒ lubed

☒ connected

☒ Loose pigtails taped to cable

Thermistor distance to DOM 51 58cm

☒ All clear to lower cable ☺

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

## DOM position 50

(T, Long) Cable mark: 170.8

DOM id: ☒ TP4H0050
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(50-51): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view
☒ Curved distance around DOM: ~~[illegible]~~ 2.42m ☐ Vertical distance: 2.40

## DOM position 49

(U, Short) Cable mark: 187.8

DOM id: ☒ UP5H0160
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(49-50): 17.0
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view
☒ Curved distance around DOM: 2.42 ☐ Vertical distance: 2.40

## Breakout 25

Time:
Now 22:33
Last b/o 22:19
Δt [min] :14

Depth:
Paro2 187.7
Payout N/A

☒ Cable/LC continuity test complete (Q14)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☐ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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: ☒ TP5Y0221

(T, Long) Cable mark: 204.8 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(48-49): 171

☐ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 47** DOM id: ☒ UP5Y0182

(U, Short) Cable mark: 221.8 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(47-48): 170

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 24**

Time:

Now 22:44

Last b/o 22:33

Δt [min] 11

Depth:

Paro2 221.8

Payout _____

☒ Cable/LC continuity test complete (Q13)

- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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: ☐ TP4P0217

(T, Long) Cable mark: 238.9 ☐ _____

Reason for substitution:

☐ Bottom shackle connected

☐ Top clutch connected at link # 18 Δ(46-47): 17.1

☐ Bow OK → ☐ clutch zip tied

Photos: ☐ chain with clutch ☐ phi orientation ☐ whole view

**DOM position 45** DOM id: ☐ UP4P0276

(U, Short) Cable mark: 255.9 ☐ _____

Reason for substitution:

☐ Bottom shackle connected

☐ Top clutch connected at link # 18 Δ(45-46): 17.1

☐ Bow OK → ☐ clutch zip tied

Photos: ☐ chain with clutch ☐ phi orientation ☐ whole view

**Breakout 23**

Time:

Now 22:53

Last b/o 22:44

Δt [min] 109

Depth:

Paro2 255.1

Payout N/A

☐ Cable/LC continuity test complete (Q13)

☐ all pass

☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

**Thermistor:** ☐ Present ☐ Distance to DOM45: _____

Not present

☑ All clear to lower cable ☺

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

**DOM position 44** DOM id: ☒ TP5Y0213

(T, Long) Cable mark: 2729 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☐ Top clutch connected at link # 18 Δ(44-45): 17.1

☐ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 43** DOM id: ☒ UP5Y0154

(U, Short) Cable mark: 289.9 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(43-44): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 22** Time:

☒ Cable/LC continuity test complete (Q12) Now 23:04

☒ all pass Last b/o 22:53

☐ fail: _____ Δt [min] :11

- LongDOM Depth:
  - ☐ connector discharged (ESD) Paro2 289.9
  - ☒ connector O-ring in place and ☒ lubed Payout N/A
  - ☐ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected

☒ Loose pigtails taped to cable

Therm-sta 54 cm

☒ All clear to lower cable ☺

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

## DOM position 42

(T, Long) Cable mark: _____

DOM id: ☒ TP4P0207
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(42-43): 17.8
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## DOM position 41

(U, Short) Cable mark: 323.9

DOM id: ☒ UP4P0218
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(41-42): 17.8
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☐ phi orientation ☐ whole view

## Breakout 21

Time:
Now 23:14
Last b/o 23:04
Δt [min] :10

Depth:
Paro2 323.6
Payout N/A

☒ Cable/LC continuity test complete (Q12)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☐ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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: ☒ TP4H0041

(T, Long) Cable mark: 340.9 ☐ _____

Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(40-41): 12.0
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

**DOM position 39** DOM id: ☒ UP4H0054

(U, Short) Cable mark: 357.9 ☐ _____

Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(39-40): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

**Breakout 20**

☒ Cable/LC continuity test complete (Q11)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☐ connected

☒ Loose pigtails taped to cable

Time:

Now 23:32
Last b/o 23:14
Δt [min] :18

Depth:

Paro2 ~~[illegible]~~ 3566
Payout _____

23:21 problem with cable
23:27 cable motion resumed
* ropes snagged on thimble - photo taken

☒ All clear to lower cable ☺

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

**DOM position 38** DOM id: ☐ TP5Y0207

(T, Long) Cable mark: 375.0 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(38-39): 17.1

☒ Bow OK → ☐ clutch zip tied

Photos: ☐ chain with clutch ☐ phi orientation ☐ whole view

**DOM position 37** DOM id: ☒ UP5Y0214

(U, Short) Cable mark: 392.0 ☐ 1

Reason for substitution:

☐ Bottom shackle connected

☐ Top clutch connected at link # 18 Δ(37-38): 17.0

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☐ phi orientation ☐ whole view

**Breakout 19** Time:

☒ Cable/LC continuity test complete (Q11)

☒ all pass

☐ fail: _____

Now 23:43

Last b/o 23:32

Δt [min] 11

- LongDOM

☐ connector discharged (ESD)

☐ connector O-ring in place and ☐ lubed

☐ breakout O-ring in place and ☐ lubed

☐ connected

Depth:

Paro2 390.8

Payout _____

- ShortDOM

☐ connector discharged (ESD)

☐ connector O-ring in place and ☐ lubed

☐ breakout O-ring in place and ☐ lubed

☐ connected

23:41 cable snagged again

☐ Loose pigtails taped to cable

☐ All clear to lower cable ☺

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

**DOM position 36**
(T, Long) Cable mark: 409.0

DOM id: ☒ TP4P0191
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 10 Δ(36-37): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 35**
(U, Short) Cable mark: 426.0

DOM id: ☒ UP4P0176
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(35-36): 17.0
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 18**

Time:
Now 23:53
Last b/o 23:43
Δt [min] :10

Depth:
Paro2 426.4
Payout _____

☒ Cable/LC continuity test complete (Q10)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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: ☒ TP4H0040

(T, Long) Cable mark: 443.0 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☐ Top clutch connected at link # 18 Δ(34-35): 17.0

☐ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 33** DOM id: ☒ UP4H0045

(U, Short) Cable mark: 460.0 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(33-34): 17.0

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 17**

Time:

Now 00:03

Last b/o 23:53

Δt [min] :10

Depth:

Paro2 469.9

Payout N/A

☒ Cable/LC continuity test complete (Q10)

- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☐ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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**
(T, Long) Cable mark: 477.0

DOM id: ☒ TP5Y0123
☐ _____
Reason for substitution:

crazed gel ok to deploy

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(32-33): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 31**
(U, Short) Cable mark: 494.0

DOM id: ☒ UP5Y0206
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(31-32): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 16**

Time:
Now 00:14
Last b/o 0003
Δt [min] :11

Depth:
Paro2 493.8
Payout _____

☒ Cable/LC continuity test complete (Q9)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☐ connected

00:19 ~~dm~~ lunch start
00:41 lunch end

☒ Loose pigtails taped to cable

☒ All clear to lower cable ☺

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

**DOM position 30** DOM id: ☒ TP4H0016

(T, Long) Cable mark: 511.0 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(30-31): 17.0

☐ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 29** DOM id: ☒ UP4P0190

(U, Short) Cable mark: 528.0 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(29-30): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 15**

☒ Cable/LC continuity test complete (Q9)

☐ all pass

☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☐ lubed
  - ☒ breakout O-ring in place and ☐ lubed
  - ☒ connected

☒ Loose pigtails taped to cable

Time:

Now 00:48

Last b/o 00:14 22 min lunch

Δt [min] 34

Depth:

Paro2 529.1

Payout N/A

keller bucket contaminated with fuel

replaced with dry keller

**Thermistor:** ☒ Present ☒ Distance to DOM29: 44 cm

**Keller:** ☒ Connected ☒ Operational ☒ Air pressure [PSI]: 108

Ser.#: 407559 ☐ Cable mark: _____ ☒ Distance to DOM29: ~~[illegible]~~ 1.75 tape

☒ All clear to lower cable ☺

Pase measurements have not been made correctly

DTP not use right zero point

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

**DOM position 28** DOM id: ☒ TP4P0167

(T, Long) Cable mark: 545.1 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(28-29): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 27** DOM id: ☒ UP4P0188

(U, Short) Cable mark: 562.1 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(27-28): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 14** Time:

☒ Cable/LC continuity test complete (Q8)

☒ all pass

☐ fail: _____

Now 01:13

Last b/o 00:48

Δt [min] :15

- LongDOM

☐ connector discharged (ESD)

☒ connector O-ring in place and ☒ lubed

☒ breakout O-ring in place and ☒ lubed

☒ connected

Depth:

Paro2 561.4

Keller N/A

Payout N/A

- ShortDOM

☐ connector discharged (ESD)

☒ connector O-ring in place and ☒ lubed

☒ breakout O-ring in place and ☒ lubed

☒ connected

tape down hole

☒ Loose pigtails taped to cable

☒ All clear to lower cable ☺

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

**DOM position 26** DOM id: ☒ TP4H0037

(T, Long) Cable mark: 579.1 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(26-27): 17.1

☐ Bow OK → ☐ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 25** DOM id: ☒ UP4H0026

(U, Short) Cable mark: 596.2 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(25-26): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 13** Time:

☒ Cable/LC continuity test complete (Q8)

☒ all pass

☐ fail: _____

Now 01:24

Last b/o 01:13

Δt [min] :11

- LongDOM

☐ connector discharged (ESD)

☒ connector O-ring in place and ☒ lubed

☒ breakout O-ring in place and ☒ lubed

☒ connected

- ShortDOM

☒ connector discharged (ESD)

☒ connector O-ring in place and ☒ lubed

☒ breakout O-ring in place and ☒ lubed

☒ connected

☒ Loose pigtails taped to cable

Depth:

Paro2 597.1

Keller N/A

Payout _____

☒ All clear to lower cable ☺

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

**DOM position 24** DOM id: ☒ TP5Y0185

(T, Long) Cable mark: _____ ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☐ Top clutch connected at link # 18 Δ(24-25): 17.1

☐ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

**DOM position 23** DOM id: ☒ UP5Y0178

(U, Short) Cable mark: 630.2 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(23-24): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☐ chain with clutch ☒ phi orientation ☐ whole view

**Breakout 12** Time:

☒ Cable/LC continuity test complete (Q7)

☒ all pass

☐ fail: _____

Now 01:36

Last b/o 01:24

Δt [min] :12

- LongDOM

☐ connector discharged (ESD)

☒ connector O-ring in place and ☐ lubed

☒ breakout O-ring in place and ☐ lubed

☐ connected

Depth:

Paro2 630.0

Keller 619.6

Payout N/A

10.4 m Δ

- ShortDOM

☐ connector discharged (ESD)

☒ connector O-ring in place and ☒ lubed

☐ breakout O-ring in place and ☒ lubed

☐ connected

tape in hole

☐ Loose pigtails taped to cable

☒ All clear to lower cable ☺

1



7

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

**DOM position 22**
(T, Long) Cable mark: 647.3

DOM id: ☐ TP4H0038
☐ _____
Reason for substitution:

no id

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(22-23): 17.1
☒ Bow OK → ☐ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 21**
(U, Short) Cable mark: 664.3

DOM id: ☐ UP4P0182
☐ _____
Reason for substitution:

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(21-22): 17.1
☐ Bow OK → ☐ clutch zip tied
Photos: ☒ chain with clutch ☐ phi orientation ☐ whole view

**Breakout 11**

Time:
Now 01:46
Last b/o 01:36
Δt [min] :10

Depth:
Paro2 ~~BM~~ 664.0
Keller 641.0
Payout _____

23m Δ

☒ Cable/LC continuity test complete (Q7)
- ☐ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☐ lubed
  - ☒ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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: ☒ TP4P0205

(T, Long) Cable mark: 681.3 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(20-21): 17.1

☐ Bow OK → ☒ clutch zip tied

Photos: ☐ chain with clutch ☒ phi orientation ☒ whole view

☒ Curved distance around DOM: 2.39 ☐ Vertical distance: 2.36

**DOM position 19** DOM id: ☒ UP4P0178

(U, Short) Cable mark: 698.3 ☒ UP5P0578

Reason for substitution: broken connector

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(19-20): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

☐ Curved distance around DOM: 2.40 ☐ Vertical distance: 2.32

**Breakout 10**

☒ Cable/LC continuity test complete (Q6)

- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected

☒ Loose pigtails taped to cable

Time:

Now 02:00

Last b/o 01:46

Δt [min] :14

Depth:

Paro2 699.9

Keller 664.3

Payout _____

3561

connector broken

DOM 19 swapped out

photo taken

☐ All clear to lower cable ☺

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

**DOM position 18** DOM id: ☐ TP4H0023

(T, Long) Cable mark: 715.3 ☐ _____ no ID

Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(18-19): 17.1
☐ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 17** DOM id: ☐ UP5Y0224

(U, Short) Cable mark: 732.4 ☐ _____

Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(17-18): 17.1
☒ Bow OK → ☐ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

**Breakout 9**

Time:

Now 02:19
Last b/o 02:00
Δt [min] 19

Depth:

Paro2 732.6
Keller 687.6
Payout N/A

45.0 m L

☒ Cable/LC continuity test complete (Q6)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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: ☒ TP5Y0169

(T, Long) Cable mark: 749.4 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(16-17): 17.1

☐ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 15** DOM id: ☒ UP5Y0100

(U, Short) Cable mark: ~~1M~~ 766.4 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 17 Δ(15-16): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 8** Time:

☒ Cable/LC continuity test complete (Q5)

☒ all pass

☐ fail: _____

Now 02:33

Last b/o 02:19

Δt [min] :14

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☐ connected

☒ Loose pigtails taped to cable

Depth:

Paro2 766.39

Keller 740.12

Payout _____

02:28 - 02:31

unusual noises from reel + tower when snagged breakout came through crescent

☒ All clear to lower cable ☺

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

**DOM position 14** DOM id: ☒ TP4P0163

(T, Long) Cable mark: 783.5 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☐ Top clutch connected at link # 18 Δ(14-15): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

**DOM position 13** DOM id: ☒ UP5P0654

(U, Short) Cable mark: 800.5 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☐ Top clutch connected at link # 18 Δ(13-14): 17.1

☐ Bow OK → ☐ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 7** Time:

☒ Cable/LC continuity test complete (Q5)

- ☒ all pass
- ☐ fail: _____

Now 02:50

Last b/o 02:33

Δt [min] :17

- LongDOM
  - ☐ connector discharged (ESD)
  - ☐ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☐ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected

☒ Loose pigtails taped to cable

Depth:

Paro2 801.24

Keller 776.50

Payout _____

☒ All clear to lower cable ☺

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

## DOM position 12

(T, Long) Cable mark: 817.5

DOM id: ☒ TP4P0155
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(12-13): 17.0
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## DOM position 11

(U, Short) Cable mark: _____

DOM id: ☒ UP4P0330
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(11-12): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## Breakout 6

☒ Cable/LC continuity test complete (Q4)
- ☐ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☐ connected

☒ Loose pigtails taped to cable

Time:
Now 03:03
Last b/o 02:50
Δt [min] :13

Depth:
Paro2 834.96
Keller 808.32
Payout _____

☒ All clear to lower cable ☺

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

**DOM position 10** DOM id: ☒ TP4H0020

(T, Long) Cable mark: 851.5 ☐ _____

Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(10-11): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 9** DOM id: ☒ UP5Y0190

(U, Short) Cable mark: 868.5 ☐ _____

Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(9-10): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

**Breakout 5** Time:

☒ Cable/LC continuity test complete (Q4)
- ☒ all pass
- ☐ fail: _____

Now 03:13
Last b/o 03:03
Δt [min] :10

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☐ connected

☒ Loose pigtails taped to cable

Depth:
Paro2 869.24
Keller 846.50
Payout _____

☒ All clear to lower cable ☺

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

**DOM position 8**
(T, Long) Cable mark: 885.5

DOM id: ☐ TP5Y0143
☒ TP5H0197
Reason for substitution: DOM has been dropped in past. decided to use a spare

☒ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(8-9): 17.1
☐ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

**DOM position 7**
(U, Short) Cable mark: 892.5

DOM id: ☐ UP4P0342
☐ _____
Reason for substitution:

☐ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(7-8): 17.0
☒ Bow OK → ☐ clutch zip tied
Photos: ☒ chain with clutch ☐ phi orientation ☐ whole view

**Breakout 4**

☒ Cable/LC continuity test complete (Q3)
☒ all pass
☐ fail: _____

- LongDOM
  ☐ connector discharged (ESD)
  ☒ connector O-ring in place and ☒ lubed
  ☒ breakout O-ring in place and ☒ lubed
  ☐ connected
- ShortDOM
  ☐ connector discharged (ESD)
  ☒ connector O-ring in place and ☒ lubed
  ☐ breakout O-ring in place and ☒ lubed
  ☐ connected

☒ Loose pigtails taped to cable

Time:
Now 03:32
Last b/o 03:13
Δt [min] :19

Depth:
Paro2 903.8
Keller 880.13
Payout N/A

☒ All clear to lower cable ☺

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

**DOM position 6**
(T, Long) Cable mark: 919.6

DOM id: ☒ TP5Y0081
☐ _____
Reason for substitution:

gc photo

☐ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(6-7): 17.1
☒ Bow OK → ☐ clutch zip tied
Photos: ☐ chain with clutch ☐ phi orientation ☐ whole view

**DOM position 5**
(U, Short) Cable mark: 936.6

DOM id: ☒ UP4P0340
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☐ Top clutch connected at link # 17 Δ(5-6): 17.1
☒ Bow OK → ☐ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

**Breakout 3**

☒ Cable/LC continuity test complete (Q3)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☐ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected

☒ Loose pigtails taped to cable

Time:
Now 03:46
Last b/o 03:32
Δt [min] .14

Depth:
Paro2 ~~[illegible]~~ 938.52
Keller 909.22
Payout _____

☒ All clear to lower cable ☺

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

**DOM position 4** DOM id: ☒ TP4H0046

(T, Long) Cable mark: 953.6 ☐ _____

Reason for substitution:

☒ Bottom shackle connected
☐ Top clutch connected at link # ~~10~~ 17 Δ(4-5): 17.1
☒ Bow OK → ☐ clutch zip tied
Photos: ☐ chain with clutch ☐ phi orientation ☒ whole view

**DOM position 3** DOM id: ☒ UP4H0058

(U, Short) Cable mark: ~~977.6~~ 979.6 ☐ _____

Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(3-4): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 2** Time:

☒ Cable/LC continuity test complete (Q2) Now 03:58
☒ all pass Last b/o 03:46
☐ fail: _____ Δt [min] :12

- LongDOM Depth:
  ☐ connector discharged (ESD) Paro2 972.04
  ☒ connector O-ring in place and ☒ lubed Keller 951.01
  ☒ breakout O-ring in place and ☐ lubed Payout _____
  ☐ connected
- ShortDOM
  ☐ connector discharged (ESD)
  ☒ 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: ☒ TP4P0159

(T, Long) Cable mark: 987.8 ☐ _____

Reason for substitution:

☒ Bottom shackle connected
☐ Top clutch connected at link # 17 Δ(2-3): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 1** DOM id: ☒ UP4Y0050

(U, Short) Cable mark: 1004.8 ☐ _____

Reason for substitution:

☐ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(1-2): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☐ chain with clutch ☒ phi orientation ☐ whole view

**Breakout 1** Time:

☒ Cable/LC continuity test complete (Q2) Now 04:12
☒ all pass Last b/o 03:58
☐ fail: _____ Δt [min] :14

- LongDOM Depth:
  ☐ connector discharged (ESD) Paro2 1005.91
  ☒ connector O-ring in place and ☒ lubed Keller 980.99
  ☒ breakout O-ring in place and ☒ lubed Payout _____
  ☐ connected
- ShortDOM
  ☐ connector discharged (ESD)
  ☒ connector O-ring in place and ☒ lubed
  ☐ breakout O-ring in place and ☒ lubed
  ☒ connected

swapped paro

descent started 04:33

☐ Loose pigtails taped to cable

~~Paro~~ (Q1): ☒ Connected ☒ Operational ☐ Air pressure [PSI]: 10.5
Ser.#: 98107 ☐ Cable mark: 1006.5 ☐ Distance to DOM1: 1.73 (uncorrected laser)
Adapter: Ø-2 Nipple ☐ on ☒ off ~17 cm offset
98246
☐ Group photo
☒ All clear to lower cable ☺

☐ Enable payout
☒ Zero payout to Paro 2 } Added by I. Taboada

## Uphole Pressure Sensor (Setra)

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

Time: 04:40

- ☑ Stop the cable winch
- ☑ Lower Setra pressure sensor into hole
- ☑ Distance to Setra from floor: 60m
- ☑ Setra readout verified with monitoring system
- ☑ Well depth from Setra: ~~20.83m~~ 39.17
- ☑ Well depth from laser: ~~46.88~~ 46.6 corrected laser measurement

If the two well depth measurements agree:

- ☐ Switch to Setra well depth in monitoring system ~~No~~

setra is missing ambient temp/pressure

Time: ~~04:58~~ 04:58

1066m

**Now the String Drop begins**

## String Drop

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

☐ Switch cable winch to computer control

☐ Speed: 12 m/min Time: 05:00 Depth: 1000 m
☐ Speed: 20 m/min Time: 05:06 Depth: 1150 m
☐ Speed: _____ Time: _____ Depth: _____
☐ Speed: _____ Time: _____ Depth: _____
☐ Speed: _____ Time: _____ Depth: _____
☐ Speed: _____ Time: _____ Depth: _____

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

| | Depth Paro2[1] | Time | Well depth[1] | Depth c/marks[2] | Depth payout[1] | Δdepth P2-P1[1] | Δdepth P2-K[1] | Δdepth K-P1[1] |
|---|---|---|---|---|---|---|---|---|
| 995 | 1000 m | 05:01 | 46.6 | 1110 | -1005 | 1.49 | 23.56 | -17.43 |
| 1489 | 1500 m | 05:31 | | 1492 | | | | |
| | 2000 m | 06:13 | | 2000 | | | | |
| | 2100 m | 6:19 | | 2096 | | | | |
| 2207 | ~~2200~~ m | 6:26 | | 2202 | | | | |
| | 2300 m | | | | | | | |
| 2447 | ~~2400~~ m | 6:49 | | 2440 | | | | |

[1]Read off monitoring screen
[2]Cable mark offset (at DOM60) is (p. 4): 0.6

addi
← Yale gr

paro / keller readback problem

#2 53.34 #1 51.2 K 46.5

N/A
☐ Switch to manual control @ 2400 m

☐ Well depth
@ 2420: _____ 46.1 m laser @ 24
@ 2440: _____

☒ Position string at target depth of **2450** m Time: _____

☒ String secured with Yale grip and anchor chain Time: 7:20 AM

~~46.6~~ m well depth @ ~2200 m
46.0

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

☒ Distance from Paro2 to DOM60:

$d_{Paro2\text{-}DOM59}$ = 1.29 (from p. 4)

$d_{Paro2\text{-}DOM60}$ = ($d_{Paro2\text{-}DOM59}$ + 17) m = 18.29 ← insert below

☐ Convert Paro2 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): $P_0$ = 10.34 PSI → $\exp(-KP_0)$ = _____

Pressure reading (from screen): P = 3430.2 PSI → exp(-KP) = _____

Subtract exponentials → = _____

× $1.85947 \cdot 10^5$

Paro2 depth in water → = [redacted] m

Add distance to DOM60 (above) → + _____ m

Add well depth → + _____ m

Depth of bottom DOM → = _____ m

## Final depth estimates

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

| Time: | Paro2 | Keller | Paro1 | Payout | Cable marks |
|---|---|---|---|---|---|
| Reading | 3430.0 PSI | 2802.4 PSI | 2009.1 PSI | N/A m | 2446 m |
| Offset | [redacted] PSI | PSI | PSI | N/A m | m |
| Well depth | [redacted] 46.10 m | | | This space is intentionally left blank | |
| Dist. to DOM60 | [redacted] m | m | m | | |
| **DEPTH** (DOM60) | 2453.34 | 2446.5 | 2451.2 | N/A | 2446 |

Time: 7:40 A.M

**Final depth** (DOM60): 2453.34

## Deployment Closeout

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

E-Stop pressed

Time: 7.40 am Date: 14/1/06.

Shift Lead: G. L. Hill GARY HILL
name / signature

Logger: _____
name / signature

PTS Lead: Ignacio Taboada
name / signature

Deployment Manager: Jon Kim
name / signature

Safety Officer: _____
name / signature

IceCube On-ice Lead: _____
name / signature

# DEPLOYMENT LOG for IceCube STRING # 30

Deployment Start: *at* _____ *on* 13 ~~9~~ Jan 2006

Deployment End: *at* 7:40 AM *on* Jan/14/2006

Target depth (DOM60): **2450** m Final depth: 2453.34

## Deployment Crew

| Position | First Shift | Second Shift | Third Shift |
|---|---|---|---|
| Shift lead | Gary Hill | | |
| DOM install 1 (high) | Jan Bichu | | |
| DOM install 2 (low) | Patrick | | |
| DOM supply 1 / DOM install 3 | Bernhard | | |
| DOM supply 2 / floater | Kara/Hogler/Andreas | | |
| Winch operator (cable & tower) | Dan | | |
| Notary (logbook & photos) | Ethan | | |
| PTS (monitoring / sensors) | Andres/Justin | Justin/Ignacio | |
| Support (optional) | | | |
| Time shift on: | | | |
| Time shift off: | | | |

Summary/Comments:

need digital clock for TOS

## 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: 18:54

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 _____

19:11 awaiting winch expert
cable winch inop

19:33 winch ready
cable

---

- need procedure for
arranging shackles
at top of 2m cable

IceCube String Deployment Log String 30

## Deployment Startup

☐ Deployment hole cover on hand Time: 18:59

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

- ☐ Deployment monitoring system (PTS) operational ☐ DDB# 3
- ☐ Pressure sensors on hand: Paro(s) and Keller
- ☐ Laser ranger, tape measure (metric) on hand

- ☐ Loopback terminators connected (inside cable reel drum) DDB 1

- ☐ Uphole pressure system on hand: Setra sensor and cable switched during deployment

- ☐ DOMs placed in racks
- ☐ Weight stack on hand: weights (5) and 2 m cable

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): Ethan Greg Dan
- ☐ ☐ CPR trained: Ethan Greg Dan Kara
- ☐ ☐ Food runners: _____

call galley at 65521

- ☐ End of Main Cable brought into TOS and secured 19:53
- ☐ Disable Payout ← Added by I. Taboada

19:47 weight stack start

## Cable end attachments

2 holes @ 2 levels
one firn hole ~10m below water level
one lost water hole

- ☐ Measure well depth: 49.9 / 50.4 may be other hole water level
- ☐ Weights (5) attached
- ☐ Weight cable attached (weight stack complete) Time: ~~[illegible]~~ 20:09

weight stack complete

main cable tied off 19:53

IceCube String Deployment Log

String 30

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

**DOM position 60**
(T, Long)

Cable mark: 0.6

DOM id: ☐ TP4P0137
☐ _____
Reason for substitution:

☐ Bottom shackle connected to weight stack
☐ Top clutch connected at link # 19
☐ Bow OK → ☐ clutch zip tied
☐ Cable end taped to weight stack cable
Photos: ☐ chain with clutch ☐ phi orientation ☐ whole view

Payout: N/A

20:32 DOM 60 descent

**DOM position 59**
(U, Short)

Cable mark: 17.5

DOM id: ☐ UP4H0025
☐ _____
Reason for substitution:

☐ Bottom shackle connected
☐ Top clutch connected at link # 18
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ chain with clutch ☐ phi orientation ☐ whole view

Δ(59-60): 17.1
(use laser ranger)

**Breakout 30**

Time: 20:36

Depth:

Payout N/A

-13?

21:26 DOM59 descent

☐ Cable/LC continuity test complete (Q16)
☐ all pass
☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

20:53 waiting on Mult Newcomb to come from station problem w/ paro readout

20:59 Newcomb arrived

21:22 - New paro working software problem

**Thermistor:** ☐ Present ☐ Distance to DOM59: 49 cm
**Paro:** ( = Paro2 ) ☐ Connected ☐ Operational ☐ Air pressure [PSI]: _____
Ser.#: 98105 ☐ Cable mark: 18.9 ☐ Distance to DOM59: 1.29 m
Adapter: 147Ω ☐ All clear to lower cable ☺ Nipple ☐ on ☐ off

98107 98173 147Ω 21:25 DOB RS485, Interface dead

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

## DOM position 58

(T, Long) Cable mark: 34.7

DOM id: ☐ TP4P0091
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(58-59): 17.0
☐ Bow OK → ☐ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## DOM position 57

(U, Short) Cable mark: 51.6

DOM id: ☒ UP4H0030
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 19 Δ(57-58): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

no sticker

## Breakout 29

☒ Cable/LC continuity test complete (Q16)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☐ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected

☒ Loose pigtails taped to cable

Time:
Now 20:36 21:38
Last b/o 20:36
Δt [min] 1:02

Depth:
Paro2 N/A
Payout N/A

☒ All clear to lower cable ☺

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

## DOM position 56

(T, Long) Cable mark: 68.7

DOM id: ☒ TP4Y0051
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 19 Δ(56-57): 17.0
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## DOM position 55

(U, Short) Cable mark: 85.6

DOM id: ☒ UP4P0084
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(55-56): 17.1
☒ Bow OK → ☐ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## Breakout 28

Time:
Now 21:56
Last b/o 21:38
Δt [min] :18

Depth:
Paro2 N/A
Payout N/A

☒ Cable/LC continuity test complete (Q15)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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: ☒ TP5P0929
☐ _____
Reason for substitution:

(T, Long) Cable mark: 102 102.8

☐ Bottom shackle connected
☑ Top clutch connected at link # 18 Δ(54-55): 17.1
☒ Bow OK → ☐ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## DOM position 53

DOM id: ☒ UP4P0080
☐ _____
Reason for substitution:

(U, Short) Cable mark: 119.6

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(53-54): 17.1
☐ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

## Breakout 27

Time:
Now 22:08
Last b/o 21:56
Δt [min] 1:12

Depth:
Paro2 127.1
Payout N/A

☒ Cable/LC continuity test complete (Q15)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☐ connector O-ring in place and ☐ lubed
  - ☒ breakout O-ring in place and ☐ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☐ connector O-ring in place and ☐ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☐ connected

☒ Loose pigtails taped to cable

**Thermistor:** ☒ ☐ Present ☐ Distance to DOM53: _____
No

☒ All clear to lower cable ☺

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

**DOM position 52** DOM id: ☒ TP4H0036

(T, Long) Cable mark: 136.9 ☐ _____

Reason for substitution: no id

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(52-53): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

**DOM position 51** DOM id: ☒ UP4P0120

(U, Short) Cable mark: 153.9 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(51-52): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 26** Time:

☒ Cable/LC continuity test complete (Q14)

☒ all pass

☐ fail: _____

Now 22:19

Last b/o 22:08

Δt [min] :11

- LongDOM

☐ connector discharged (ESD)

☒ connector O-ring in place and ☒ lubed

☒ breakout O-ring in place and ☒ lubed

☒ connected

Depth:

Paro2 159.3

Payout N/A

- ShortDOM

☐ connector discharged (ESD)

☐ connector O-ring in place and ☐ lubed

☐ breakout O-ring in place and ☐ lubed

☐ connected

☐ Loose pigtails taped to cable

Thermistor distance to DOM 51 58cm

☐ All clear to lower cable ☺

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

## DOM position 50

DOM id: ☒ TP4H0050

(T, Long) Cable mark: 170.8

☐ _____ Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(50-51): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

☒ Curved distance around DOM: ~~[illegible]~~ 2.42 m ☐ Vertical distance: 2.40

## DOM position 49

DOM id: ☒ UP5H0160

(U, Short) Cable mark: 187.8

☐ _____ Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(49-50): 17.0

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

☒ Curved distance around DOM: 2.42 ☐ Vertical distance: 2.40

## Breakout 25

Time:

Now 22:33

Last b/o 22:19

Δt [min] :14

Depth:

Paro2 187.7

Payout N/A

☒ Cable/LC continuity test complete (Q14)

- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☐ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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**
(T, Long) Cable mark: 204.8

DOM id: ☒ TP5Y0221
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(48-49): 171
☐ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 47**
(U, Short) Cable mark: 221.8

DOM id: ☒ UP5Y0182
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(47-48): 170
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 24**

Time:
Now 22:44
Last b/o 22:33
Δt [min] 11

Depth:
Paro2 221.8
Payout _____

☒ Cable/LC continuity test complete (Q13)
  ☒ all pass
  ☐ fail: _____
- LongDOM
  ☐ connector discharged (ESD)
  ☒ connector O-ring in place and ☒ lubed
  ☒ breakout O-ring in place and ☒ lubed
  ☒ connected
- ShortDOM
  ☐ connector discharged (ESD)
  ☒ 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: ☐ TP4P0217

(T, Long) Cable mark: 238.9 ☐ _____

Reason for substitution:

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(46-47): 17.1
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ chain with clutch ☐ phi orientation ☐ whole view

**DOM position 45** DOM id: ☐ UP4P0276

(U, Short) Cable mark: 255.9 ☐ _____

Reason for substitution:

☐ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(45-46): 17.1
☐ Bow OK → ☐ clutch zip tied
Photos: ☐ chain with clutch ☐ phi orientation ☐ whole view

**Breakout 23**

Time:

Now 22:53
Last b/o 22:44
Δt [min] 109

Depth:

Paro2 255.1
Payout N/A

☐ Cable/LC continuity test complete (Q13)
☐ all pass
☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☐ connector O-ring in place and ☐ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☐ connected

☐ Loose pigtails taped to cable

**Thermistor:** ☐ Present ☐ Distance to DOM45: _____

Not present

☑ All clear to lower cable ☺

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

**DOM position 44** DOM id: ☒ TP5Y0213

(T, Long) Cable mark: 272.9 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☐ Top clutch connected at link # 18 Δ(44-45): 17.1

☐ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 43** DOM id: ☒ UP5Y0154

(U, Short) Cable mark: 289.9 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(43-44): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 22**

Time:

Now 23:04

Last b/o 22:53

Δt [min] : 11

Depth:

Paro2 289.9

Payout N/A

☒ Cable/LC continuity test complete (Q12)

- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected

☒ Loose pigtails taped to cable

Thermistor 54 cm

☒ All clear to lower cable ☺

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

## DOM position 42

(T, Long) Cable mark: _____

DOM id: ☒ TP4P0207

☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18

Δ(42-43): 17.8

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## DOM position 41

(U, Short) Cable mark: 323.9

DOM id: ☒ UP4P0218

☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18

Δ(41-42): 17.8

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☐ phi orientation ☐ whole view

## Breakout 21

Time:

Now 23:14

Last b/o 23:04

Δt [min] :10

Depth:

Paro2 323.6

Payout N/A

☒ Cable/LC continuity test complete (Q12)

- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☐ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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

(T, Long) Cable mark: 340.9

DOM id: ☒ TP4H0041
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

Δ(40-41): 12.0

## DOM position 39

(U, Short) Cable mark: 357.9

DOM id: ☒ UP4H0054
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

Δ(39-40): 17.1

## Breakout 20

☒ Cable/LC continuity test complete (Q11)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☐ connected

☒ Loose pigtails taped to cable

Time:
Now 23:32
Last b/o 23:14
Δt [min] 18

Depth:
Paro2 ~~[illegible]~~ 3566
Payout _____

23:21 problem with cable
23:27 cable motion resumed
ropes snagged on thimble - photo taken

☒ All clear to lower cable ☺

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

**DOM position 38** DOM id: ☒ TP5Y0207

(T, Long) Cable mark: 375.0 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(38-39): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☐ chain with clutch ☐ phi orientation ☐ whole view

**DOM position 37** DOM id: ☒ UP5Y0214

(U, Short) Cable mark: 392.0 ☐ 1

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(37-38): 17.0

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☐ phi orientation ☐ whole view

**Breakout 19** Time:

☒ Cable/LC continuity test complete (Q11) Now 23:43

☒ all pass Last b/o 23:32

☐ fail: _____ Δt [min] 11

- LongDOM Depth:

☐ connector discharged (ESD) Paro2 390.8

☐ connector O-ring in place and ☐ lubed Payout _____

☐ breakout O-ring in place and ☐ lubed

☐ connected

- ShortDOM 23:41 cable snagged again

☐ connector discharged (ESD)

☐ 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**
(T, Long) Cable mark: 409.0

DOM id: ☒ TP4P0191
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(36-37): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 35**
(U, Short) Cable mark: 426.0

DOM id: ☒ UP4P0176
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(35-36): 17.0
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 18**

Time:
Now 23:53
Last b/o 23:43
Δt [min] :10

Depth:
Paro2 426.4
Payout _____

☒ Cable/LC continuity test complete (Q10)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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: ☒ TP4H0040

(T, Long) Cable mark: 443.0 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☐ Top clutch connected at link # 18 Δ(34-35): 17.0

☐ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☐ phi orientation ☒ whole view

**DOM position 33** DOM id: ☒ UP4H0045

(U, Short) Cable mark: 460.0 ☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(33-34): 17.0

☐ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☐ phi orientation ☒ whole view

**Breakout 17**

Time:

Now 00:03

Last b/o 23:53

Δt [min] :10

Depth:

Paro2 459.9

Payout N/A

☒ Cable/LC continuity test complete (Q10)

- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☐ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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**
(T, Long) Cable mark: 477.0

DOM id: ☒ TP5Y0123
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(32-33): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

crazed gel ok to deploy

**DOM position 31**
(U, Short) Cable mark: 494.0

DOM id: ☒ UP5Y0206
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(31-32): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 16**

Time:
Now 00:14
Last b/o 00:03
Δt [min] :11

Depth:
Paro2 493.8
Payout _____

☒ Cable/LC continuity test complete (Q9)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected

☒ Loose pigtails taped to cable

00:19 ~~dn~~ lunch start
00:41 lunch end

☒ All clear to lower cable ☺

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

**DOM position 30** DOM id: ☒ TP4H0016
(T, Long) Cable mark: 511.0 ☐ _____
Reason for substitution:

☒ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(30-31): 17.0
☐ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 29** DOM id: ☒ UP4P0190
(U, Short) Cable mark: 528.0 ☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(29-30): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 15**

Time:
Now 00:48
Last b/o 00:14 22 min lunch
Δt [min] 34

Depth:
Paro2 529.1
Payout N/A

☒ Cable/LC continuity test complete (Q9)
☐ all pass
☐ fail: _____

- LongDOM
  ☐ connector discharged (ESD)
  ☒ connector O-ring in place and ☒ lubed
  ☒ breakout O-ring in place and ☒ lubed
  ☒ connected
- ShortDOM
  ☐ connector discharged (ESD)
  ☒ connector O-ring in place and ☐ lubed
  ☒ breakout O-ring in place and ☐ lubed
  ☒ connected

☒ Loose pigtails taped to cable

keller bucket contaminated with fuel
. replaced with dry keller

**Thermistor:** ☒ Present ☒ Distance to DOM29: 44 cm
**Keller:** ☒ Connected ☒ Operational ☒ Air pressure [PSI]: 108
Ser.#: 407559 ☒ Cable mark: _____ ☒ Distance to DOM29: ~~[illegible]~~ 1.75 tape

☒ All clear to lower cable ☺

Pass measurements have not been made correctly

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

## DOM position 28

(T, Long) Cable mark: 545.1

DOM id: ☒ TP4P0167
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(28-29): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## DOM position 27

(U, Short) Cable mark: 562.1

DOM id: ☒ UP4P0188
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(27-28): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

## Breakout 14

Time:
Now 01:13
Last b/o 00:48
Δt [min] :15

Depth:
Paro2 561.4
Keller N/A
Payout N/A

☒ Cable/LC continuity test complete (Q8)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☐ lubed
  - ☒ breakout O-ring in place and ☐ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☐ lubed
  - ☒ breakout O-ring in place and ☐ lubed
  - ☒ connected

tape dam hole

☒ Loose pigtails taped to cable

☒ All clear to lower cable ☺

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

## DOM position 26

(T, Long) Cable mark: 579.1

DOM id: ☒ TP4H0037
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(26-27): 17.1
☐ Bow OK → ☐ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## DOM position 25

(U, Short) Cable mark: 596.2

DOM id: ☒ UP4H0026
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(25-26): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## Breakout 13

Time:
Now 01:24
Last b/o 01:13
Δt [min] :11

Depth:
Paro2 597.1
Keller N/A
Payout _____

☒ Cable/LC continuity test complete (Q8)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☒ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☒ connector discharged (ESD)
  - ☒ 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

(T, Long) Cable mark: _____

DOM id: ☒ TP5Y0185
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☐ Top clutch connected at link # 18 Δ(24-25): 17.1
☐ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

## DOM position 23

(U, Short) Cable mark: 630.2

DOM id: ☒ UP5Y0178
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(23-24): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☐ chain with clutch ☒ phi orientation ☐ whole view

## Breakout 12

Time:

Now 01:36
Last b/o 01:24
Δt [min] :12

Depth:

Paro2 630.0
Keller 619.6
Payout N/A

10.4 m Δ

- ☒ Cable/LC continuity test complete (Q7)
  - ☒ all pass
  - ☐ fail: _____
- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☐ lubed
  - ☒ breakout O-ring in place and ☐ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☐ breakout O-ring in place and ☒ lubed
  - ☐ connected
- ☒ Loose pigtails taped to cable

tape in hole

☒ All clear to lower cable ☺

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

**DOM position 22** DOM id: ☐ TP4H0038

(T, Long) Cable mark: 647.3 ☐ _____

Reason for substitution:

no id

☐ Bottom shackle connected

☐ Top clutch connected at link # 18 Δ(22-23): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 21** DOM id: ☐ UP4P0182

(U, Short) Cable mark: 664.3 ☐ _____

Reason for substitution:

☐ Bottom shackle connected

☐ Top clutch connected at link # 18 Δ(21-22): 17.1

☐ Bow OK → ☐ clutch zip tied

Photos: ☒ chain with clutch ☐ phi orientation ☐ whole view

**Breakout 11**

Time:

Now 01:46

Last b/o 01:36

Δt [min] :10

Depth:

Paro2 ~~664.0~~ 664.0

Keller 641.0

Payout _____

23m Δ

☒ Cable/LC continuity test complete (Q7)

☐ all pass

☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☐ lubed
  - ☒ breakout O-ring in place and ☐ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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

(T, Long) Cable mark: 681.3

DOM id: ☒ TP4P0205
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(20-21): 17.1
☐ Bow OK → ☒ clutch zip tied
Photos: ☐ chain with clutch ☒ phi orientation ☒ whole view
☒ Curved distance around DOM: 2.39 ☐ Vertical distance: 2.36

## DOM position 19

(U, Short) Cable mark: 698.3

DOM id: ☒ UP4P0178
☒ UP5P0578
Reason for substitution: broken connector

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(19-20): 17.1
☒ Bow OK → ☐ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view
☐ Curved distance around DOM: 2.40 ☐ Vertical distance: 2.32

## Breakout 10

☒ Cable/LC continuity test complete (Q6)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected

☒ Loose pigtails taped to cable

Time:
Now 02:00
Last b/o 01:46
Δt [min] :14

Depth:
Paro2 699.9
Keller 664.3
Payout _____

356Δ

connector broken
DOM 19 swapped out
photo taken

☒ All clear to lower cable ☺

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

## DOM position 18

(T, Long) Cable mark: 715.3

DOM id: ☐ TP4H0023
☐ _____
Reason for substitution:

wo 10

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(18-19): 17.1
☐ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☐ phi orientation ☒ whole view

## DOM position 17

(U, Short) Cable mark: 732.4

DOM id: ☒ UP5Y0224
☐ _____
Reason for substitution:

☐ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(17-18): 17.1
☒ Bow OK → ☐ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

## Breakout 9

☒ Cable/LC continuity test complete (Q6)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☐ breakout O-ring in place and ☐ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected

☒ Loose pigtails taped to cable

Time:

Now ~~[illegible]~~ 02:19
Last b/o 02:00
Δt [min] ~~[illegible]~~ :19

Depth:

Paro2 732.6
Keller 687.6
Payout N/A

45.0 m Δ

☒ All clear to lower cable ☺

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

## DOM position 16

(T, Long) Cable mark: 749.4

DOM id: ☒ TP5Y0169

☐ _____

Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(16-17): 17.1
☐ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## DOM position 15

(U, Short) Cable mark: ~~1~~ 766.4

DOM id: ☒ UP5Y0100

☐ _____

Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(15-16): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## Breakout 8

Time:

Now 02:33
Last b/o 02:19
Δt [min] :14

Depth:

Paro2 766.39
Keller 740.12
Payout _____

☒ Cable/LC continuity test complete (Q5)
  ☒ all pass
  ☐ fail: _____

- LongDOM
  ☐ connector discharged (ESD)
  ☒ connector O-ring in place and ☒ lubed
  ☒ breakout O-ring in place and ☒ lubed
  ☒ connected
- ShortDOM
  ☐ connector discharged (ESD)
  ☒ connector O-ring in place and ☒ lubed
  ☒ breakout O-ring in place and ☒ lubed
  ☐ connected

☒ Loose pigtails taped to cable

02:28 - 02:31
Unusual noises from reel + tower when snagged breakout came through crescent

☒ All clear to lower cable ☺

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

## DOM position 14

(T, Long) Cable mark: 783.5

DOM id: ☒ TP4P0163

☐ _____

Reason for substitution:

☒ Bottom shackle connected

☒ Top clutch connected at link # 18 Δ(14-15): 17.1

☒ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

## DOM position 13

(U, Short) Cable mark: 800.5

DOM id: ☒ UP5P0654

☐ _____

Reason for substitution:

☒ Bottom shackle connected

☐ Top clutch connected at link # 18 Δ(13-14): 17.1

☐ Bow OK → ☒ clutch zip tied

Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## Breakout 7

☒ Cable/LC continuity test complete (Q5)

- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected

☒ Loose pigtails taped to cable

Time:

Now 02:50

Last b/o 02:33

Δt [min] :17

Depth:

Paro2 801.24

Keller 776.50

Payout _____

☒ All clear to lower cable ☺

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

## DOM position 12

(T, Long) Cable mark: 817.5

DOM id: ☒ TP4P0155
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(12-13): 17.0
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## DOM position 11

(U, Short) Cable mark: _____

DOM id: ☒ UP4P0330
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 18 Δ(11-12): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## Breakout 6

☒ Cable/LC continuity test complete (Q4)
- ☐ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☐ connected

☒ Loose pigtails taped to cable

Time:
Now 03:03
Last b/o 02:50
Δt [min] :13

Depth:
Paro2 834.96
Keller 808.32
Payout _____

☒ All clear to lower cable ☺

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

## DOM position 10

(T, Long) Cable mark: 851.5

DOM id: ☒ TP4H0020
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(10-11): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## DOM position 9

(U, Short) Cable mark: 868.5

DOM id: ☒ UP5Y0190
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(9-10): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

## Breakout 5

☒ Cable/LC continuity test complete (Q4)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☒ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☒ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected

☒ Loose pigtails taped to cable

Time:
Now 03:13
Last b/o 03:03
Δt [min] :10

Depth:
Paro2 869.24
Keller 846.50
Payout _____

☒ All clear to lower cable ☺

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

## DOM position 8

(T, Long) Cable mark: 885.5

DOM id: ☐ TP5Y0143
☒ TP5H0197
Reason for substitution: Dom had been dropped in past. decided to use a spare

☒ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(8-9): 17.1
☐ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

## DOM position 7

(U, Short) Cable mark: 892.5

DOM id: ☐ UP4P0342
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(7-8): 17.0
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☐ whole view

## Breakout 4

☒ Cable/LC continuity test complete (Q3)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☐ connected

☒ Loose pigtails taped to cable

Time:
Now 03:32
Last b/o 03:13
Δt [min] :19

Depth:
Paro2 903.8
Keller 880.13
Payout N/A

☒ All clear to lower cable ☺

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

## DOM position 6

(T, Long) Cable mark: 919.6

DOM id: ☒ TP5Y0081
☐ _____
Reason for substitution:

gc photo

☒ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(6-7): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## DOM position 5

(U, Short) Cable mark: 936.6

DOM id: ☒ UP4P0340
☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(5-6): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

## Breakout 3

Time:
Now 03:46
Last b/o 03:32
Δt [min] 14

Depth:
Paro2 938.52
Keller 909.22
Payout _____

☒ Cable/LC continuity test complete (Q3)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☒ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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: ☒ TP4H0046
(T, Long) Cable mark: 953.6 ☐ _____
Reason for substitution:

☒ Bottom shackle connected
☐ Top clutch connected at link # ~~10~~ 17 Δ(4-5): 17.1
☒ Bow OK → ☐ clutch zip tied
Photos: ☐ chain with clutch ☐ phi orientation ☒ whole view

**DOM position 3** DOM id: ☒ UP4H0058
(U, Short) Cable mark: ~~97~~ 979.6 ☐ _____
Reason for substitution:

☒ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(3-4): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**Breakout 2**

Time:
Now 03:58
Last b/o 03:46
Δt [min] :12

Depth:
Paro2 972.04
Keller 951.01
Payout _____

☒ Cable/LC continuity test complete (Q2)
- ☒ all pass
- ☐ fail: _____

- LongDOM
  - ☐ connector discharged (ESD)
  - ☒ connector O-ring in place and ☒ lubed
  - ☒ breakout O-ring in place and ☒ lubed
  - ☐ connected
- ShortDOM
  - ☐ connector discharged (ESD)
  - ☒ 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: ☒ TP4P0159

(T, Long) Cable mark: 987.8 ☐ _____

Reason for substitution:

☒ Bottom shackle connected
☐ Top clutch connected at link # 17 Δ(2-3): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☒ chain with clutch ☒ phi orientation ☒ whole view

**DOM position 1** DOM id: ☒ UP4Y0050

(U, Short) Cable mark: 1004.8 ☐ _____

Reason for substitution:

☐ Bottom shackle connected
☒ Top clutch connected at link # 17 Δ(1-2): 17.1
☒ Bow OK → ☒ clutch zip tied
Photos: ☐ chain with clutch ☒ phi orientation ☐ whole view

**Breakout 1**

Time:
Now 04:12
Last b/o 03:58
Δt [min] :14

☒ Cable/LC continuity test complete (Q2)
☒ all pass
☐ fail: _____

- LongDOM
☐ connector discharged (ESD)
☐ connector O-ring in place and ☒ lubed
☐ breakout O-ring in place and ☒ lubed
☐ connected

- ShortDOM
☐ connector discharged (ESD)
☒ connector O-ring in place and ☒ lubed
☐ breakout O-ring in place and ☒ lubed
☒ connected

Depth:
Paro2 1005.91
Keller 980.99
Payout _____

snapped paro

descent started 04:33

☐ Loose pigtails taped to cable

~~Paro~~ (Q1): ☒ Connected ☒ Operational ☐ Air pressure [PSI]: 10.5
Ser.#: 98107 ☐ Cable mark: 1006.5 ☐ Distance to DOM1: 1.73 (uncorrected laser)
Adapter: Ø Ω Nipple ☐ on ☒ off
98246

~14 cm offset

☐ Group photo

☒ All clear to lower cable ☺

☐ Enable payout
☐ Zero payout to Paro 2 } Added by

## Uphole Pressure Sensor (Setra)

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

Time: 04:40

- ☑ Stop the cable winch
- ☑ Lower Setra pressure sensor into hole
- ☑ Distance to Setra from floor: 60m
- ☑ Setra readout verified with monitoring system
- ☑ Well depth from Setra: ~~20.83m~~ 39.17
- ☑ Well depth from laser: ~~46.88~~ 46.6 corrected laser measurement

If the two well depth measurements agree:

- ☐ Switch to Setra well depth in monitoring system No

setra is missing ambient temp/pressure

Time: ~~04:58~~ 04:58

1066m

**Now the String Drop begins**

## String Drop

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

☐ Switch cable winch to computer control

☐ Speed: 12 m/min Time: 05:00 Depth: 1000 m
☐ Speed: 20 m/min Time: 05:06 Depth: 1150 m
☐ Speed: _____ Time: _____ Depth: _____
☐ Speed: _____ Time: _____ Depth: _____
☐ Speed: _____ Time: _____ Depth: _____
☐ Speed: _____ Time: _____ Depth: _____

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

| | Depth Paro2[1] | Time | Well depth[1] | Depth c/marks[2] | Depth payout[1] | Δdepth P2-P1[1] | Δdepth P2-K[1] | Δdepth K-P1[1] |
|---|---|---|---|---|---|---|---|---|
| h 5 | 1000 m | 05:01 | 46.6 | 1110 | -1005 | 1.49 | 23.56 | -17.43 |
| 1489 | 1500 m | 05:31 | | 1492 | | | | |
| | 2000 m | 06:13 | | 2000 | | | | |
| | 2100 m | 6:19 | | @ 2096 | | | | |
| 2207 | ~~2200~~ m | 6:26 | | 2202 | | | | |
| | 2300 m | | | | | | | |
| 2447 | ~~2400~~ m | 6:49 | | 2440 | | | | |

adding ← Yalegrip

[1]Read off monitoring screen
[2]Cable mark offset (at DOM60) is (p. 4): 0.6

paro / keller readback problem

N/A
☐ Switch to manual control @ 2400 m

#2 53.34 #1 51.2 h 46.5

☐ Well depth
@ 2420: _____ 46.1 m laser @ 24
@ 2440: _____

☒ Position string at target depth of **2450** m Time: _____

☒ String secured with Yale grip and anchor chain Time: 7:20 AM

~~46.6~~ m well depth @ ~2200 m
46.0

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

☒ Distance from Paro2 to DOM60:

$d_{Paro2\text{-}DOM59}$ = 1.29 (from p. 4)

$d_{Paro2\text{-}DOM60}$ = ($d_{Paro2\text{-}DOM59}$ + 17) m = 18.29 ← insert below

☐ Convert Paro2 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): $P_0$ = 10.34 PSI → exp($-KP_0$) = _____

Pressure reading (from screen): P = 3430.2 PSI → exp(-KP) = _____

Subtract exponentials → = _____

× $1.85947 \cdot 10^5$

Paro2 depth in water → = [redacted] m

Add distance to DOM60 (above) → + _____ m

Add well depth → + _____ m

Depth of bottom DOM → = _____ m

## Final depth estimates

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

| Time: | Paro2 | Keller | Paro1 | Payout | Cable marks |
|---|---|---|---|---|---|
| Reading | 3430.0 PSI | 2802.4 PSI | 2009.1 PSI | N/A m | 2446 m |
| Offset | [redacted] PSI | PSI | PSI | N/A m | m |
| Well depth | [redacted] 46.10 m | | | This space is intentionally left blank | |
| Dist. to DOM60 | [redacted] m | m | m | | |
| **DEPTH** (DOM60) | 2453.34 | 2446.5 | 2451.2 | N/A | 2446 |

Time: 7:40 A.M

**Final depth** (DOM60): 2453.34

## 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

E-Stop pressed

Time: 7.40 am Date: 14/1/06.

Shift Lead: G. L. Hill GARY HILL
name / signature

Logger: _____
name / signature

PTS Lead: Ignacio Taboada
name / signature

Deployment Manager: _____
name / signature

Safety Officer: _____
name / signature

IceCube On-ice Lead: _____
name / signature