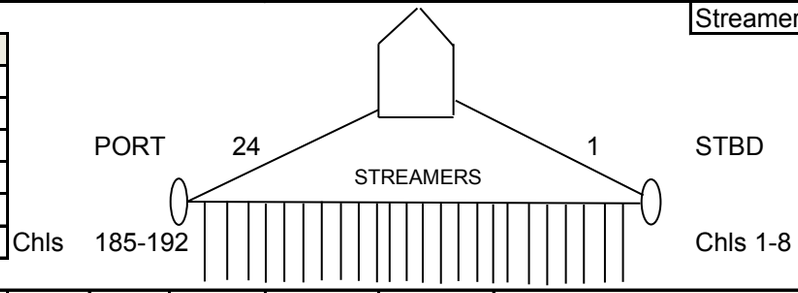
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 2-Jun-15 | Line Number: 2860 | Water Depth(m): 52 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1509m/s |
| Area: New Jersey | Sequence No 1 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 2 Wind (kts): 26 NE** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.7 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| 16:22 | 20:22 | 863 | 1 | | | | | 304.4 | 0 | FSP;No serial string from Nav |
| | | | | | | | | | | |
| 16:23 | 20:23 | | 5 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:23 | 20:23 | | 7 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:23 | 20:23 | | 9 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:23 | 20:23 | | 11 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:23 | 20:23 | | 13 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |

| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Date: 2-Jun-15 | | | | Line Number: 2860 | | | | Water Depth(m): 52 | |
| | Client: Columbia University | | | | Line Azimuth: 304.4° | | | | Mean Velocity: 1509m/s | |
| | Area: New Jersey | | | | Sequence No 1 | | | | Vessel Speed: 4.5 kt | |
| | Vessel: R/V Marcus Langseth | | | | Observers: Ard/Koprowski | | | | **Sea(m): 2 Wind (kts): 26 NE** | |
| 16:24 | 20:24 | | 15 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:24 | 20:24 | | 17 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:24 | 20:24 | | 19 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:24 | 20:24 | | 21 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:24 | 20:24 | | 23 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:24 | 20:24 | | 25 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:25 | 20:25 | | 27 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:25 | 20:25 | | 28 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:25 | 20:25 | | 30 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:25 | 20:25 | | 32 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:25 | 20:25 | | 34 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:25 | 20:25 | | 35 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:25 | 20:25 | | 38 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:26 | 20:26 | | 40 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:26 | 20:26 | | 42 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:26 | 20:26 | | 44 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |

| NCS SubSea Navigating the Future | | | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date: 2-Jun-15 | | | | Line Number: 2860 | | | Water Depth(m): 52 |
| | | | Client: Columbia University | | | | Line Azimuth: 304.4° | | | Mean Velocity: 1509m/s |
| | | | Area: New Jersey | | | | Sequence No 1 | | | Vessel Speed: 4.5 kt |
| | | | Vessel: R/V Marcus Langseth | | | | Observers: Ard/Koprowski | | | **Sea(m): 2 Wind (kts): 26 NE** |
| 16:26 | 20:26 | | 46 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:26 | 20:26 | | 48 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:27 | 20:27 | | 50 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:27 | 20:27 | | 52 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:27 | 20:27 | | 54 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:27 | 20:27 | | 56 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| 16:27 | 20:27 | | 58 | | | | | 304.4 | 0 | Missed file d/t sample interval & vessel speed; Multiple shot data compiled w/in one file; No serial string from Nav |
| | | | | | | | | | | |
| 16:31 | 20:31 | | 88 | | | | | | | Restarted GeoEel Controller to reset sample interval 0.5ms instead of 0.25ms; Incomplete file |
| | | | | | | | | | | |
| 16:36 | 20:36 | | a41 | | | | | 304.4 | 0 | GeoEel Controller restarted system at file 41. The system created alpha-numeric files names for all files greater than 41 which had been created before the restart of system. |
| | | | | | | | | | | |
| 17:43 | 21:43 | | 774 | | | | | 304.4 | | Restarted GeoEel Controller to reset pre-amp gain. |
| | | | | | | | | | | |
| 17:48 | 21:48 | | a766 | | | | | 304.4 | | GeoEel Controller restarted system at file 766. The system created alpha-numeric files names for all files greater than 766 which had been created before the restart of system. SOL/FGSP; No serial string from Nav throughout line |
| | | | | | | | | | | |
| 22:48 | 02:48 | 5164 | 4118 | 2.7 | 2.7 | 2.9 | 27.66 | 304.4 | 0 | EOL/LGSP; No serial string from Nav throughout line |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 2-Jun-15 | Line Number: 2860 | Water Depth(m): 52 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1509m/s |
| Area: New Jersey | Sequence No 1 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 2 Wind (kts): 26 NE** |

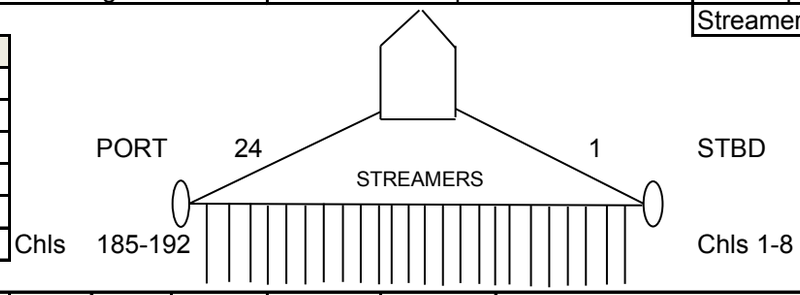
| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | |
|---|---|---|---|
| | Date: 2-Jun-15 | Line Number: 2860 | Water Depth(m): 52 |
| | Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1509m/s |
| | Area: New Jersey | Sequence No 1 | Vessel Speed: 4.5 kt |
| | Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 2 Wind (kts): 26 NE** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 3-Jun-15 | Line Number: 1924 | Water Depth(m): 26.57 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 2 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): Wind (kts):** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| 23:55 | 03:55 | 5088 | 1 | 2.6 | 2.7 | 2.5 | 26.57 | 124.4 | 0 | SOL/FGSP |
| 23:58 | 03:58 | 5047 | 41 | 2.6 | 2.7 | 2.5 | 27.74 | | | |
| 01:17 | 5:17 | 4177 | 918 | 3.7 | 4.4 | 3.8 | 31.97 | 112.4 | 0 | |
| 02:08 | 06:08 | 3606 | 1483 | 3.6 | 4.4 | 3.9 | 29.32 | 113.7 | 0 | |
| 03:31 | 07:31 | 2689 | 2401 | 3.3 | 3.4 | 3.6 | 27.14 | 114.8 | 0 | |
| 05:09 | 09:09 | 1605 | 3485 | 3.6 | 4.6 | 3.4 | 30.81 | 109.2 | 0 | |
| 06:16 | 10:16 | 864 | 4226 | | | | 57.22 | 110.7 | 0 | EOL/LGSP |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 3-Jun-15 | Line Number: 1924 | Water Depth(m): 26.57 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 2 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): Wind (kts):** |

| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
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| Additional Notes |
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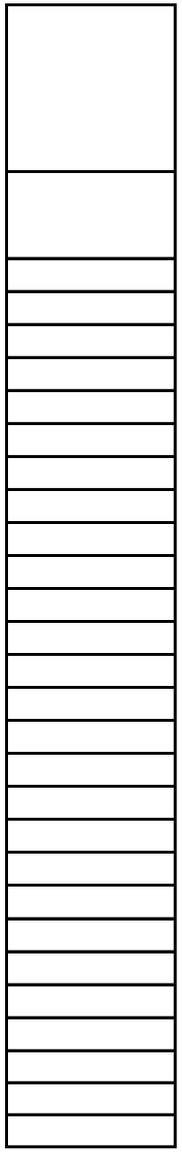
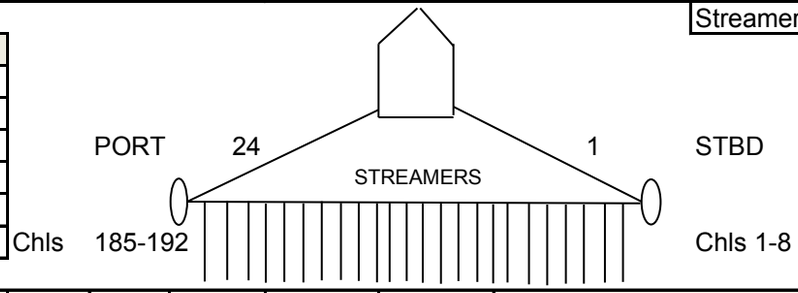


# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 3-Jun-15 | Line Number: | 2836 | Water Depth(m) | 52.37 |
| | Client: Columbia University | Line Azimuth: | 304.4° | Mean Velocity: | 1506m/s |
| | Area: New Jersey | Sequence No | 3 | Vessel Speed: | 4.3 kt |
| | Vessel: R/V Marcus Langseth | Observers: | Ard/Koprowski | **Sea(m): Wind (kts):** | **20** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| 15:34 | 19:34 | 876 | 1 | 3.4 | 3.5 | 2.8 | 52.37 | 306.4 | 1 | SOL/FGSP |
| | | | | | | | | | | |
| 16:24 | 20:24 | 1450 | 575 | 3.3 | 3.7 | 2.8 | 35.01 | 304.3 | 0 | |
| 17:12 | 21:12 | 2015 | 1140 | 3.2 | 3.9 | 2.6 | 32.61 | 304.3 | 0 | |
| 17:55 | 21:55 | 2515 | 1640 | 3.3 | 4.0 | 3.1 | 29.47 | 304.6 | 0 | |
| 18:38 | 22:38 | 3015 | 2140 | 3.3 | 2.8 | 2.9 | 28.12 | 303.2 | 0 | |
| 19:22 | 23:22 | 3515 | 2640 | 3.0 | 3.6 | 2.5 | 28.19 | 307.6 | 0 | |
| 20:07 | 00:07 | 4015 | 3140 | 2.9 | 3.6 | 2.1 | 27.55 | 304.5 | 0 | |
| 20:52 | 00:52 | 4515 | 3640 | 3.2 | 3.7 | 3.0 | 29.27 | 303.2 | 0 | |
| 21:37 | 01:37 | 5015 | 4140 | 3.1 | 3.0 | 2.3 | 29.12 | 305.0 | 0 | |
| | | | | | | | | | | |
| 21:48 | 01:48 | 5137 | 4262 | 3.0 | 3.2 | 2.4 | 28.25 | 305.4 | 0 | EOL/LGSP |
| | | | | | | | | | | |

| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | |
|---|---|---|---|
| | Date: 3-Jun-15 | Line Number: 2836 | Water Depth(m) 52.37 |
| | Client: Columbia University | Line Azimuth: 304.4º | Mean Velocity: 1506m/s |
| | Area: New Jersey | Sequence No 3 | Vessel Speed: 4.3 kt |
| | Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): Wind (kts): 20** |

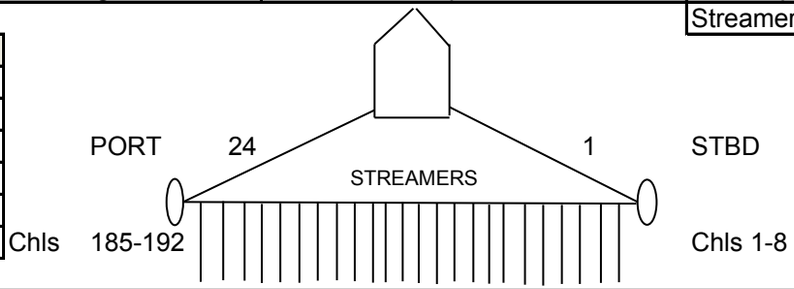
| | |
|---|---|
| Average RMS Noise: 26.28 µBar | |
| Peak RMS Noise: 70.84 µBar | |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 4-Jun-15 | Line Number: 1900 | Water Depth(m): 27.79 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1509m/s |
| Area: New Jersey | Sequence No 4 | Vessel Speed: 4.4 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 1 Wind (kts): 17** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| 22:58 | 02:58 | 5111 | 1 | 3 | 2.8 | 2.3 | 28.27 | 127.9 | 0 | SOL/FSP |
| | | | | | | | | | | |
| 23:01 | 03:01 | 5085 | 27 | 3 | 2.8 | 2.3 | 29 | 127.9 | 0 | Navigation stopped line d/t logging issue |
| 23:01 | 03:01 | 5079 | 28 | 3 | 2.8 | 2.3 | 29.3 | 127.9 | 0 | **FGSP.** Navigation continued closures to acquisition system. |
| 23:30 | 03:30 | 4749 | 358 | 3 | 3.4 | 2.4 | | 125.28 | 0 | No depth data |
| 23:38 | 03:38 | 4662 | 445 | 2.9 | 3.1 | 2.5 | 27.27 | 125.4 | | Receiving depth data |
| 01:37 | 04:37 | 3989 | 1118 | | | | 29.7 | | | EOL/LGSP |
| | | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

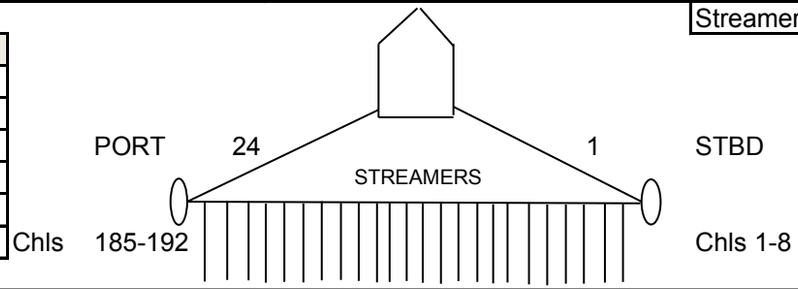
| | | |
|---|---|---|
| Date: 4-Jun-15 | Line Number: 1900 | Water Depth(m): 27.79 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1509m/s |
| Area: New Jersey | Sequence No 4 | Vessel Speed: 4.4 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 1 Wind (kts): 17** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 4-Jun-15 | Line Number: 2812 | Water Depth(m): 56 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 5 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Curtis/Hackett (Intern) | **Sea(m): 2 Wind (kts): 25 NE** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| 13:40 | 17:40 | 851 | 1 | 2.6 | 3.5 | 2.3 | 56 | 304.2 | 0 | SOL/FGSP |
| | | | | | | | | | | |
| 15:14 | 19:14 | 1851 | 1001 | 2.7 | 3.6 | 2.3 | 34.52 | 305.89 | 0 | |
| 15:58 | 19:58 | 2351 | 1501 | 2.7 | 3.2 | 2.4 | 27.30 | 302.82 | 0 | |
| 16:42 | 20:42 | 2851 | 2001 | 2.9 | 3.0 | 2.6 | 27.02 | 301.35 | 0 | |
| 17:24 | 21:24 | 3351 | 2501 | 3.0 | 3.6 | 2.4 | 29.8 | 302.4 | 0 | |
| 18:06 | 22:06 | 3851 | 3001 | 2.9 | 3.1 | 3.0 | 32.10 | 310.26 | 0 | |
| 18:49 | 22:49 | 4351 | 3501 | 3.0 | 3.3 | 2.2 | 30.27 | 302.1 | 0 | |
| 19:33 | 23:33 | 4851 | 4001 | 2.7 | 3.2 | 3.3 | 28.24 | 303.09 | 0 | |
| | | | | | | | | | | |
| 19:58 | 23:58 | 5137 | 4287 | 3.3 | 3.5 | 2.7 | 27.98 | 307.70 | By | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 23.99 µBar |

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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 4-Jun-15 | Line Number: 2812 | Water Depth(m): 56 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 5 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Curtis/Hackett (Intern) | **Sea(m): 2 Wind (kts): 25 NE** |

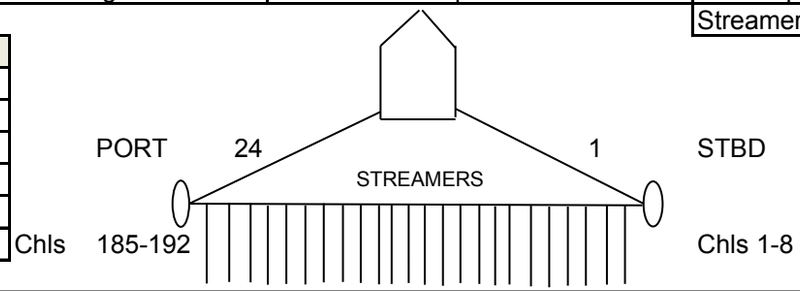
Peak RMS Noise: 78.33 µBar

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 5-Jun-15 | Line Number: 1900R | Water Depth(m): 26 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 6 | Vessel Speed: 4.4 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 1.5 Wind (kts): ENE 24.4** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| 21:07 | 01:07 | 5110 | 1 | 2.8 | 3.1 | 2.5 | 26.04 | 123.66 | 0 | SOL/FSP; Active button was double clicked at start causing us to miss SP5109-SP5098 |
| | | | | | | | | | | |
| 21:08 | 01:08 | 5097 | 2 | 2.8 | 3.1 | 2.5 | 26.04 | 123.66 | 0 | SOL/FGSP |
| | | | | | | | | | | |
| 21:22 | 01:22 | 4949 | 150 | 2.5 | 3.3 | 2.5 | 28.75 | 127.7 | 0 | |
| 22:09 | 02:09 | 4449 | 650 | 2.5 | 2.9 | 2.1 | 30.12 | 126.9 | 0 | |
| | | | | | | | | | | |
| 22:40 | 02:40 | 4100 | 999 | 2.7 | 3.8 | 2.5 | 34.75 | 122.02 | 0 | Low gun pressure d/t STBD compressor failure |
| 22:43 | 02:43 | 4068 | 1031 | 2.7 | 3.8 | 2.5 | 34.75 | 122.02 | 0 | Guns back at pressure |
| | | | | | | | | | | |
| 23:21 | 03:21 | 3649 | 1450 | 2.4 | 3.3 | 2.8 | 29.19 | 122.08 | 0 | |
| 23:38 | 03:38 | 3449 | 1650 | 2.8 | 3.4 | 2.8 | 31.83 | 124.90 | 0 | |
| 23:56 | 03:56 | 3249 | 1850 | 3.0 | 3.3 | 2.3 | 27.89 | 122.19 | 0 | |

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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

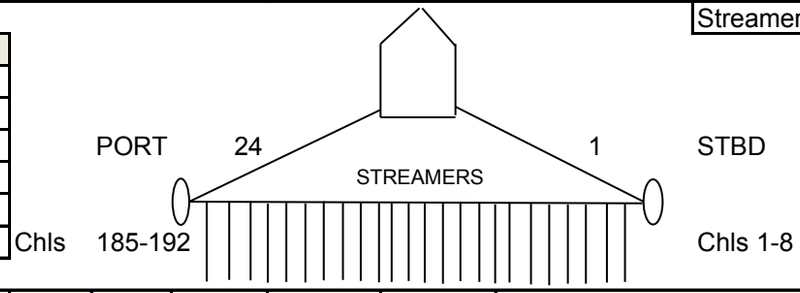
| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date: 5-Jun-15 | | | Line Number: 1900R | | | | | | | Water Depth(m): 26 |
| Client: Columbia University | | | Line Azimuth: 124.4° | | | | | | | Mean Velocity: 1500m/s |
| Area: New Jersey | | | Sequence No 6 | | | | | | | Vessel Speed: 4.4 kt |
| Vessel: R/V Marcus Langseth | | | Observers: Ard/Koprowski | | | | | | | **Sea(m): 1.5 Wind (kts): ENE 24.4** |
| 12:16 | 04:16 | 2071 | 3028 | | | | | | | Vessel drift off of line - Pilot error |
| 12:20 | 04:20 | 2192 | 2907 | | | | | | | Vessel back online |
| 02:11 | 06:11 | 1731 | 3368 | 2.8 | 3.7 | 1.9 | 34.00 | 113.01 | 0 | |
| 03:15 | 07:15 | 1020 | 4079 | 2.5 | 3.1 | 1.8 | 52.53 | 117.11 | 0 | |
| 03:29 | 07:29 | 864 | 4235 | 2.8 | 3.3 | 2.4 | 53.2 | 108.2 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 30.4µBar |
| | | | | | | | | | | Peak RMS Noise: µBar |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 5-Jun-15 | Line Number: 2788 | Water Depth(m): 249.7 |
| Client: Columbia University | Line Azimuth: 312 | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 7 | Vessel Speed: 4.6 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| 04:38 | 08:38 | 872 | 1 | 3.9 | 4.6 | 4.3 | 49.7 | 312 | 0 | SOL/FGSP |
| 05:50 | 09:50 | 1701 | 830 | 4.1 | 5.1 | 4.5 | 33.7 | 311 | 0 | |
| 07:02 | 11:02 | 2538 | 1667 | 3.8 | 5.2 | 4.7 | 29.3 | 312 | 0 | |
| 10:53 | 14:53 | 5137 | 4266 | 4.4 | 5.1 | 4.8 | 27.7 | 310 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 27.26µBar |
| | | | | | | | | | | Peak RMS Noise: 74.40µBar |
| | | | | | | | | | | |
| | | | | | | | | | | |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

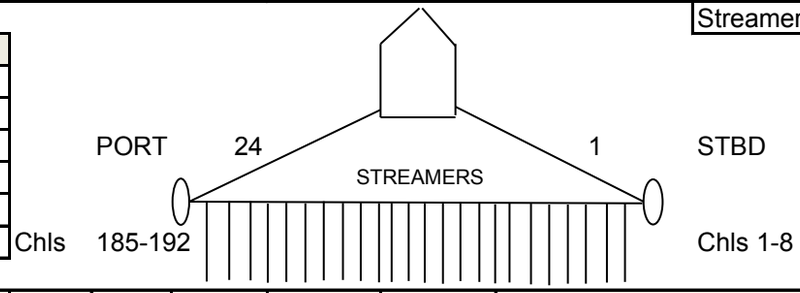
| | | |
|---|---|---|
| Date: 5-Jun-15 | Line Number: 2788 | Water Depth(m): 249.7 |
| Client: Columbia University | Line Azimuth: 312 | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 7 | Vessel Speed: 4.6 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 5-Jun-15 | Line Number: 1876 | Water Depth(m): 23.61 |
| Client: Columbia University | Line Azimuth: 124.4 | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 8 | Vessel Speed: 4.4 |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): Wind (kts):** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | |
|---|---|
| Reference Point: | Stern |
| CRP to Stern: | -30.67 m |
| Stern to Stbd Paravane: | 325 m |
| Stern to Port Paravane: | 315 m |
| Spread (strmr 1 to 24): | 287.5 m |
| Stern to Source: | 275 m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| 12:03 | 16:03 | 5109 | 1 | 2.7 | 3.4 | 2.2 | 24.7 | 124.25 | 0 | SOL/FGSP |
| | | | | | | | | | | |
| 12:12 | 16:12 | 5009 | 101 | 2.5 | 3.6 | 2.2 | 28.59 | 124.8 | 0 | |
| 12:56 | 16:56 | 4509 | 601 | 2.9 | 3.6 | 2.3 | 27 | 123.6 | 0 | |
| 13:40 | 17:40 | 4009 | 1101 | 2.9 | 3.5 | 2.2 | 30.86 | 127.06 | 0 | |
| 14:24 | 18:24 | 3509 | 1601 | 2.8 | 3.1 | 2.5 | 31.47 | 124.44 | 0 | |
| 15:09 | 19:09 | 3009 | 2101 | 2.8 | 3.1 | 2.5 | 31.35 | 127.63 | 0 | |
| 15:45 | 19:45 | 2509 | 2601 | 2.8 | 3.1 | 2.5 | 31.38 | 126.01 | 0 | |
| 16:40 | 20:40 | 2009 | 3101 | 2.8 | 3.4 | 2.3 | 44.62 | 127.00 | 0 | |
| 17:27 | 21:27 | 1509 | 3601 | 2.5 | 3.1 | 2.0 | 50.45 | 123.75 | 0 | |
| 18:14 | 22:14 | 1009 | 4101 | 3.0 | 3.2 | 3.1 | 51.23 | 126.21 | 0 | |
| | | | | | | | | | | |
| 18:28 | 22:28 | 865 | 4245 | 2.8 | 3.3 | 2.3 | 54.12 | 128.06 | 0 | EOL/LGSP |

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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 5-Jun-15 | Line Number: 1876 | Water Depth(m): 23.61 |
| Client: Columbia University | Line Azimuth: 124.4 | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 8 | Vessel Speed: 4.4 |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): Wind (kts):** |

Average RMS Noise: 34.12 µBar

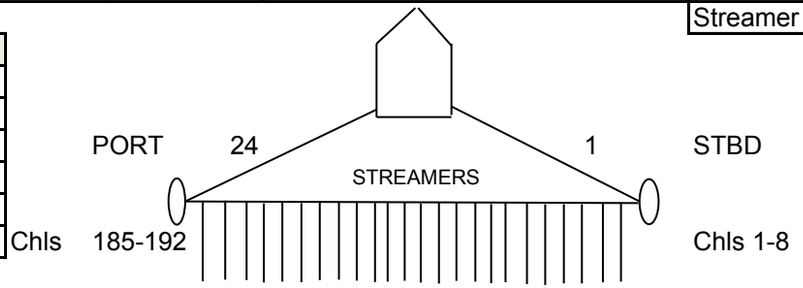
Peak RMS Noise: 86.83 µBar

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 5-Jun-15 | Line Number: 2764 | Water Depth(m) 53.4 |
| | Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1505m/s |
| | Area: New Jersey | Sequence No 9 | Vessel Speed: 4.6 kt |
| | Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): Wind (kts): 15 NNE** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval:12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| 19:36 | 23:36 | 884 | 1 | 2.9 | 3.9 | 2.5 | 53.58 | 303.58 | 1 | SOL/FGSP |
| | | | | | | | | | | |
| 19:44 | 23:44 | 984 | 101 | 3.4 | 3.8 | 3.1 | 34.07 | 303.29 | 1 | |
| 20:28 | 00:28 | 1484 | 601 | 3.0 | 3.6 | 2.5 | 36.90 | 302.84 | 1 | |
| 21:03 | 01:03 | 1984 | 1101 | 3.2 | 3.6 | 2.4 | 31.70 | 301.15 | 1 | |
| 21:55 | 01:55 | 2484 | 1601 | 2.9 | 3.5 | 2.6 | 30.28 | 306.35 | 1 | |
| | | | | | | | | | | |
| 22:34 | 02:34 | 2925 | 2042 | 2.6 | 3.4 | 2.8 | 28.85 | 303.52 | 1 | Gun 4 (180cu) having electrical leakage issues. Gun 4 still active. |
| | | | | | | | | | | |
| 23:11 | 03:11 | 3311 | 2428 | 3.3 | 3.7 | 2.6 | 31.23 | 305.54 | 1 | EOL/LGSP; EOL d/t gun leakage at gun 4 |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 25.96 µBar |

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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 5-Jun-15 | Line Number: 2764 | Water Depth(m) 53.4 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1505m/s |
| Area: New Jersey | Sequence No 9 | Vessel Speed: 4.6 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): Wind (kts): 15 NNE** |

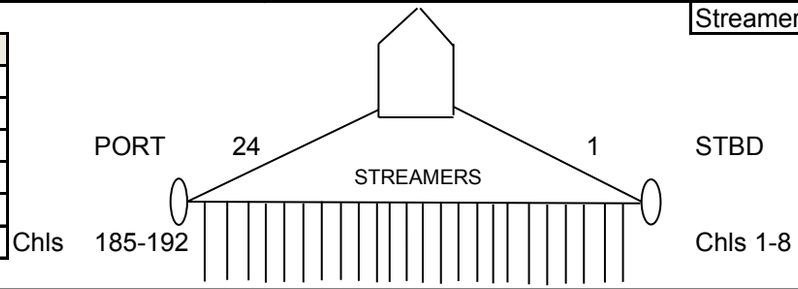
Peak RMS Noise: 68.34 µBar

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | |
|---|---|---|---|
| Date: 5-Jun-15 | Line Number: 1852 | Water Depth(m) 26.2 |
| Client: Columbia University | Line Azimuth: 124 | Mean Velocity: 1505m/s |
| Area: New Jersey | Sequence No 10 | Vessel Speed: 4.5 |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 1-2 Wind (kts): 3** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| 10:20 | 14:20 | 5123 | 1 | 3.7 | 4.3 | 4.5 | 22.7 | 124 | 0 | SOL/FGSP |
| | | | | | | | | | | |
| 12:14 | 16:14 | 3808 | 1316 | | | | | | | Altering course d/t vessel traffic |
| | | | | | | | | | | |
| 12:27 | 16:27 | 3655 | 1469 | 2.9 | 3.6 | 2.6 | 34.38 | 139.41 | 0 | Guns did not fire from SP3655-SP3638. GeoEel Controller logs not showing any errors explaining the reason for the issue. Possibly a gun system issue. |
| 12:27 | 16:27 | 3637 | 1487 | 2.9 | 3.5 | 2.7 | 31.02 | 138.52 | 0 | Guns back to normal. Cause of no fire unknown. |
| | | | | | | | | | | |
| 13:27 | 17:14 | 3123 | 2001 | 3.0 | 3.9 | 2.7 | 30.02 | 124.13 | 0 | |
| 13:58 | 17:58 | 2623 | 2501 | 3.1 | 3.9 | 2.7 | 28.88 | 106.04 | 0 | |
| | | | | | | | | | | |

| NCS SubSea Navigating the Future | | | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date: 5-Jun-15 | | | | Line Number: 1852 | | | Water Depth(m) 26.2 | |
| | | | Client: Columbia University | | | | Line Azimuth: 124 | | | Mean Velocity: 1505m/s | |
| | | | Area: New Jersey | | | | Sequence No 10 | | | Vessel Speed: 4.5 | |
| | | | Vessel: R/V Marcus Langseth | | | | Observers: Ard/Koprowski | | | **Sea(m): 1-2 Wind (kts): 3** | |
| 14:32 | 18:32 | 2246 | 2878 | 3.1 | 3.8 | 2.8 | 27.19 | 124.72 | 0 | Returned to pre-plotted line | |
| | | | | | | | | | | | |
| 14:43 | 18:43 | 2123 | 3001 | 3.1 | 3.7 | 2.6 | 26.15 | 123.00 | 0 | | |
| 15:27 | 19:27 | 1623 | 3501 | 3.0 | 3.8 | 2.5 | 33.19 | 123.09 | 0 | | |
| 16:12 | 20:12 | 1123 | 4001 | 2.9 | 3.6 | 2.6 | 49.54 | 123.14 | 0 | | |
| | | | | | | | | | | | |
| 16:35 | 20:35 | 865 | 4259 | 2.9 | 3.6 | 2.7 | 53.26 | 121.54 | 0 | EOL/LGSP | |
| | | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 25.81µBar | |
| | | | | | | | | | | Peak RMS Noise: 76.36µBar | |

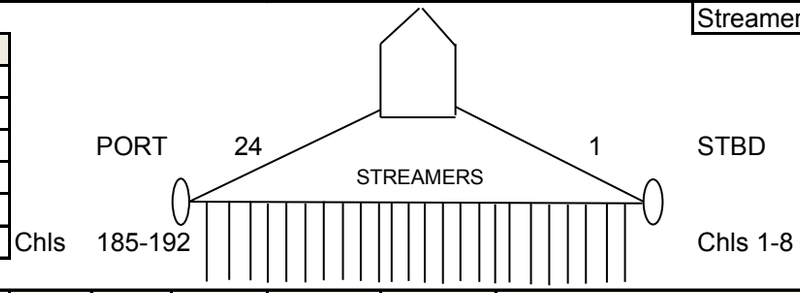
| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | |
|---|---|---|---|
| | Date: 5-Jun-15 | Line Number: 1852 | Water Depth(m) 26.2 |
| | Client: Columbia University | Line Azimuth: 124 | Mean Velocity: 1505m/s |
| | Area: New Jersey | Sequence No 10 | Vessel Speed: 4.5 |
| | Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 1-2 Wind (kts): 3** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | |
|---|---|---|---|
| Date: 6-Jun-15 | Line Number: 2740 | Water Depth(m): 53.7 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1504.8m/s |
| Area: New Jersey | Sequence No 11 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 0.5 Wind (kts): 11 NE** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17:43 | 21:43 | 885 | 1 | 3 | 3.8 | 2.7 | 55.63 | 304.95 | 1 | SOL/FGSP |
| 17:52 | 21:52 | 985 | 101 | | | | | | | |
| 18:27 | 22:27 | 1385 | 501 | 3.4 | 4.2 | 2.8 | 35.35 | 305.49 | 1 | |
| 19:10 | 23:10 | 1885 | 1001 | 3.4 | 4.1 | 2.9 | 34.46 | 306.89 | 1 | |
| 19:55 | 23:55 | 2385 | 1501 | 3.1 | 3.9 | 2.7 | 29.32 | 304.92 | 1 | |
| 20:00 | 00:00 | 2431 | 1547 | 3.0 | 3.9 | 2.5 | 29.47 | 303.38 | 1 | Midnight SP |
| 20:39 | 00:39 | 2885 | 2001 | 3.0 | 3.7 | 2.6 | 27.94 | 303.98 | 1 | |
| 21:22 | 01:22 | 3385 | 2501 | 3.1 | 3.8 | 2.8 | 31.35 | 305.95 | 1 | |
| 22:06 | 02:06 | 3885 | 3001 | 3.0 | 3.9 | 2.7 | 31.70 | 306.29 | 1 | |
| 22:50 | 02:50 | 4385 | 3501 | 3.2 | 3.8 | 2.6 | 29.11 | 306.44 | 1 | |
| 23:33 | 03:33 | 4835 | 4001 | 3.1 | 3.8 | 2.8 | 31.49 | 304.51 | 1 | |
| 11:56 | 03:56 | 5137 | 4253 | 3.3 | 3.8 | 2.4 | 27.54 | 304.3 | 0 | EOL/LGSP |
| | | | | | | | | | | Average RMS Noise: 27.55 µBar |
| | | | | | | | | | | Peak RMS Noise: 65.32 µBar |
| | | | | | | | | | | |

NCS SubSea
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

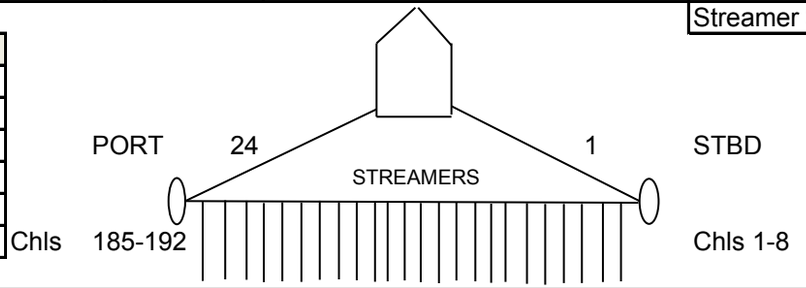
| | | |
|---|---|---|
| Date: 6-Jun-15 | Line Number: 2740 | Water Depth(m): 53.7 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1504.8m/s |
| Area: New Jersey | Sequence No 11 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 0.5 Wind (kts): 11 NE** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 7-Jun-15 | Line Number: 1828 | Water Depth(m): 22.8 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1504.8m/s |
| Area: New Jersey | Sequence No 12 | Vessel Speed: 4.6 |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 0-1 Wind (kts): NE 9.1** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval:12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | |
|---|---|
| Reference Point: | Stern |
| CRP to Stern: | -30.67 m |
| Stern to Stbd Paravane: | 325 m |
| Stern to Port Paravane: | 315 m |
| Spread (strmr 1 to 24): | 287.5 m |
| Stern to Source: | 275 m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 01:04 | 05:04 | 5128 | 1 | 2.9 | 3.5 | 2.5 | 23.3 | 121.82 | 0 | SOL/FGSP |
| 03:30 | 07:30 | 3480 | 1646 | 3 | 3.8 | 3.5 | 28.6 | 120.98 | 0 | |
| 04:28 | 08:28 | 2820 | 2306 | 3.0 | 3.2 | 3.6 | 28.3 | 111.60 | 0 | Turning off line to Hdg 90 due to vessel on line |
| 04:38 | 08:38 | 2707 | 2419 | | | | | | 0 | Furthest off line 201.1m due to vessel on track |
| 04:54 | 08:54 | 2603 | 2523 | 3.0 | 3.8 | 3.0 | 30.15 | 116.60 | 0 | Returned to line |
| 05:30 | 09:30 | 3001 | 2125 | 2.9 | 3.5 | 2.5 | 27.75 | 115.03 | 1 | Delta timing error S1G4 |
| 07:16 | 11:16 | 972 | 4154 | 3.0 | 3.6 | 2.6 | 52.28 | 120.49 | 0 | Last shot inside the bin box |
| 07:26 | 11:26 | 865 | 4264 | 2.9 | 3.5 | 2.4 | 53.19 | 124.4 | 0 | EOL/LGSP |
| | | | | | | | | | | Average RMS Noise: µBar |
| | | | | | | | | | | Peak RMS Noise: µBar |
| | | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

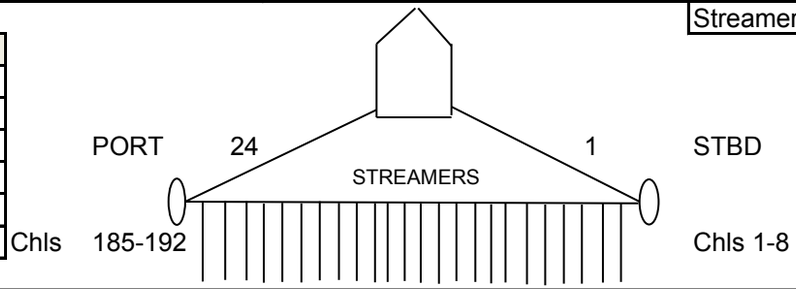
| | | |
|---|---|---|
| Date: 7-Jun-15 | Line Number: 1828 | Water Depth(m): 22.8 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1504.8m/s |
| Area: New Jersey | Sequence No 12 | Vessel Speed: 4.6 |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 0-1 Wind (kts): NE 9.1** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 7-Jun-15 | Line Number: 1828 | Water Depth(m): 53.5 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1504.8m/s |
| Area: New Jersey | Sequence No 12 | Vessel Speed: 4.6 |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 0 Wind (kts): 6.8** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 09:07 | 13:07 | 857 | 1 | 3.2 | 3.5 | 3.1 | 53.5 | 306.44 | 0 | SOL/FGSP |
| | | | | | | | | | | |
| | | | | | | | | | | |
| 09:58 | 13:58 | 1462 | 606 | 3.2 | 3.9 | 3.7 | 38.1 | 308.07 | 0 | |
| 10:41 | 14:41 | 1962 | 1106 | | | | | | | |
| | | | | | | | | | | |
| 10:49 | 14:49 | 2059 | 1203 | 3.2 | 3.8 | 3.1 | 33.06 | 305.56 | 0 | Power down for turtle; Missed SP2060-SP2124 |
| 10:55 | 14:55 | 2125 | 1213 | 3.0 | 3.6 | 2.8 | 27.47 | 307.02 | 0 | Power up to full volume |
| | | | | | | | | | | |
| 14:16 | 18:16 | 4269 | 3356 | 2.9 | 3.8 | 2.4 | 31.48 | 302.43 | 0 | Power down for turtle |
| 14:21 | 18:21 | 4332 | 3419 | 2.8 | 3.7 | 2.5 | 29.99 | 307.97 | 0 | Power up to full volume |
| | | | | | | | | | | |
| 14:39 | 18:39 | 4519 | 3606 | | | | | | | |
| 15:28 | 19:28 | 5019 | 4106 | 3.6 | 4.2 | 3.1 | 28.40 | 304.72 | 0 | |
| | | | | | | | | | | |

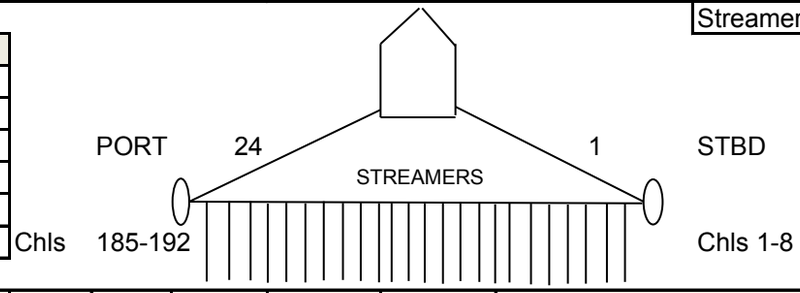
| NCS SubSea Navigating the Future | | | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date: 7-Jun-15 | | | | Line Number: 1828 | | | | Water Depth(m): 53.5 |
| | | | Client: Columbia University | | | | Line Azimuth: 124° | | | | Mean Velocity: 1504.8m/s |
| | | | Area: New Jersey | | | | Sequence No 12 | | | | Vessel Speed: 4.6 |
| | | | Vessel: R/V Marcus Langseth | | | | Observers: Ard/Koprowski | | | | **Sea(m): 0 Wind (kts): 6.8** |
| 15:40 | 19:40 | 5137 | 4224 | 3.3 | 4.0 | 2.8 | 26.25 | 305.42 | 0 | EOL/LGSP | |
| | | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 26.36 µBar | |
| | | | | | | | | | | Peak RMS Noise: 72.42 µBar | |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | |
|---|---|---|---|
| Date: 7-Jun-15 | Line Number: 1924R | Water Depth(m): 23.0 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1504.7m/s |
| Area: New Jersey | Sequence No 14 | Vessel Speed: 4.5kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 0 Wind (kts): E 5** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | Injector Delay:52 msec | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| 16:44 | 20:44 | 5110 | 1 | 3 | 3.7 | 2.6 | 23 | 124.4 | 1 | SOL/FGSP |
| | | | | | | | | | | |
| 16:55 | 20:55 | 4993 | 118 | 2.8 | 3.4 | 2.7 | 26.79 | 126.82 | 1 | Power down d/t turtle sighting |
| 17:01 | 21:01 | 4925 | 186 | 2.8 | 3.5 | 2.5 | 27.17 | 123.92 | 1 | Power up to full volume |
| | | | | | | | | | | |
| 17:29 | 21:29 | 4610 | 501 | 2.7 | 3.6 | 2.7 | 32.14 | 123.95 | 1 | |
| 18:13 | 22:13 | 4110 | 1001 | 2.9 | 3.7 | 2.2 | 27.36 | 124.90 | 1 | |
| 18:58 | 22:58 | 3610 | 1501 | 2.4 | 3.7 | 2.8 | 29.32 | 124.87 | 1 | |
| 19:45 | 23:45 | 3110 | 2001 | 3.1 | 3.5 | 2.4 | 27.89 | 125.79 | 1 | |
| | | | | | | | | | | |
| 20:00 | 00:00 | 2957 | 2154 | 3.1 | 3.6 | 2.7 | 28.13 | 126.72 | 1 | Midnight shot point |
| | | | | | | | | | | |
| 20:35 | 00:35 | 2610 | 2501 | 2.9 | 3.7 | 2.5 | 30.00 | 123.85 | 1 | |

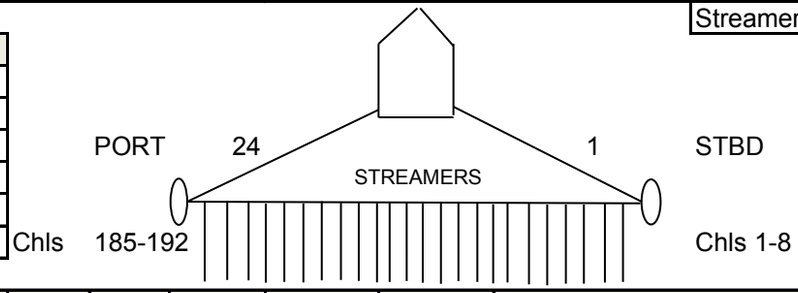
| NCS SubSea Navigating the Future | | | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date: 7-Jun-15 | | | | Line Number: | 1924R | | Water Depth(m): 23.0 |
| | | | Client: Columbia University | | | | Line Azimuth: | 124.4° | | Mean Velocity: 1504.7m/s |
| | | | Area: New Jersey | | | | Sequence No | 14 | | Vessel Speed: 4.5kt |
| | | | Vessel: R/V Marcus Langseth | | | | Observers: | Ard/Koprowski | | **Sea(m): 0 Wind (kts): E 5** |
| 21:25 | 01:25 | 2110 | 3001 | 2.9 | 3.9 | 2.6 | 28.04 | 120.70 | 1 | |
| 22:16 | 02:16 | 1610 | 3501 | 3.0 | 3.6 | 2.3 | 44.16 | 126.88 | 1 | |
| 23:06 | 03:06 | 1110 | 4001 | 2.9 | 3.4 | 2.3 | 51.64 | 127.89 | 1 | |
| | | | | | | | | | | |
| 23:30 | 03:30 | 865 | 4246 | 2.9 | 3.3 | 3.0 | 54.0 | 125.00 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 27.69 µBar |
| | | | | | | | | | | Peak RMS Noise: 80.31 µBar |
| | | | | | | | | | | |
| | | | | | | | | | | |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 7-Jun-15 | Line Number: | 2692 | Water Depth(m) 53.3 | |
| | Client: Columbia University | Line Azimuth: | 304.4° | Mean Velocity: 1507.8m/s | |
| | Area: New Jersey | Sequence No | 15 | Vessel Speed: 4.0 kt | |
| | Vessel: R/V Marcus Langseth | Observers: | Ard/Koprowski | **Sea(m): 0.5 Wind (kts): 5.5** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0:31 | 04:31 | 866 | 1 | 3.0 | 3.7 | 2.8 | 53.30 | 300.69 | 0 | SOL - Error in startup, external not set |
| 0:32 | 04:32 | 886 | 29 | 3.0 | 3.7 | 2.8 | 54.25 | 300.69 | 0 | SOL/FGSP |
| 01:50 | 05:50 | 1733 | 876 | 3.1 | 3.8 | 2.8 | 35.56 | 303.32 | 0 | |
| 03:00 | 07:00 | 2437 | 1580 | 2.9 | 3.7 | 3.1 | 29.26 | 303.59 | 0 | |
| 03:32 | 07:32 | 2774 | 1916 | | | | | | 0 | LGSP |
| | | 2775 | 1917 | | | | | | 0 | Incomplete data missing section 19-24 from SP2775-SP2968 |
| | | 2968 | 2114 | | | | | | 0 | EOL/LSP |
| | | | 2121 | | | | | | | Data continued to be retrieved after line was |
| | | | | | | | | | | Average RMS Noise: µBar |
| | | | | | | | | | | Peak RMS Noise: µBar |
| | | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

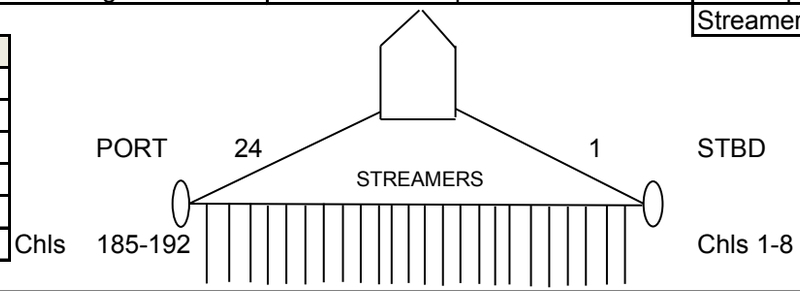
| | | |
|---|---|---|
| Date: 7-Jun-15 | Line Number: 2692 | Water Depth(m) 53.3 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1507.8m/s |
| Area: New Jersey | Sequence No 15 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 0.5 Wind (kts): 5.5** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 8-Jun-15 | Line Number: 2668 | Water Depth(m): 53 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1506.3m/s |
| Area: New Jersey | Sequence No 16 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1 Wind (kts): S 20** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 274 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Streamer 15 not recorded after SP 1813 |
| | | | | | | | | | | |
| 16:30 | 20:30 | 876 | 1 | 2.6 | 2.4 | 2.1 | 53 | 304.4 | 5.38 | SOL/FGSP |
| 16:30 | 20:30 | 876 | 1 | 2.6 | 2.4 | 2.1 | 53 | 304.4 | 5.38 | From SOL, channels 113 to 120 not recorded |
| 17:32 | 21:32 | 1547 | 672 | | | | | | | Streamers 21 to 24 missing / no data |
| 17:47 | 21:47 | 1695 | 820 | | | | | | | Reboot recording system |
| 17:59 | 21:59 | 1813 | 938 | | | | | | | All streamers now recording (except str. 15) |
| 17:59 | 21:59 | 1813 | 99999 | | | | | | | File number reset to 99999, and decrementing |
| 19:11 | 23:11 | 2593 | 99219 | | | | | | | Bad Shot, 'serial string not detected', bad timing |
| 19:14 | 23:14 | 2620 | 99192 | | | | | | | Bad Shot, 'serial string not detected', bad timing |
| 19:36 | 23:36 | 2857 | 98955 | | | | | | | Bad Shot, 'serial string not detected', bad timing |
| 19:53 | 23:53 | 3055 | 98757 | | | | | | | Bad Shot, 'serial string not detected', bad timing |
| 19:53 | 23:53 | 3058 | 98754 | | | | | | | Bad Shot, 'serial string not detected', bad timing |
| 19:53 | 23:53 | 3062 | 98750 | | | | | | | Bad Shot, 'serial string not detected', bad timing |
| 19:59 | 23:59 | 3131 | 98682 | | | | | | | Bad Shot, 'serial string not detected', bad timing |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Date: 8-Jun-15 | | | | Line Number: 2668 | | | | | | Water Depth(m): 53 | |
| Client: Columbia University | | | | Line Azimuth: 304.4° | | | | | | Mean Velocity: 1506.3m/s | |
| Area: New Jersey | | | | Sequence No 16 | | | | | | Vessel Speed: 4.0 kt | |
| Vessel: R/V Marcus Langseth | | | | Observers: Ard / Curtis | | | | | | **Sea(m): 1 Wind (kts): S 20** | |
| 20:22 | 00:22 | 3385 | 98427 | | | | | | | Bad Shot, 'serial string not detected', bad timing | |
| 20:23 | 00:23 | 3393 | 98419 | | | | | | | Bad Shot, 'serial string not detected', bad timing | |
| 20:31 | 00:31 | 3482 | 98331 | | | | | | | Bad Shot, 'serial string not detected', bad timing | |
| 20:36 | 00:36 | 3534 | 98268 | | | | | | | Bad Shot, 'serial string not detected', bad timing | |
| 20:42 | 00:42 | 3600 | 98212 | | | | | | | Bad Shot, 'serial string not detected', bad timing | |
| | | | | | | | | | | | |
| 23:01 | 03:01 | 5137 | 96675 | | | | | | | EOL/LGSP | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 21.79 µBar | |
| | | | | | | | | | | Peak RMS Noise: 85.66 µBar | |

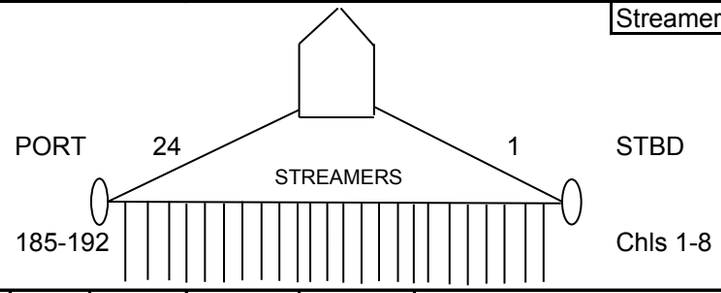
| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | |
|---|---|---|---|
| | Date: 8-Jun-15 | Line Number: 2668 | Water Depth(m): 53 |
| | Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1506.3m/s |
| | Area: New Jersey | Sequence No 16 | Vessel Speed: 4.0 kt |
| | Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1 Wind (kts): S 20** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | |
|---|---|---|---|
| Date: 9-Jun-15 | Line Number: 1804 | Water Depth(m) 28.4 |
| Client: Columbia University | Line Azimuth: 124 | Mean Velocity: 1506.3m/s |
| Area: New Jersey | Sequence No 17 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski | **Sea(m): 1-2 Wind (kts): 12.4** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 274 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Streamer 15 not recorded after SP 1813 |
| 12:17 | 4:17 | 5028 | 1 | 3.2 | 3.4 | 2.3 | 28.40 | 135.62 | 0 | SOL/FGSP |
| 1:01 | 5:01 | 4574 | 455 | 3.0 | 3.3 | 2.3 | 26.70 | 131.33 | 1 | SP 4574, 4573 |
| 02:15 | 06:15 | 3782 | 1247 | 2.6 | 3.5 | 2.2 | 30.17 | 130.97 | 0 | |
| 2:32 | 6:32 | 3591 | NA | 2.7 | 3.3 | 1.7 | 30.30 | 128.52 | 1 | FFID 1437/38 Missed shot |
| 2:34 | 6:34 | 3569 | NA | 2.7 | 3.3 | 1.7 | 30.97 | 126.67 | 1 | FFID 1460/61 Missed Shot |
| 2:54 | 6:54 | 3354 | NA | ------- | ------- | ------- | 27.94 | 131.42 | 0 | FFID 1674/75 Missed shot |
| 2:59 | 6:59 | 3291 | NA | ------- | ------- | ------- | 25.64 | 132.00 | 0 | FFID 1738/39 Missed shot |
| 3:37 | 7:37 | 2867/6/5 | NA | ------- | ------- | ------- | 28.75 | 130.68 | 1 | FFID 2162-65 Missed shot |
| 3:39 | 7:39 | 2847/6 | NA | 3.5 | 3.3 | 2.3 | 28.75 | 130.68 | 1 | FFID 2182-84 Missed Shot |
| 3:49 | 7:49 | 2787 | NA | ------- | ------- | ------- | ------- | ------- | 0 | FFID 2301/02 Missed shot |
| 3:50 | 7:50 | 2719 | NA | ------- | ------- | ------- | ------- | ------- | 0 | FFID 2309/10 Missed shot |
| 4:02 | 8:02 | 2595 | NA | ------- | ------- | ------- | ------- | ------- | 0 | FFID 2434 Missed shot |
| 4:38 | 8:38 | 2214 | NA | 2.7 | 3.0 | 2.5 | 27.01 | 133.77 | 1 | FFID 2814/15 Missed shot |
| 4:42 | 8:42 | 2163 | NA | ------- | ------- | ------- | ------- | ------- | 1 | FFID 2865/66 Missed shot |

| NCS SubSea Navigating the Future | | | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date: 9-Jun-15 | | | | Line Number: | 1804 | | Water Depth(m) 28.4 |
| | | | Client: Columbia University | | | | Line Azimuth: | 124 | | Mean Velocity: 1506.3m/s |
| | | | Area: New Jersey | | | | Sequence No | 17 | | Vessel Speed: 4.0 kt |
| | | | Vessel: R/V Marcus Langseth | | | | Observers: | Ard / Koprowski | | **Sea(m): 1-2 Wind (kts): 12.4** |
| 4:51 | 8:51 | 2071 | NA | ------- | ------- | ------- | ------- | ------- | 0 | FFID 2957/58 Missed shot |
| 5:04 | 9:04 | 1929 | 3100 | 2.8 | 3.3 | 2.4 | 29.66 | 135.50 | 0 | |
| 5:22 | 9:22 | 1735 | NA | ------- | ------- | ------- | ------- | ------- | 0 | FFID 3293/94 Missed shot |
| 5:26 | 9:26 | 1688 | NA | ------- | ------- | ------- | ------- | ------- | 0 | FFID 3340/41 Missed shot |
| 5:33 | 9:33 | 1621/20 | NA | ------- | ------- | ------- | ------- | ------- | 1 | FFID 3408-10 Missed shot |
| 5:36 | 9:36 | 1578 | NA | ------- | ------- | ------- | ------- | ------- | 0 | FFID 3450/51 Missed shot |
| 5:41 | 9:41 | 1521 | NA | ------- | ------- | ------- | ------- | ------- | 0 | FFID 3507/08 Missed shot |
| 5:53 | 9:53 | 1386 | NA | ------- | ------- | ------- | ------- | ------- | 0 | FFID 3642/43 Missed shot |
| 5:55 | 9:55 | 1361 | 3668 | 2.5 | 3.2 | 2.0 | 49.52 | 134.80 | 0 | |
| 5:59 | 9:59 | 1313 | NA | ------- | ------- | ------- | ------- | ------- | 1 | FFID 3715/16 Missed shot |
| 6:00 | 10:00 | 1304 | NA | ------- | ------- | ------- | ------- | ------- | 0 | FFID 3724/25 Missed shot |
| 6:06 | 10:06 | 1243 | NA | ------- | ------- | ------- | ------- | ------- | 1 | FFID 3785/86 Missed shot |
| 6:07 | 10:07 | 1223 | NA | ------- | ------- | ------- | ------- | ------- | 0 | FFID 3805/06 Missed shot |
| 6:25 | 10:25 | 1035 | NA | ------- | ------- | ------- | ------- | ------- | 0 | FFID 3993/94 Missed shot |
| 6:30 | 10:30 | 970 | NA | ------- | ------- | ------- | ------- | ------- | 1 | FFID 4058/59 Missed shot |
| 6:31 | 10:31 | 961 | NA | ------- | ------- | ------- | ------- | ------- | 0 | FFID 4067/68 Missed shot |
| 6:31 | 10:31 | 959 | NA | ------- | ------- | ------- | ------- | ------- | 0 | FFID 4069/70 Missed shot |
| | | | | | | | | | | |
| 6:40 | 10:40 | 865 | 4164 | 3.0 | 3.1 | 2.4 | 53.43 | 136.62 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 18.10 µBar |
| | | | | | | | | | | Peak RMS Noise: 70.2 µBar |
| | | | | | | | | | | |
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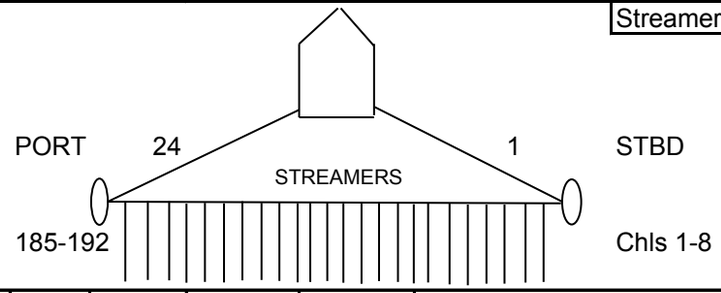
NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 9-Jun-15 | Line Number: 2644 | Water Depth(m) 53.4 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1507.9 m/s |
| Area: New Jersey | Sequence No 18 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski / Curtis | **Sea(m): 1-2 Wind (kts): S 18.7** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 274 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 7:47 | 11:47 | 891 | 1 | 2.6 | 3.5 | 1.9 | 54.3 | 301.72 | 0 | SOL/FGSP Streamer 15 not recorded |
| 8:27 | 12:27 | 1327 | 437 | 2.8 | 3.4 | 2.3 | 29.11 | 298.35 | 0 | |
| 08:31 | 12:31 | 1377 | 486 | NA | ------ | ------ | ------ | ------ | 0 | Trigger time threshold exceeded |
| 11:16 | 15:16 | 3205 | 2314 | 2.7 | 2.7 | 2.3 | 27.78 | 295.44 | 1 | |
| 11:37 | 15:37 | 3439 | NA | NA | ------ | ------ | ------ | ------ | 0 | FFID 2547/48 Missing shot |
| 11:42 | 15:42 | 3493 | NA | NA | ------ | ------ | ------ | ------ | 1 | FFID 2601/02 Missing shot |
| 11:43 | 15:43 | 3508 | NA | NA | ------ | ------ | ------ | ------ | 0 | FFID 2616/17 Missing shot |
| 12:04 | 16:04 | 3743 | 2851 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 12:09 | 16:09 | 3793 | 2903 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 12:14 | 16:14 | 3847 | 2956 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 12:22 | 16:22 | 3944 | 3053 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 12:23 | 16:23 | 3954 | 3064 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 12:23 | 16:23 | 3955 | 3064 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 12:24 | 16:24 | 3963 | 3072 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 12:44 | 16:44 | 4177 | 3287 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |

| NCS SubSea Navigating the Future | | | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date: 9-Jun-15 | | | | Line Number: 2644 | | | Water Depth(m) 53.4 |
| | | | Client: Columbia University | | | | Line Azimuth: 304.4° | | | Mean Velocity: 1507.9 m/s |
| | | | Area: New Jersey | | | | Sequence No 18 | | | Vessel Speed: 4.0 kt |
| | | | Vessel: R/V Marcus Langseth | | | | Observers: Ard / Koprowski / Curtis | | | **Sea(m): 1-2 Wind (kts): S 18.7** |
| 12:51 | 16:51 | 4251 | 3360 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 12:54 | 16:54 | 4288 | 3397 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 13:03 | 17:03 | 4382 | 3491 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 13:25 | 17:25 | 4626 | 3735 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 13:26 | 17:26 | 4629 | 3738 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 13:31 | 17:31 | 4684 | 3793 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 13:41 | 17:41 | 4796 | 3905 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 13:45 | 17:45 | 4836 | 3945 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 13:48 | 17:48 | 4876 | 3985 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 13:52 | 17:52 | 4919 | 4028 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 13:56 | 17:56 | 4964 | 4073 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 13:56 | 17:56 | 4965 | 4074 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 13:56 | 17:56 | 4966 | 4075 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| 14:07 | 18:07 | 5084 | 4193 | NA | ------ | ------ | ------ | ------ | | Bad Shot, 'serial string not detected', bad timing |
| | | | | | | | | | | |
| 14:12 | 18:12 | 5137 | 4247 | 2.8 | 3.4 | 1.9 | 26.6 | 304 | | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: µBar |
| | | | | | | | | | | Peak RMS Noise: µBar |
| | | | | | | | | | | |
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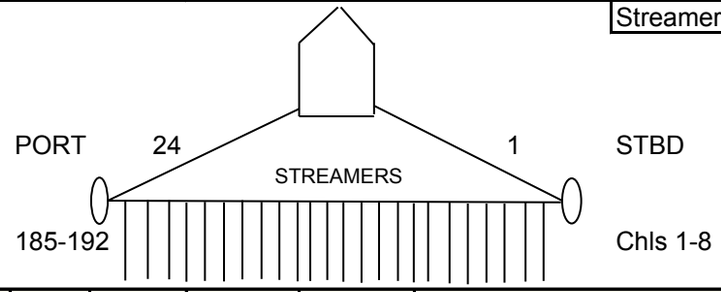
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | |
|---|---|---|---|
| Date: 10-Jun-15 | Line Number: 1780 | Water Depth(m): 49 |
| Client: Columbia University | Line Azimuth: 124 | Mean Velocity: 1507.9 m/s |
| Area: New Jersey | Sequence No 19 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 2 Wind (kts): SW 16** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | |
|---|---|
| Reference Point: | Stern |
| CRP to Stern: | -30.67 m |
| Stern to Stbd Paravane: | 325 m |
| Stern to Port Paravane: | 315 m |
| Spread (strmr 1 to 24): | 287.5 m |
| Stern to Source: | 274 m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 21:08 | 01:08 | 1248 | 1 | 2.9 | 3.2 | 2.2 | 49 | 124 | 0 | SOL/FGSP Streamer 15 not recorded |
| 21:18 | 01:18 | 1130 | 118 | | | | | | | Guns not firing, bad shots |
| 21:20 | 01:20 | 1116 | 132 | | | | | | | Guns firing, good shots |
| 21:34 | 01:34 | 960 | 289 | 2.9 | 3.2 | 2.2 | 55 | 124 | | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 18.91 µBar |
| | | | | | | | | | | Peak RMS Noise: 70.05 µBar |
| | | | | | | | | | | |
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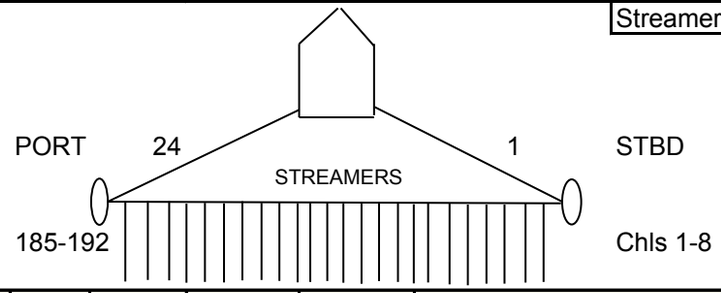
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 10-Jun-15 | Line Number: 2620 | Water Depth(m): 55 |
| Client: Columbia University | Line Azimuth: 304 | Mean Velocity: 1507.9 m/s |
| Area: New Jersey | Sequence No 20 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Kopowski | **Sea(m): 2 Wind (kts): SW 18** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 274 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 22:48 | 02:48 | 878 | 1 | 2.5 | 3.3 | 1.8 | 55 | 304 | 0 | SOL/FGSP Streamer 15 not recorded |
| 22:51 | 02:51 | 918 | 41 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 23:46 | 03:46 | 1543 | 666 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 23:49 | 03:49 | 1580 | 703 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 11:56 | 3:56 | 1655 | 778 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 11:56 | 3:56 | 1658 | 781 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:11 | 4:11 | 1831 | 954 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:18 | 4:18 | 1915 | 1038 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:19 | 4:19 | 1917 | 1040 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:23 | 4:23 | 1964 | 1087 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:24 | 4:24 | 1977 | 1100 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:29 | 4:29 | 2033 | 1156 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:34 | 4:34 | 2095 | 1218 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:39 | 4:39 | 2147 | 1270 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:39 | 4:39 | 2149 | 1272 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |

| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Date: 10-Jun-15 | | | | Line Number: 2620 | | | Water Depth(m): 55 | |
| | Client: Columbia University | | | | Line Azimuth: 304 | | | Mean Velocity: 1507.9 m/s | |
| | Area: New Jersey | | | | Sequence No 20 | | | Vessel Speed: 4.0 kt | |
| | Vessel: R/V Marcus Langseth | | | | Observers: Ard / Curtis / Kopowski | | | **Sea(m): 2 Wind (kts): SW 18** | |
| 00:47 | 4:47 | 2238 | 1361 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:48 | 4:48 | 2249 | 1372 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:49 | 4:49 | 2255 | 1379 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:49 | 4:49 | 2261 | 1384 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:51 | 4:51 | 2281 | 1404 | 3.0 | 3.1 | 1.9 | 28.88 | 299.34 | 0 | |
| 00:52 | 4:52 | 2295 | 1418 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:53 | 4:53 | 2306 | 1429 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 00:54 | 4:54 | 2319 | 1442 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:12 | 5:12 | 2523 | 1646 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:14 | 5:14 | 2537 | 1660 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:14 | 5:14 | 2540 | 1663 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:14 | 5:14 | 2544 | 1667 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:21 | 5:21 | 2620 | 1743 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:21 | 5:21 | 2621 | 1744 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:22 | 5:22 | 2626 | 1749 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:22 | 5:22 | 2629 | 1752 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:24 | 5:24 | 2652 | 1775 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:27 | 05:27 | 2690 | 1813 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:29 | 5:29 | 2706 | 1829 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:30 | 5:30 | 2720 | 1843 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:35 | 5:35 | 2775 | 1898 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:38 | 5:38 | 2815 | 1939 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:39 | 5:39 | 2820 | 1943 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:40 | 5:40 | 2840 | 1963 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:42 | 5:42 | 2857 | 1980 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:43 | 5:43 | 2871 | 1994 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:44 | 5:44 | 2879 | 2002 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:44 | 05:44 | 2883 | 2006 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:45 | 05:45 | 2894 | 2017 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:46 | 05:46 | 2901 | 2024 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:47 | 05:47 | 2918 | 2041 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:48 | 05:48 | 2920 | 2043 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:48 | 05:48 | 2928 | 2051 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:49 | 05:49 | 2933 | 2056 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:50 | 05:50 | 2950 | 2073 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |

| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Date: 10-Jun-15 | | | | Line Number: 2620 | | | Water Depth(m): 55 | |
| | Client: Columbia University | | | | Line Azimuth: 304 | | | Mean Velocity: 1507.9 m/s | |
| | Area: New Jersey | | | | Sequence No 20 | | | Vessel Speed: 4.0 kt | |
| | Vessel: R/V Marcus Langseth | | | | Observers: Ard / Curtis / Kopowski | | | **Sea(m): 2 Wind (kts): SW 18** | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01:51 | 05:51 | 2960 | 2083 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:52 | 05:52 | 2964 | 2087 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:53 | 05:53 | 2977 | 2100 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:53 | 05:53 | 2978 | 2101 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:53 | 05:53 | 2981 | 2104 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:53 | 05:53 | 2984 | 2107 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:54 | 05:54 | 2990 | 2113 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:57 | 05:57 | 3022 | 2145 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:57 | 05:57 | 3023 | 2146 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:57 | 05:57 | 3024 | 2147 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 01:57 | 05:57 | 3025 | 2148 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 02:03 | 06:03 | 3087 | 2210 | 3.1 | 3.3 | 2.3 | 27.73 | 303.87 | 1 | |
| 02:45 | 06:45 | 3525 | 2648 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 02:56 | 06:56 | 3638 | 2761 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:01 | 07:01 | 3686 | 2809 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:03 | 07:03 | 3709 | 2832 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:05 | 07:05 | 3733 | 2856 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:07 | 07:07 | 3755 | 2878 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:07 | 07:07 | 3756 | 2879 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:11 | 07:11 | 3789 | 2912 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:11 | 07:11 | 3797 | 2920 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:14 | 07:14 | 3828 | 2951 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:15 | 07:15 | 3835 | 2958 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:16 | 07:16 | 3846 | 2969 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:16 | 07:16 | 3848 | 2971 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:23 | 07:23 | 3916 | 3039 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:23 | 07:23 | 3917 | 3040 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:23 | 07:23 | 3920 | 3043 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:24 | 07:24 | 3926 | 3049 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:24 | 07:24 | 3927 | 3050 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:31 | 07:31 | 3997 | 3120 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:31 | 07:31 | 4007 | 3130 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:32 | 07:32 | 4008 | 3131 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:32 | 07:32 | 4009 | 3132 | ------ | ------ | ------ | ------ | ------ | ------ | Bad Shot, 'serial string not detected', bad timing |
| 03:48 | 07:48 | 4180 | 3304 | ------ | ------ | ------ | ------ | ------ | ------ | P-cable streamer #21 Failure |

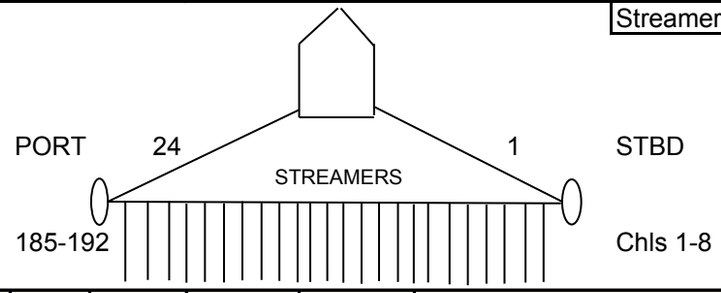
| NCS SubSea Navigating the Future | | | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date: 10-Jun-15 | | | | Line Number: 2620 | | | Water Depth(m): 55 | |
| | | | Client: Columbia University | | | | Line Azimuth: 304 | | | Mean Velocity: 1507.9 m/s | |
| | | | Area: New Jersey | | | | Sequence No 20 | | | Vessel Speed: 4.0 kt | |
| | | | Vessel: R/V Marcus Langseth | | | | Observers: Ard / Curtis / Kopowski | | | **Sea(m): 2 Wind (kts): SW 18** | |
| 04:01 | 08:01 | 4299 | 3421 | ------ | ------ | ------ | ------ | ------ | ------ | P-cable disarmed to deactivate STR #21 | |
| 04:03 | 08:03 | 4336 | 3441 | 3 | 4 | 2.5 | 29.44 | 305.67 | 1 | P-cable Armed and Good Shotpoint File | |
| 05:15 | 09:15 | 5045 | 4150 | 2.9 | 3.5 | 2.5 | 29.79 | 301.75 | 1 | | |
| | | | | | | | | | | | |
| 05:24 | 09:24 | 5137 | 4242 | 3.2 | 3.3 | 2.4 | 26.5 | 309.58 | 0 | EOL/LGSP | |
| | | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: µBar | |
| | | | | | | | | | | Peak RMS Noise: µBar | |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| Date: | 10-Jun-15 | Line Number: | 1780R | Water Depth(m) | 23.4 |
| Client: | Columbia University | Line Azimuth: | 124 | Mean Velocity: | 1505.9 m/s |
| Area: | New Jersey | Sequence No | 21 | Vessel Speed: | 4.4kt |
| Vessel: | R/V Marcus Langseth | Observers: | Ard / Curtis / Kopowski | **Sea(m): 0.5 Wind (kts): NW 5.1** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 274 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 6:30 | 10:30 | 5108 | 1 | 2.9 | 3.3 | 2.3 | 23.4 | 122.42 | 0 | SOL/FGSP Streamer 15 not recorded |
| 6:37 | 10:37 | 5035 | 76 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 6:42 | 10:42 | 4978 | 133 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 6:43 | 10:43 | 4959 | 152 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 6:44 | 10:44 | 4949 | 160 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 6:44 | 10:44 | 4947 | 162 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 6:45 | 10:45 | 4941 | 168 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 6:48 | 10:48 | 4903 | 206 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 7:58 | 11:58 | 4154 | 957 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 7:59 | 11:59 | 4140 | 969 | 2.7 | 3.2 | 2.2 | 30.84 | 123.08 | 0 | |
| 7:59 | 11:59 | 4139 | 972 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 8:03 | 12:03 | 4097 | 1014 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 8:04 | 12:04 | 4083 | 1028 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 8:07 | 12:07 | 4056 | 1053 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 8:08 | 12:08 | 4041 | 1068 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |

| NCS SubSea Navigating the Future | | | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date: 10-Jun-15 | | | | Line Number: | 1780R | | Water Depth(m) 23.4 | |
| | | | Client: Columbia University | | | | Line Azimuth: | 124 | | Mean Velocity: 1505.9 m/s | |
| | | | Area: New Jersey | | | | Sequence No | 21 | | Vessel Speed: 4.4kt | |
| | | | Vessel: R/V Marcus Langseth | | | | Observers: | Ard / Curtis / Kopowski | | **Sea(m): 0.5 Wind (kts): NW 5.1** | |
| 8:12 | 12:12 | 4001 | 1108 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 8:13 | 12:13 | 3993 | 1116 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 8:15 | 12:15 | 3964 | 1145 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 8:15 | 12:15 | 3963 | 1146 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 8:17 | 12:17 | 3944 | 1165 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 8:18 | 12:18 | 3937 | 1172 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 8:19 | 12:19 | 3925 | 1184 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 8:19 | 12:19 | 3924 | 1185 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 8:19 | 12:19 | 3921 | 1188 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 8:20 | 12:20 | 3917 | 1192 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 8:20 | 12:20 | 3915 | 1194 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 8:54 | 12:54 | 3565 | 1544 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 9:02 | 13:02 | 3475 | 1634 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 9:11 | 13:11 | 3380 | 1729 | 2.9 | 3.5 | 2.3 | 30.50 | 123.81 | 1 | | |
| 9:48 | 13:48 | 2996 | 2113 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 9:58 | 13:58 | 2897 | 2212 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 10:08 | 14:08 | 2788 | 2321 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 10:14 | 14:14 | 2732 | 2377 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 10:15 | 14:15 | 2716 | 2393 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 10:15 | 14:20 | 2670 | 2439 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing | |
| 10:23 | 14:23 | 2641 | 2468 | 2.9 | 3.5 | 2.1 | 27.14 | 126.03 | 0 | | |
| 10:25 | 14:25 | 2616 | 2490 | ----- | ----- | ----- | ----- | ----- | ----- | Power Down due to Turtle (Mit gun on) | |
| 10:31 | 14:31 | 2553 | 2556 | ----- | ----- | ----- | ----- | ----- | ----- | Power Up after approval of PSOs | |
| 13:13 | 17:13 | 865 | 4242 | 3.2 | 3.3 | 2.1 | 54.9 | 120 | 1 | EOL/LGSP | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | 19.69 | Average RMS Noise: µBar | |
| | | | | | | | | | 79.99 | Peak RMS Noise: µBar | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

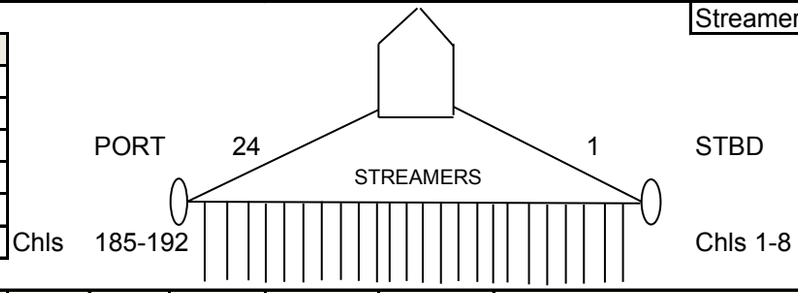
| | | |
|---|---|---|
| Date: 10-Jun-15 | Line Number: 1780R | Water Depth(m) 23.4 |
| Client: Columbia University | Line Azimuth: 124 | Mean Velocity: 1505.9 m/s |
| Area: New Jersey | Sequence No 21 | Vessel Speed: 4.4kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Kopowski | **Sea(m): 0.5 Wind (kts): NW 5.1** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | |
|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 10-Jun-15 | Line Number: 2596 | Water Depth(m): | |
| | Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1500m/s | |
| | Area: New Jersey | Sequence No 22 | Vessel Speed: 4.0 kt | |
| | Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): Wind (kts):** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| 14:21 | 18:21 | 879 | 1 | 3.2 | 3.4 | 2.3 | 56.1 | 304.4 | 0 | SOL/FGSP Streamer 15 not recorded |
| 15:10 | 19:10 | 1367 | 489 | 2.9 | 3.2 | 1.9 | 32 | 304 | 0 | |
| 15:47 | 19:47 | 1764 | 886 | | | | | | | Power down for turtle, 40in3 mit gun |
| 15:53 | 19:53 | 1823 | 945 | | | | | | | Full power |
| 16:00 | 20:00 | 1895 | 1017 | 3.0 | 2.9 | 2.3 | 35 | 304 | 0 | |
| 17:24 | 21:24 | 2780 | 1902 | 2.7 | 3.1 | 2.4 | 28 | 304 | 0 | |
| 18:26 | 22:26 | 3447 | 2569 | 2.8 | 2.9 | 2.4 | 29 | 304 | 0 | |
| 19:16 | 23:16 | 3974 | 3096 | 3.1 | 3.1 | 2.2 | 34 | 306 | 1 | |
| 20:15 | 00:15 | 4597 | 3719 | | | | | | | bad shot/ late timing |
| 21:06 | 01:06 | 5137 | 4259 | 2.9 | 3.3 | 2.2 | 25.7 | 305 | | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | 21.25 | Average RMS Noise: µBar |
| | | | | | | | | | 75.9 | Peak RMS Noise: µBar |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 10-Jun-15 | Line Number: 2596 | Water Depth(m): |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 22 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): Wind (kts):** |

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|---|---|---|---|---|---|---|---|---|---|---|
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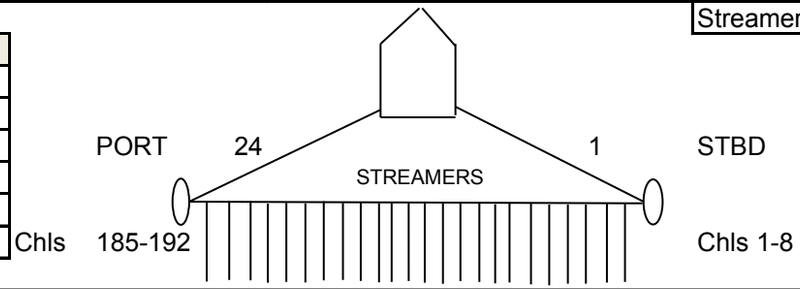
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 11-Jun-15 | Line Number: | 1756 / 1756A | Water Depth(m) 22.9 | |
| | Client: Columbia University | Line Azimuth: | 124.4° | Mean Velocity: 1508.96 m/s | |
| | Area: New Jersey | Sequence No | 23 | Vessel Speed: 4.0 kt | |
| | Vessel: R/V Marcus Langseth | Observers: | Ard/Koprowski | **Sea(m): 0.5 Wind (kts): SW 13** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| 22:12 | 02:12 | 5129 | 9 | 3 | 3.1 | 2.4 | 22.9 | 124 | 0 | SOL/FGSP Streamer 15 not recorded |
| 22:37 | 02:37 | 4868 | 270 | ----- | ----- | ----- | ----- | ----- | ----- | Bad timing/ gun shot |
| 23:00 | 03:00 | 4629 | 509 | 3.2 | 3.4 | 2.4 | 27.55 | 124.3 | 0 | |
| 23:29 | 3:29 | 4332 | 806 | ----- | ----- | ----- | ----- | ----- | ----- | Streamer 21 failed, no good shots |
| 23:31 | 3:31 | 4307 | 829 | ----- | ----- | ----- | ----- | ----- | ----- | GeoEel Controller stopped / Not Logging |
| 23:37 | 3:37 | 4249 | 1 | ----- | ----- | ----- | ----- | ----- | ----- | Restarted GeoEel Controller / Good shots, started new line name 1756A |
| 0:10 | 4:10 | 3912 | 338 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 0:32 | 4:32 | 3689 | 561 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 0:43 | 4:43 | 3574 | 676 | ----- | ----- | ----- | ----- | ----- | ----- | Streamer 21 failed, no good shots |
| 0:48 | 4:48 | 3553 | 772 | | | | | | | GeoEel Controller stopped / Not Logging |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | |
|---|---|---|---|
| Date: 11-Jun-15 | Line Number: 1756 / 1756A | Water Depth(m) 22.9 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1508.96 m/s |
| Area: New Jersey | Sequence No 23 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 0.5 Wind (kts): SW 13** |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0:50 | 4:50 | 3501 | 1 | ----- | ----- | ----- | ----- | ----- | ----- | Restarted GeoEel Controller / Good shots, started new line name 1756B |
| 1:28 | 5:28 | 3126 | 376 | ----- | ----- | ----- | ----- | ----- | ----- | Streamer 21 failed, no good shots |
| 1:31 | 5:31 | 3127 | 401 | ----- | ----- | ----- | ----- | ----- | ----- | GeoEel Controller stopped / Not Logging |
| 1:34 | 5:34 | 3071 | 1 | ----- | ----- | ----- | ----- | ----- | ----- | Restarted GeoEel Controller / Good shots, started new line name 1756C |
| 2:01 | 6:01 | 2799 | 273 | ----- | ----- | ----- | ----- | ----- | ----- | Streamer 21 failed, no good shots |
| 2:02 | 6:02 | 2792 | 280 | ----- | ----- | ----- | ----- | ----- | ----- | GeoEel Controller stopped / Not Logging |
| 2:08 | 6:08 | 2727 | 1 | ----- | ----- | ----- | ----- | ----- | ----- | Restarted GeoEel Controller / Good shots, started new line name 1756D, STR #21 Channels Deactivated (Chn #161-168) |
| 4:30 | 8:30 | 1222 | 1507 | ----- | ----- | ----- | ----- | ----- | ----- | Bad Shot, 'serial string not detected', bad timing |
| 4:31 | 8:31 | 1202 | 1526 | 2.8 | 3.2 | 2.4 | 50.85 | 130.59 | 0 | |
| | | | | | | | | | | |
| 5:01 | 9:01 | 865 | 1863 | 2.9 | 3.5 | 2.3 | 53.9 | 129.45 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: µBar |
| | | | | | | | | | | Peak RMS Noise: µBar |

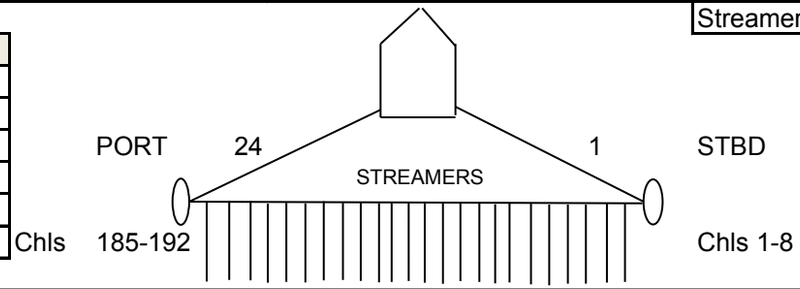
| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | |
|---|---|---|---|
| | Date: 11-Jun-15 | Line Number: 1756 / 1756A | Water Depth(m) 22.9 |
| | Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1508.96 m/s |
| | Area: New Jersey | Sequence No 23 | Vessel Speed: 4.0 kt |
| | Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 0.5 Wind (kts): SW 13** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 11-Jun-15 | Line Number: | 2668R | Water Depth(m) | 37.1 |
| | Client: Columbia University | Line Azimuth: | 304 | Mean Velocity: | 1511.66 m/s |
| | Area: New Jersey | Sequence No | 24 | Vessel Speed: | 4.7 |
| | Vessel: R/V Marcus Langseth | Observers: | Ard/Koprowski | **Sea(m): 0 Wind (kts): S 16.4** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:51 | 14:51 | 1503 | 1 | 3.5 | 4.0 | 2.4 | 37.1 | 300.18 | 0 | SOL/FGSP |
| 11:48 | 15:48 | 2170 | 668 | 3.1 | 3.2 | 2.2 | 27.5 | 310 | 0 | |
| 12:32 | 16:32 | 2670 | 1168 | 3.1 | 3.4 | 2.3 | 29.7 | 304.9 | 0 | |
| 13:17 | 17:17 | 3170 | 1668 | 3.2 | 3.3 | 2.5 | 27.6 | 301 | | |
| 14:55 | 18:55 | 4272 | 2770 | 2.6 | 3.4 | 2.5 | 36 | 297 | | |
| 15:41 | 19:41 | 4772 | 3270 | 3 | 3.4 | 2.3 | 32 | 304 | 0 | |
| 16:14 | 20:14 | 5137 | 3635 | 2.7 | 3.3 | 2.4 | 28.0 | 304 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | 18.68 | Average RMS Noise: µBar |
| | | | | | | | | | 68.52 | Peak RMS Noise: µBar |
| | | | | | | | | | | |
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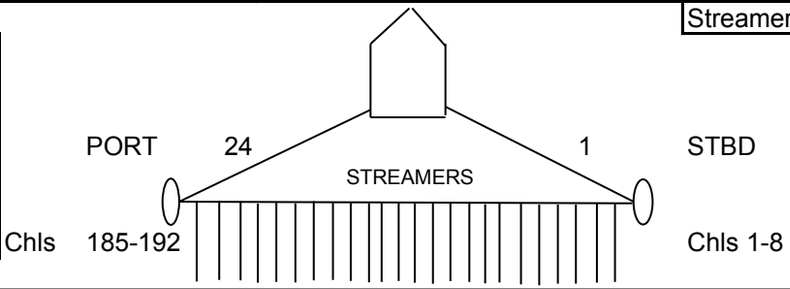
| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | |
|---|---|---|---|
| | Date: 11-Jun-15 | Line Number: 2668R | Water Depth(m) 37.1 |
| | Client: Columbia University | Line Azimuth: 304 | Mean Velocity: 1511.66 m/s |
| | Area: New Jersey | Sequence No 24 | Vessel Speed: 4 4.7 |
| | Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 0 Wind (kts): S 16.4** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 11-Jun-15 | Line Number: | 1732 | Water Depth(m) | 23.5 |
| | Client: Columbia University | Line Azimuth: | 124.4° | Mean Velocity: | 1500m/s |
| | Area: New Jersey | Sequence No | 25 | Vessel Speed: | 4.0 kt |
| | Vessel: R/V Marcus Langseth | Observers: | Ard/Koprowski | **Sea(m): 1 Wind (kts): SW 13** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | Injector Delay:52 msec | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | Files derement from 1 |
| 17:30 | 21:30 | 5125 | 1 | 3.2 | 3.5 | 2.4 | 23.48 | 124 | 0 | SOL/FGSP |
| 18:29 | 22:29 | 4456 | -668 | 3 | 3.4 | 2.4 | 28 | 124 | 0 | |
| 19:15 | 23:14 | 3925 | -1199 | 2.9 | 3.6 | 2.2 | 32 | 124 | 0 | |
| 20:02 | 00:02 | 3368 | -1756 | 3.2 | 3.5 | 2.3 | 30 | 126 | 0 | |
| 20:42 | 00:42 | 2895 | -2229 | 3.0 | 3.6 | 2.6 | 28.5 | 125 | 0 | |
| 10:10 | 02:10 | 1892 | -3232 | 3.2 | 3.7 | 2.6 | 28 | 125 | 0 | |
| 10:55 | 02:55 | 1392 | -3732 | 3.2 | 3.5 | 2.2 | 49 | 125 | 0 | |
| 11:34 | 03:34 | 977 | -4147 | ----- | ----- | ----- | ----- | ----- | ----- | missing serial string from nav |
| 11:45 | 3:45 | 865 | 4260 | 2.9 | 3.7 | 2.2 | 53.9 | 125.3 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 18.4 µBar |
| | | | | | | | | | | Peak RMS Noise: 65.82 µBar |
| | | | | | | | | | | |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

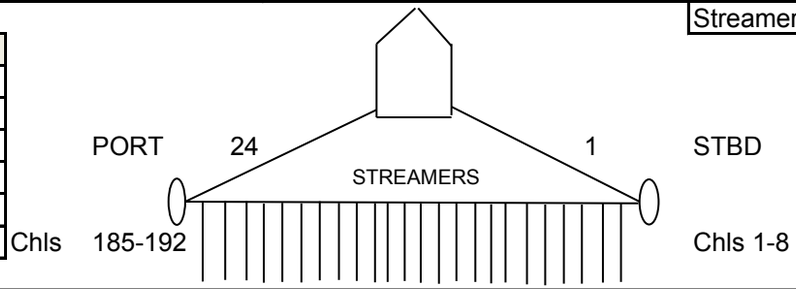
| | | |
|---|---|---|
| Date: 11-Jun-15 | Line Number: 1732 | Water Depth(m) 23.5 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 25 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 1 Wind (kts): SW 13** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 12-Jun-15 | Line Number: 2860R | Water Depth(m) 58.3 |
| | Client: Columbia University | Line Azimuth: 304 | Mean Velocity: 1511.81m/s |
| | Area: New Jersey | Sequence No 26 | Vessel Speed: 4.6 kts |
| | Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 1 Wind (kts): SW 14.7** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1:48 | 5:48 | 854 | 1 | 2.8 | 3.3 | 2.2 | 58.3 | 301.84 | 0 | SOL/FGSP |
| 2:20 | 6:20 | 1222 | 369 | ----- | ----- | ----- | ----- | ----- | ----- | Source Compressor Failure, Slowing down and changing to Mit gun. |
| 02:21 | 06:21 | 1233 | 380 | ----- | ----- | ----- | ----- | ----- | ----- | Mit gun ON, All other sources spared out |
| 02:26 | 06:26 | 1284 | 431 | ----- | ----- | ----- | ----- | ----- | ----- | Secondary Compresor ONLINE, Back to Full Power |
| 03:34 | 07:34 | 2057 | 1204 | 2.7 | 3.3 | 2.3 | 30.91 | 302.58 | 0 | |
| 4:05 | 8:05 | 2403 | 1550 | ----- | ----- | ----- | ----- | ----- | ----- | Source Power Down to Mitigation Gun for Compressor Switch / Repair |
| 4:16 | 8:16 | 2535 | 1682 | ----- | ----- | ----- | ----- | ----- | ----- | FGSP after source back to Full Power 700 in3 |
| 5:21 | 9:21 | 3258 | 2405 | 2.9 | 3.1 | 2.3 | 29.84 | 302.57 | 0 | |
| 6:55 | 10:55 | 4277 | 3424 | 3.1 | 3.4 | 2.4 | 32.21 | 306.05 | 1 | |
| 8:17 | 12:17 | 5137 | 4284 | 3.0 | 3.6 | 2.3 | 27.2 | 305.27 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 22.78 µBar |
| | | | | | | | | | | Peak RMS Noise: 77.00 µBar |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

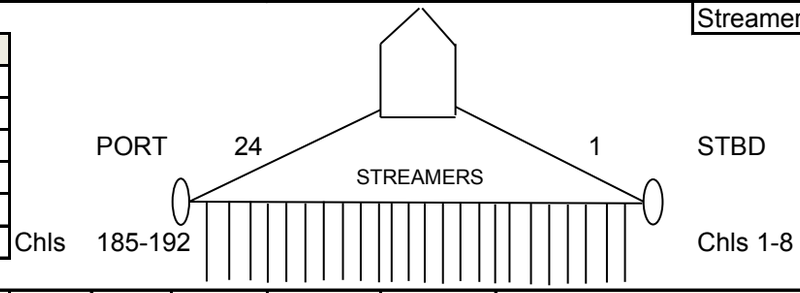
| | | |
|---|---|---|
| Date: 12-Jun-15 | Line Number: 2860R | Water Depth(m) 58.3 |
| Client: Columbia University | Line Azimuth: 304 | Mean Velocity: 1511.81m/s |
| Area: New Jersey | Sequence No 26 | Vessel Speed: 4.6 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 1 Wind (kts): SW 14.7** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: | 12-Jun-15 | Line Number: | 1708 | Water Depth(m) 21.4 |
| | Client: | Columbia University | Line Azimuth: | 124 | Mean Velocity: 1511.81m/s |
| | Area: | New Jersey | Sequence No | 27 | Vessel Speed: 4 4.8 kts |
| | Vessel: | R/V Marcus Langseth | Observers: | Ard/Koprowski | **Sea(m): 1 Wind (kts): SW 4.3** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 9:42 | 13:42 | 5147 | 1 | 2.9 | 3.4 | 2.3 | 21.4 | 120.95 | 0 | SOL/FGSP |
| 10:49 | 14:49 | 4370 | 778 | 2.9 | 3.4 | 2.3 | 30.54 | 124.79 | 1 | |
| 11:25 | 15:25 | 3977 | 1171 | 2.8 | 3.3 | 2.3 | 31.70 | 124.23 | 0 | |
| 12:52 | 16:52 | 3042 | 2106 | 2.7 | 3.3 | 2.3 | 28.9 | 126 | 0 | |
| 14:13 | 18:13 | 2200 | 2948 | 2.8 | 3.3 | 2.3 | 27.5 | 125.7 | 0 | |
| 15:22 | 19:22 | 1483 | 3665 | 2.9 | 3.4 | 2.3 | 48 | 123.5 | 1 | |
| 16:18 | 20:18 | 865 | 4283 | 3.0 | 3.5 | 2.4 | 57.5 | 124 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | 22.1 | Average RMS Noise: µBar |
| | | | | | | | | | 78.83 | Peak RMS Noise: 0 µBar |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

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|---|---|---|
| Date: 12-Jun-15 | Line Number: 1708 | Water Depth(m) 21.4 |
| Client: Columbia University | Line Azimuth: 124 | Mean Velocity: 1511.81m/s |
| Area: New Jersey | Sequence No 27 | Vessel Speed: 4 4.8 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 1 Wind (kts): SW 4.3** |

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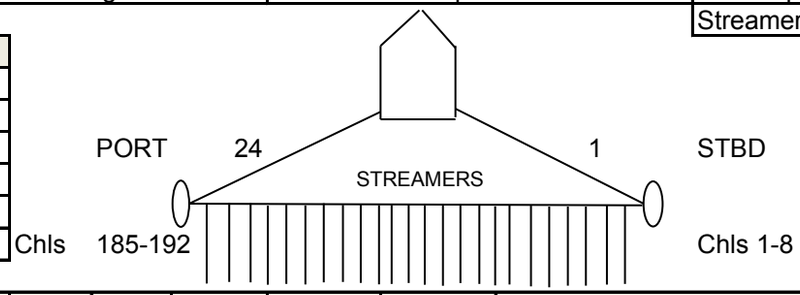
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 12-Jun-15 | Line Number: | 2572 | Water Depth(m) 54.1 | |
| | Client: Columbia University | Line Azimuth: | 304.4° | Mean Velocity: 1500m/s | |
| | Area: New Jersey | Sequence No | 28 | Vessel Speed: 4.3 kt | |
| | Vessel: R/V Marcus Langseth | Observers: | Ard/Koprowski | **Sea(m): 1 Wind (kts): S 20** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17:25 | 21:25 | 875 | 1 | 3.0 | 3.5 | 2.5 | 54.1 | 304 | 0 | SOL |
| 18:21 | 22:21 | 1477 | 603 | | | | | | | power down due to whale, mit gun only |
| 18:52 | 22:52 | 1795 | 921 | | | | | | | Full power (700in3) |
| 19:22 | 23:22 | 2114 | 1420 | 2.8 | 3.1 | 2.1 | 27.5 | 304.5 | 1 | |
| 20:31 | 00:31 | 2774 | 1 | | | | | | | Restart recording program, FGSP for line 2572 |
| 21:35 | 1:35 | 3424 | 651 | 2.5 | 3.2 | 2.0 | 29.51 | 303.5 | 0 | |
| 22:28 | 2:28 | 4001 | 1228 | 2.5 | 3.2 | 2.3 | 31 | 303.5 | 0 | |
| 23:15 | 3:13 | 4505 | 1732 | 2.9 | 3.5 | 2.4 | 26.5 | 305.5 | 1 | |
| 0:47 | 3:47 | 4901 | 2128 | ----- | ----- | ----- | ----- | ----- | ----- | |
| 0:49 | 3:49 | 4919 | 2146 | ----- | ----- | ----- | ----- | ----- | ----- | |
| 0:08 | 4:08 | 5137 | 2364 | 2.9 | 3.3 | 2.3 | 25.1 | 309.6 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 23.46 µBar |
| | | | | | | | | | | Peak RMS Noise: 87.00 µBar |
| | | | | | | | | | | |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

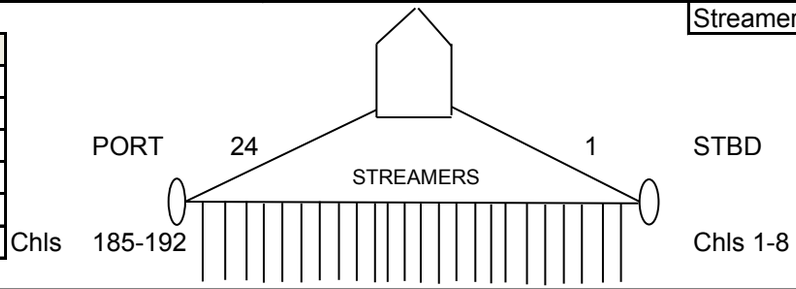
| | | |
|---|---|---|
| Date: 12-Jun-15 | Line Number: 2572 | Water Depth(m) 54.1 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 28 | Vessel Speed: 4.3 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 1 Wind (kts): S 20** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 13-Jun-15 | Line Number: 1852I | Water Depth(m) 21.2 | | |
| | Client: Columbia University | Line Azimuth: 124 | Mean Velocity: 1500m/s | | |
| | Area: New Jersey | Sequence No 29 | Vessel Speed: 4.3 kt | | |
| | Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 1 Wind (kts): SSW 17.1** | | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1:09 | 5:09 | 5129 | 1 | 3.3 | 3.7 | 2.5 | 21.2 | 132.80 | 1 | SOL / FGSP |
| 2:01 | 6:01 | 4610 | 520 | 3.5 | 4.0 | 2.2 | 25.66 | 132.10 | 0 | |
| 03:17 | 07:17 | 3860 | 1270 | 3.2 | 3.9 | 2.6 | 31.68 | 133.27 | 1 | |
| 04:09 | 08:09 | 3330 | 1800 | 3.1 | 3.5 | 2.2 | 30.48 | 129.8 | 0 | |
| 5:02 | 9:02 | 2772 | 2359 | 3.0 | 3.7 | 2.5 | 28.25 | 131.31 | 0 | |
| 6:03 | 10:03 | 2100 | 3030 | 3.0 | 3.7 | 2.6 | 27.20 | 127.99 | 0 | |
| 6:17 | 10:17 | 1944 | 3186 | 3.0 | 3.9 | 2.2 | 27.9 | 122.18 | 0 | EOL/LGSP |
| | | | | | | | | | | Average RMS Noise: 18.93 µBar |
| | | | | | | | | | | Peak RMS Noise: 63.42 µBar |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 13-Jun-15 | Line Number: 1852I | Water Depth(m) 21.2 |
| Client: Columbia University | Line Azimuth: 124 | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 29 | Vessel Speed: 4.3 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 1 Wind (kts): SSW 17.1** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

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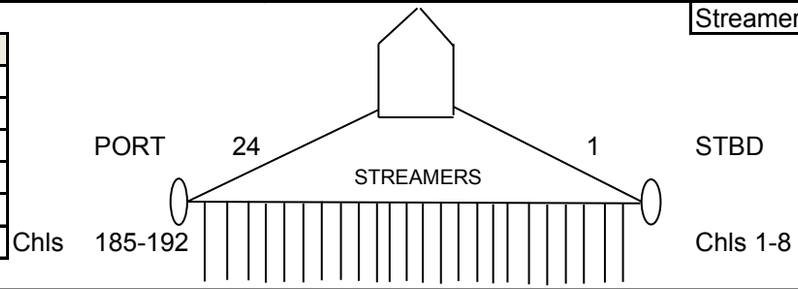
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 13-Jun-15 | Line Number: 2692R | Water Depth(m) 36.7 | | |
| | Client: Columbia University | Line Azimuth: 304 | Mean Velocity: 1500m/s | | |
| | Area: New Jersey | Sequence No 30 | Vessel Speed: 4.1 | | |
| | Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 1 Wind (kts): W 13.9** | | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 7:22 | 11:22 | 1913 | 1 | 2.9 | 3.5 | 2.3 | 36.7 | 302.9 | 1 | SOL / FGSP (Infill on Line - FSP) |
| 8:06 | 12:06 | 2350 | 438 | 3.0 | 3.6 | 2.4 | 27.10 | 304.04 | 0 | |
| 8:58 | 12:58 | 2864 | 952 | 3.7 | 4.6 | 2.7 | 27.11 | 308.86 | 0 | Slowing to 3.5 kts due to sailboat crossing |
| 9:08 | 13:08 | 2939 | 1087 | ----- | ----- | ----- | ----- | ----- | ----- | Returned to STW 4.5 kts |
| 10:02 | 14:02 | 3484 | 1572 | 2.9 | 3.5 | 2.5 | 28.10 | 309.03 | 1 | |
| 10:34 | 14:34 | 3818 | 1906 | ----- | ----- | ----- | ----- | ----- | ----- | Power Down (Source Off) |
| 10:34 | 14:34 | 3822 | 1910 | ----- | ----- | ----- | ----- | ----- | ----- | Power Down (Mitigation Gun - 40in3 ON) |
| 11:08 | 15:08 | 4185 | 2273 | ----- | ----- | ----- | ----- | ----- | ----- | Full Power (S1G4,6,7,9 - 700 in3) Online |
| 11:23 | 15:23 | 4333 | 2421 | 3.2 | 3.5 | 2.4 | 29 | 308.97 | 1 | |
| 11:49 | 15:49 | 4625 | 2713 | | | | | | | Power Down (Mitigation Gun - 40in3 ON) |
| 12:23 | 16:23 | 5004 | 3092 | | | | | | | Full Power (S1G4,6,7,9 - 700 in3) Online |
| 12:35 | 16:35 | 5139 | 3227 | 3.4 | 3.6 | 2.6 | 26.5 | 306 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | 19.88 | Average RMS Noise: µBar |
| | | | | | | | | | 69.03 | Peak RMS Noise: µBar |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

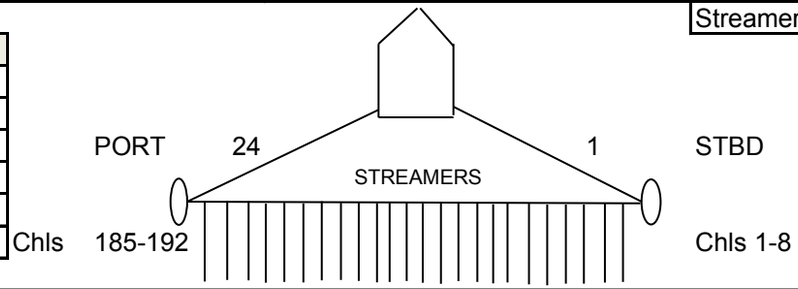
| | | |
|---|---|---|
| Date: 13-Jun-15 | Line Number: 2692R | Water Depth(m) 36.7 |
| Client: Columbia University | Line Azimuth: 304 | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 30 | Vessel Speed: 4.1 |
| Vessel: R/V Marcus Langseth | Observers: Ard/Koprowski | **Sea(m): 1 Wind (kts): W 13.9** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 13-Jun-15 | Line Number: 1684 | Water Depth(m): 23 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 31 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 0 Wind (kts): N 8** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 13:48 | 17:48 | 5125 | 1 | 2.8 | 3.4 | 2.4 | 23 | 124 | 0 | SOL/FGSP |
| 14:44 | 18:44 | 4526 | 600 | 3.0 | 3.4 | 2.2 | 26 | 124 | 0 | |
| 16:10 | 20:10 | 3626 | 1500 | 2.7 | 3.5 | 2.2 | 31 | 124 | 0 | |
| 17:48 | 21:48 | 2565 | 2561 | 2.9 | 3.4 | 2.3 | 30 | 124 | 0 | |
| 19:15 | 23:15 | 1594 | 3532 | 3.1 | 3.7 | 2.5 | 48 | 124 | 0 | |
| 20:19 | 00:19 | 865 | 4261 | | | | | 124 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 21.33 µBar |
| | | | | | | | | | | Peak RMS Noise: 76.89 µBar |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

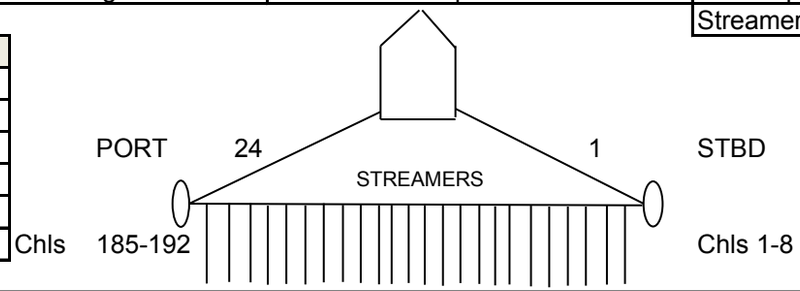
| | | |
|---|---|---|
| Date: 13-Jun-15 | Line Number: 1684 | Water Depth(m): 23 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 31 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 0 Wind (kts): N 8** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 14-Jun-15 | Line Number: 2548 | Water Depth(m): 52 |
| Client: Columbia University | Line Azimuth: 304 | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 32 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0 Wind (kts): E 8** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 21:26 | 01:26 | 885 | 1 | 3.1 | 3.9 | 2.6 | 54 | 304 | 0 | SOL/FGSP |
| 22:39 | 02:37 | 1634 | 750 | 3.2 | 3.7 | 2.5 | 32 | 304 | 0 | |
| 23:54 | 03:54 | 2450 | 1566 | 3.1 | 3.4 | 2.3 | 27.63 | 307.4 | 0 | |
| 00:43 | 04:43 | 3007 | 2123 | 2.9 | 3.4 | 2.2 | 27.01 | 309.54 | 0 | |
| 03:30 | 07:30 | 4949 | 4065 | 3 | 3.6 | 2.3 | 28.97 | 306.15 | 0 | |
| 3:46 | 7:46 | 5137 | 4253 | 2.9 | 3.7 | 2.3 | 25.6 | 306..6 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 20.40 µBar |
| | | | | | | | | | | Peak RMS Noise: 73.93 µBar |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 14-Jun-15 | Line Number: 2548 | Water Depth(m): 52 |
| Client: Columbia University | Line Azimuth: 304 | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 32 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0 Wind (kts): E 8** |

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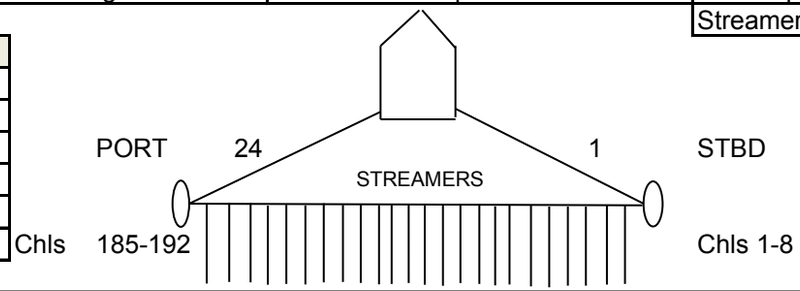
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| Date: | 14-Jun-15 | Line Number: | 1660 | Water Depth(m) | 22.7 |
| Client: | Columbia University | Line Azimuth: | 124 | Mean Velocity: | 1500m/s |
| Area: | New Jersey | Sequence No | 33 | Vessel Speed: | 4 4.4 |
| Vessel: | R/V Marcus Langseth | Observers: | Ard / Curtis / Koprowski | **Sea(m): 0.5 Wind (kts): SW 2.5** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 4:54 | 8:54 | 5145 | 1 | 3.2 | 3.6 | 2.3 | 22.7 | 124.58 | 0 | SOL/FGSP |
| 6:04 | 10:04 | 4396 | 750 | 2.9 | 3.6 | 2.3 | 28.69 | 122.97 | 0 | |
| 06:27 | 10:27 | 4144 | 1002 | ----- | ----- | ----- | ----- | ----- | ----- | Power Down due to Whales - OFF |
| 06:28 | 10:28 | 4132 | 1014 | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun 40in3 - ON |
| 06:30 | 10:30 | 4098 | 1048 | ----- | ----- | ----- | ----- | ----- | ----- | Power OFF - No Sound in water due to Whale |
| 7:11 | 11:11 | 3661 | 1485 | ----- | ----- | ----- | ----- | ----- | ----- | Start Ramp-Up Soft start |
| 7:41 | 11:41 | 3350 | 1796 | 3.1 | 3.9 | 2.5 | 27.79 | 120.25 | 0 | Ramp up Complete - Full Power 700in3 FGSP |
| 8:19 | 12:19 | 2951 | 2195 | ----- | ----- | ----- | ----- | ----- | ----- | GeoEel stops writing to log |
| 8:19 | 12:19 | 2947 | 2199 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP - before system lockup |
| 8:58 | 12:58 | | | ----- | ----- | ----- | ----- | ----- | ----- | System Reboot |
| 9:07 | 13:07 | | | ----- | ----- | ----- | ----- | ----- | ----- | Controller Restarted |
| 9:09 | 13:09 | 2377 | 2 | ----- | ----- | ----- | ----- | ----- | ----- | GeoEel Controller Online - LN# 1660A FGSP |
| 9:36 | 13:36 | 2080 | 299 | 3.2 | 3.7 | 2.4 | 27.48 | 119.54 | 1 | |
| 9:36 | 13:36 | 2074 | | ----- | ----- | ----- | ----- | ----- | ----- | Power Down for Turtles |
| 9:37 | 13:37 | 2069 | | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun 40in3 - ON |

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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

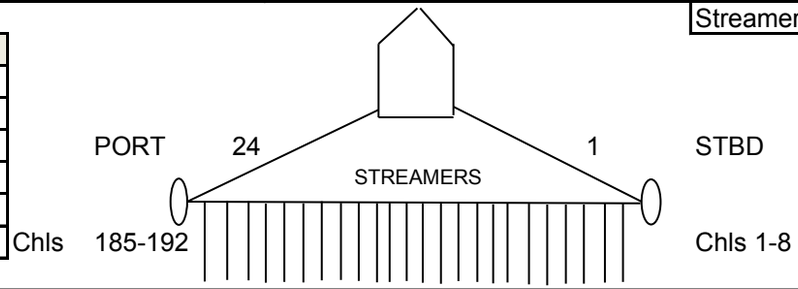
| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date: 14-Jun-15 | | | Line Number: 1660 | | | | | | | Water Depth(m) 22.7 |
| Client: Columbia University | | | Line Azimuth: 124 | | | | | | | Mean Velocity: 1500m/s |
| Area: New Jersey | | | Sequence No 33 | | | | | | | Vessel Speed: 4 4.4 |
| Vessel: R/V Marcus Langseth | | | Observers: Ard / Curtis / Koprowski | | | | | | | **Sea(m): 0.5 Wind (kts): SW 2.5** |
| 9:45 | 13:45 | 1974 | | ----- | ----- | ----- | ----- | ----- | ----- | Full Source - 700in3 |
| 10:10 | 14:10 | 1690 | | ----- | ----- | ----- | ----- | ----- | ----- | Power Down for Turtles |
| 10:11 | 14:11 | 1686 | | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun 40in3 - ON |
| 10:17 | 14:17 | 1614 | 765 | ----- | ----- | ----- | ----- | ----- | ----- | Full Source - 700in3 |
| 10:18 | 14:18 | 1601 | 798 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP - before system lockup |
| 10:37 | 14:37 | 1376 | | ----- | ----- | ----- | ----- | ----- | ----- | Power Down for Turtles |
| 10:38 | 14:38 | 1373 | | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun 40in3 - ON |
| 10:41 | 14:41 | 1347 | 2 | ----- | ----- | ----- | ----- | ----- | ----- | GeoEel Controller Online - LN# 1660B FGSP |
| 10:45 | 14:45 | 1294 | | ----- | ----- | ----- | ----- | ----- | ----- | Full Source - 700in3 |
| 10:50 | 14:50 | 1233 | 116 | ----- | ----- | ----- | ----- | ----- | ----- | Power Down for Turtles |
| 10:51 | 14:51 | 1230 | 119 | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun 40in3 - ON |
| 10:53 | 14:53 | 1203 | 146 | ----- | ----- | ----- | ----- | ----- | ----- | Power OFF - No Sound in water due to Turtle |
| 10:56 | 14:56 | 1172 | 177 | ----- | ----- | ----- | ----- | ----- | ----- | Full Source - 700in3 |
| 11:05 | 15:05 | 1065 | 284 | 3.0 | 3.3 | 2.3 | 50.02 | 119.22 | 0 | |
| 11:13 | 15:13 | 969 | 380 | ----- | ----- | ----- | ----- | ----- | ----- | Power Down for Turtles |
| 11:14 | 15:14 | 966 | 383 | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun 40in3 - ON |
| 11:18 | 15:18 | 911 | 438 | 2.9 | 3.4 | 2.3 | 52.2 | 124.1 | 0 | EOL/LGSP |
| Due to multiple powerdowns all data from 1690 to EOL is Not To Be Processed | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 25.17 µBar |
| | | | | | | | | | | Peak RMS Noise: 80.25 µBar |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| | Date: 14-Jun-15 | Line Number: | 2572R | Water Depth(m): | 29 |
| | Client: Columbia University | Line Azimuth: | 304 | Mean Velocity: | 1500m/s |
| | Area: New Jersey | Sequence No | 34 | Vessel Speed: | 4.0 kt |
| | Vessel: R/V Marcus Langseth | Observers: | Ard / Curtis / Koprowski | **Sea(m): 0 Wind (kts): E 3** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | |
|---|---|
| Reference Point: | Stern |
| CRP to Stern: | -30.67 m |
| Stern to Stbd Paravane: | 325 m |
| Stern to Port Paravane: | 315 m |
| Spread (strmr 1 to 24): | 287.5 m |
| Stern to Source: | 275 m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:45 | 16:45 | 961 | 1 | 4.1 | 5.3 | 3.3 | 51 | 304 | 0 | SOL/FGSP |
| 13:10 | 17:10 | 1239 | 279 | | | | | | | Power down to 40 in3 for turtles |
| 13:18 | 17:18 | 1330 | 370 | | | | | | | Full volume restored to 700 in3 |
| 13:27 | 17:27 | 1435 | 475 | | | | | | | Power down to 40 in3 for turtles |
| 13:40 | 17:40 | 1581 | 621 | | | | | | | Full volume restored to 700 in3 |
| 13:56 | 17:56 | 1773 | 813 | | | | | | | Power down to 40 in3 for dolphins |
| 14:09 | 18:09 | 1918 | 958 | | | | | | | Full volume restored to 700 in3 |
| 14:59 | 18:59 | 2482 | 1522 | | | | | | | Power down to 40 in3 for turtles |
| 15:11 | 19:11 | 2620 | 1660 | | | | | | | Full volume restored to 700 in3 |
| 15:32 | 19:32 | 2864 | 1904 | | | | | | | Power down to 40 in3 for turtles |
| 15:38 | 19:38 | 2922 | 1962 | | | | | | | Full volume restored to 700 in3 |
| 18:52 | 22:52 | 5137 | 4177 | | | | | | | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 36.4 µBar |
| | | | | | | | | | | Peak RMS Noise: 114.98 µBar |

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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 14-Jun-15 | Line Number: 2572R | Water Depth(m): 29 |
| Client: Columbia University | Line Azimuth: 304 | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 34 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0 Wind (kts): E 3** |

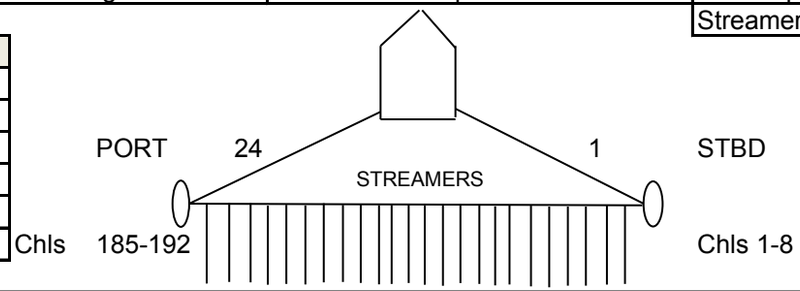
The recording computer had the wrong local time for this line.

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 15-Jun-15 | Line Number: 1635 | Water Depth(m): 25 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 35 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis Koprowski | **Sea(m): 0.5 Wind (kts): SE 10** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 20:08 | 00:08 | 5130 | 1 | 3.4 | 4.3 | 2.7 | 24.2 | 124 | 0 | SOL/FGSP |
| 21:06 | 01:06 | 4465 | 666 | 3.0 | 3.7 | 2.4 | | 124 | 0 | |
| 22:01 | 02:01 | 3831 | 1300 | 3.1 | 3.7 | 2.5 | 32 | 124 | 0 | |
| 23:29 | 03:09 | 3031 | 2100 | 3.1 | 3.8 | 2.5 | 31 | 124 | 0 | |
| 23:59 | 03:59 | 2446 | 2685 | 3.1 | 4 | 2.4 | 21.25 | 121.92 | 0 | |
| 2:04 | 6:04 | 1082 | 4049 | 2.9 | 3.7 | 2.4 | 49.63 | 125.32 | 0 | |
| 2:25 | 6:25 | 865 | 4266 | 2.9 | 3.6 | 2.2 | 53.9 | 124.14 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 35.95 µBar |
| | | | | | | | | | | Peak RMS Noise: 128.57 µBar |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

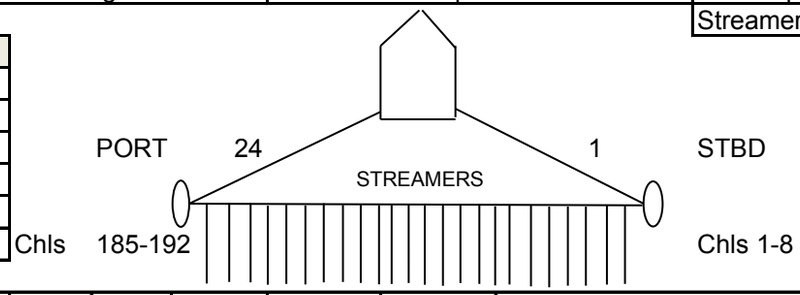
| | | |
|---|---|---|
| Date: 15-Jun-15 | Line Number: 1635 | Water Depth(m): 25 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 35 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis Koprowski | **Sea(m): 0.5 Wind (kts): SE 10** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| Date: | 15-Jun-15 | Line Number: | 2524 | Water Depth(m): | 54.5 |
| Client: | Columbia University | Line Azimuth: | 304 | Mean Velocity: | 1500m/s |
| Area: | New Jersey | Sequence No | 36 | Vessel Speed (kts): | 4.4 |
| Vessel: | R/V Marcus Langseth | Observers: | Ard / Curtis Koprowski | **Sea(m) / Wind (kts):** | **0 / SE 5.3** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 3:32 | 7:32 | 860 | 1 | 2.8 | 3.6 | 2.3 | 54.5 | 306.09 | 0 | SOL/FGSP |
| 4:34 | 8:34 | 1573 | 714 | 2.9 | 3.4 | 2.5 | 33.92 | 302.33 | 10 | |
| 05:58 | 09:58 | 2493 | 1634 | 3.3 | 4.1 | 2.6 | 29.52 | 303.01 | 1 | |
| 06:48 | 10:48 | 3069 | 2210 | 3 | 4 | 2.6 | 28.21 | 302.58 | 0 | |
| 07:41 | 11:41 | 3654 | 2795 | 3.1 | 3.7 | 2.6 | 29.93 | 303.83 | 1 | |
| 9:01 | 13:01 | 4503 | 3644 | 3.2 | 3.5 | 2.5 | 28.16 | 302.41 | 1 | |
| 10:02 | 14:02 | 5137 | 4278 | 2.8 | 3.6 | 2.4 | 25.4 | 300.3 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 36.88 µBar |
| | | | | | | | | | | Peak RMS Noise: 123.38 µBar |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | |
|---|---|---|---|
| Date: 15-Jun-15 | Line Number: 2524 | Water Depth(m): | 54.5 |
| Client: Columbia University | Line Azimuth: 304 | Mean Velocity: | 1500m/s |
| Area: New Jersey | Sequence No 36 | Vessel Speed (kts): | 4.4 |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis Koprowski | **Sea(m) / Wind (kts):** | **0 / SE 5.3** |

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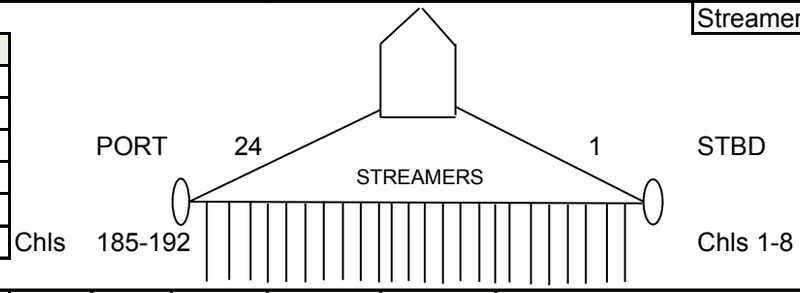
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| Date: | 15-Jun-15 | Line Number: | 1612 | Water Depth(m): | 22.4 |
| Client: | Columbia University | Line Azimuth: | 124 | Mean Velocity: | 1500m/s |
| Area: | New Jersey | Sequence No | 37 | Vessel Speed (kts): | 4.4 |
| Vessel: | R/V Marcus Langseth | Observers: | Ard / Curtis Koprowski | **Sea(m) / Wind (kts):** | **0.5/ SSW 12.6** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 11:10 | 15:10 | 5142 | 1 | 3.2 | 3.6 | 2.3 | 22.4 | 130.8 | 0 | SOL/FGSP |
| 12:05 | 16:05 | 4520 | 623 | 3.1 | 4.0 | 2.6 | 25.5 | 125.8 | 1 | |
| 12:52 | 16:52 | 3991 | 1152 | 3.1 | 3.9 | 2.6 | 30 | 125.6 | 1 | |
| 13:38 | 17:38 | 3491 | 1652 | 3.1 | 4.1 | 2.8 | 30 | 124.5 | 1 | |
| 14:27 | 18:27 | 2991 | 2152 | 3.2 | 4 | 2.6 | 29.5 | 125.4 | 0 | |
| 15:20 | 19:20 | 2491 | 2652 | 3.0 | 3.8 | 2.4 | 32 | 125.4 | 1 | |
| 16:20 | 20:20 | 1926 | 3217 | 3.1 | 3.6 | 2.4 | 29.5 | 126 | 0 | |
| 17:21 | 21:21 | 1327 | 3816 | 3.0 | 3.9 | 2.4 | 50 | 125.5 | 0 | |
| | 22:08 | 865 | 4278 | 3.3 | 3.7 | 2.5 | 54.4 | 124 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | 36.33 | Average RMS Noise: µBar |
| | | | | | | | | | 123.71 | Peak RMS Noise: µBar |
| | | | | | | | | | | |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

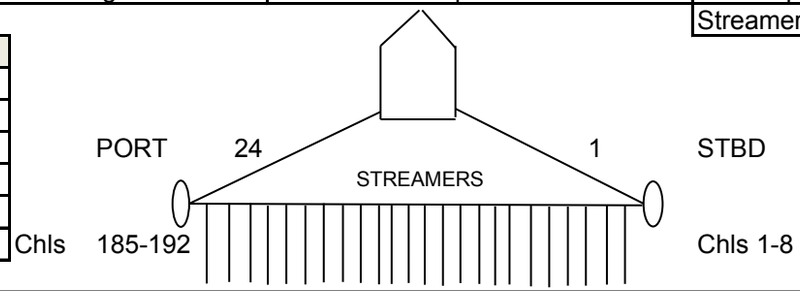
| | | | |
|---|---|---|---|
| Date: 15-Jun-15 | Line Number: 1612 | Water Depth(m): | 22.4 |
| Client: Columbia University | Line Azimuth: 124 | Mean Velocity: | 1500m/s |
| Area: New Jersey | Sequence No 37 | Vessel Speed (kts): | 4.4 |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis Koprowski | **Sea(m) / Wind (kts):** | **0.5/ SSW 12.6** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 15-Jun-15 | Line Number: 2500 | Water Depth(m): 53.7 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 38 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m):1 Wind (kts): S 7** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 19:17 | 23:17 | 872 | 1 | 2.7 | 3.2 | 2.3 | 53.7 | 305 | 1 | SOL/FGSP |
| 19:34 | 23:34 | 1077 | | ----- | ----- | ----- | ----- | ----- | ----- | Missed shot/file (206) serial string not detected |
| 19:35 | 23:35 | 1078 | 207 | ----- | ----- | ----- | ----- | ----- | ----- | Missed shot |
| 21:01 | 1:01 | 2048 | 1176 | 2.7 | 3.2 | 2.6 | 30.5 | 303.5 | 0 | |
| 21:48 | 1:48 | 2539 | 1667 | ----- | ----- | ----- | ----- | ----- | ----- | looks weird |
| 22:07 | 2:07 | 2736 | 1863 | ----- | ----- | ----- | ----- | ----- | ----- | Delta errors S1G7 |
| 22:11 | 2:11 | 2785 | 1912 | ----- | ----- | ----- | ----- | ----- | ----- | Delta errors S1G7 |
| 22:19 | 2:19 | 2859 | 1986 | ----- | ----- | ----- | ----- | ----- | ----- | Delta errors S1G7 |
| 22:19 | 2:19 | 2860 | 1987 | ----- | ----- | ----- | ----- | ----- | ----- | Delta errors S1G7 |
| 22:24 | 2:24 | 2914 | 2042 | ----- | ----- | ----- | ----- | ----- | ----- | Delta errors S1G7 |
| 22:25 | 2:25 | 2918 | 2046 | ----- | ----- | ----- | ----- | ----- | ----- | Delta errors S1G7 |
| 22:25 | 2:25 | 2928 | 2056 | ----- | ----- | ----- | ----- | ----- | ----- | Delta errors S1G7 |
| 22:30 | 2:30 | 2972 | 2099 | ----- | ----- | ----- | ----- | ----- | ----- | Delta errors S1G7 |
| 22:33 | 2:33 | 3007 | 2135 | ----- | ----- | ----- | ----- | ----- | ----- | Turned off Gun07 and enabled Gun03 (620in3) |
| 22:40 | 2:40 | 3077 | 2204 | ----- | ----- | ----- | ----- | ----- | ----- | Turned off Gun03 |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| Date: 15-Jun-15 | Line Number: 2500 | Water Depth(m): 53.7 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 38 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m):1 Wind (kts): S 7** |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0:02 | 4:02 | 3701 | 2785 | ----- | ----- | ----- | ----- | ----- | ----- | FGSP @ 700in3 |
| 0:27 | 4:27 | 3953 | 3037 | 3.0 | 3.9 | 2.5 | 39.00 | 312.36 | 0 | |
| 1:54 | 5:54 | 4820 | 3904 | 3.1 | 4.0 | 2.6 | 27.18 | 310.90 | 0 | |
| 2:25 | 6:25 | 5137 | 4221 | 3.1 | 3.7 | 2.4 | 24.8 | 312.1 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 38.45 µBar |
| | | | | | | | | | | Peak RMS Noise: 123.54 µBar |

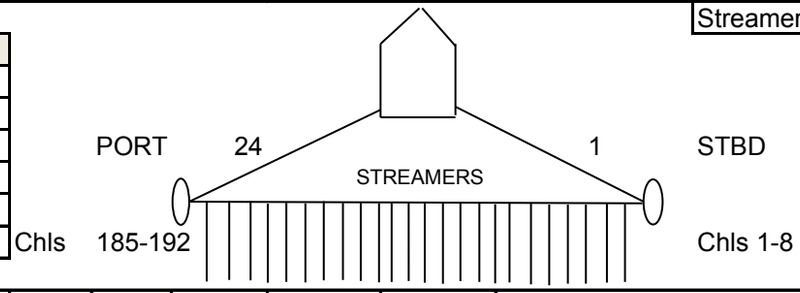
| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | |
|---|---|---|---|---|
| | Date: 15-Jun-15 | Line Number: | 2500 | Water Depth(m): 53.7 |
| | Client: Columbia University | Line Azimuth: | 304.4° | Mean Velocity: 1500m/s |
| | Area: New Jersey | Sequence No | 38 | Vessel Speed: 4.0 kt |
| | Vessel: R/V Marcus Langseth | Observers: | Ard / Curtis / Koprowski | **Sea(m):1 Wind (kts): S 7** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| Date: | 16-Jun-15 | Line Number: | 1588 | Water Depth(m): | 22 |
| Client: | Columbia University | Line Azimuth: | 124° | Mean Velocity: | 1500m/s |
| Area: | New Jersey | Sequence No | 39 | Vessel Speed: | 4.5 kts |
| Vessel: | R/V Marcus Langseth | Observers: | Ard / Curtis / Koprowski | **Sea(m): 0.5** | **Wind (kts): NNE 14.8** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 03:33 | 07:33 | 5147 | 1 | 2.8 | 3.4 | 2.2 | 22 | 121 | 0 | SOL/FGSP |
| 04:53 | 08:53 | 4278 | 870 | 2.7 | 3.4 | 2.3 | 28.97 | 122.67 | 1 | |
| 05:49 | 09:49 | 3688 | 1460 | 2.8 | 3.5 | 2.3 | 30.31 | 121.03 | 0 | |
| 6:45 | 10:45 | 3114 | 2034 | 2.8 | 3.1 | 2.3 | 31.47 | 124.53 | 0 | |
| 8:06 | 12:03 | 2282 | 2866 | 2.8 | 3.5 | 2.3 | 28.45 | 126 | 0 | |
| 9:20 | 13:20 | 1406 | 3742 | 2.8 | 3.6 | 2.3 | 48.59 | 126.25 | 0 | |
| 9:49 | 13:49 | 1081 | 4067 | ----- | ----- | ----- | ----- | ----- | ----- | Power Down for Turtle |
| 9:49 | 13:49 | 1076 | 4072 | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun - 40in3 ON |
| 9:55 | 13:55 | 1014 | 4134 | ----- | ----- | ----- | ----- | ----- | ----- | Full Power on Source - 700in3 FGSP |
| 10:08 | 14:08 | 865 | 4283 | 3.1 | 3.8 | 2.5 | 53.5 | 125.2 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 40.86 µBar |
| | | | | | | | | | | Peak RMS Noise: 136.44 µBar |
| | | | | | | | | | | |
| | | | | | | | | | | |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 16-Jun-15 | Line Number: 1588 | Water Depth(m): 22 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 39 | Vessel Speed: 4.5 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0.5 Wind (kts): NNE 14.8** |

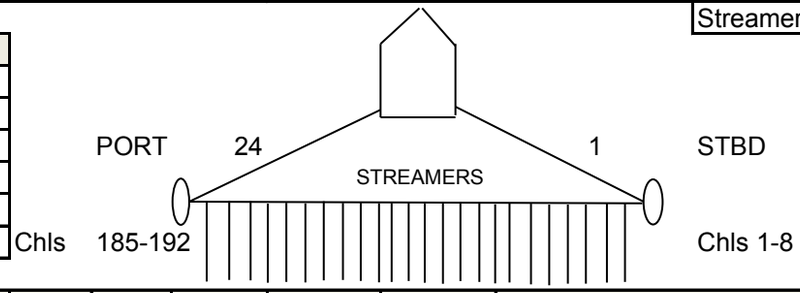
| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | |
|---|---|---|---|---|---|---|
| | Date: | 16-Jun-15 | Line Number: | 1588 | Water Depth(m): | 22 |
| | Client: | Columbia University | Line Azimuth: | 124° | Mean Velocity: | 1500m/s |
| | Area: | New Jersey | Sequence No | 39 | Vessel Speed: | 4.5 kts |
| | Vessel: | R/V Marcus Langseth | Observers: | Ard / Curtis / Koprowski | **Sea(m): 0.5** | **Wind (kts): NNE 14.8** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 16-Jun-15 | Line Number: 2476 | Water Depth(m): 53.4 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 40 | Vessel Speed: 4.3 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0.5 Wind (kts): SSW 9** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 11:57 | 15:57 | 858 | 1 | 2.8 | 3.2 | 2.4 | 53.4 | 308 | 1 | SOL/FGSP |
| 12:49 | 16:49 | 1434 | 577 | 2.9 | 3.6 | 2 | 30.5 | 305 | 0 | |
| 13:36 | 17:36 | 1934 | 1077 | 2.6 | 3.1 | 2.5 | 31 | 305.5 | 1 | |
| 13:42 | 17:42 | 2002 | 1145 | | | | | | | Power down for turtle |
| 13:48 | 17:48 | 2075 | 1218 | | | | | | | Full volume (700in3) |
| 14:19 | 18:19 | 2434 | 1577 | 2.7 | 3.1 | 2 | 27 | 305 | 0 | |
| 15:02 | 19:02 | 2934 | 2077 | 2.9 | 3.3 | 2 | 27 | 305 | 1 | |
| 15:52 | 19:52 | 3509 | 2652 | 2.8 | 3.5 | 2.3 | 28.5 | 305 | 0 | |
| 16:48 | 20:48 | 4156 | 3299 | 2.6 | 3.7 | 2.2 | 29 | 306 | 0 | |
| 17:31 | 21:31 | 4656 | 3799 | 3 | 3.6 | 2.5 | 29.5 | 305 | 0 | |
| 18:13 | 22:13 | 5137 | 4280 | 3.1 | 3.4 | 2.2 | 25.8 | 305 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 40.24 µBar |
| | | | | | | | | | | Peak RMS Noise: 136.00 µBar |
| | | | | | | | | | | |

NCS SubSea
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 16-Jun-15 | Line Number: 2476 | Water Depth(m): 53.4 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 40 | Vessel Speed: 4.3 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0.5 Wind (kts): SSW 9** |

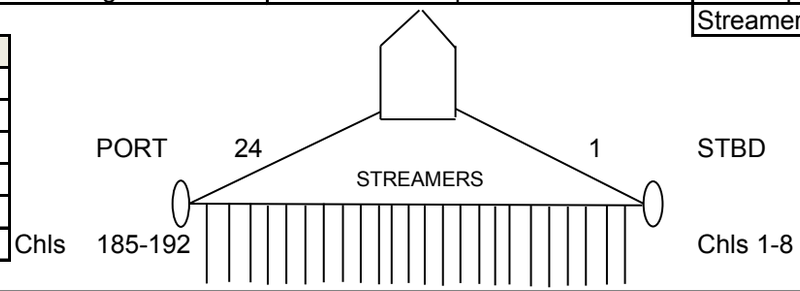
| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | |
|---|---|---|---|
| | Date: 16-Jun-15 | Line Number: 2476 | Water Depth(m): 53.4 |
| | Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1500m/s |
| | Area: New Jersey | Sequence No 40 | Vessel Speed: 4.3 kts |
| | Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0.5 Wind (kts): SSW 9** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 16-Jun-15 | Line Number: 1564 | Water Depth(m): 25 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 41 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m):0.5 Wind (kts): NE 1.5** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 19:23 | 23:23 | 5102 | 1 | 2.9 | 3.5 | 2.4 | 25 | 124.7 | 0 | SOL/FGSP |
| 20:21 | 00:21 | 4462 | 641 | 2.9 | 3.8 | 2.2 | 26.5 | 124.5 | 0 | |
| 21:23 | 01:23 | 3752 | 1351 | 2.9 | 3.5 | 2.6 | 31.5 | 126.5 | 0 | |
| 22:07 | 2:07 | 3252 | 1851 | 2.8 | 3.5 | 2.5 | 30 | 125 | 0 | |
| 22:49 | 2:49 | 2752 | 2351 | 3.0 | 3.4 | 2.3 | 27.5 | 125.5 | 0 | |
| 23:31 | 3:31 | 2252 | 2851 | 3.1 | 4.0 | 2.5 | 27.5 | 125 | 0 | |
| 0:50 | 4:50 | 1346 | 3757 | 3.1 | 3.6 | 2.5 | 50.24 | 119.44 | 0 | |
| 1:32 | 5:32 | 864 | 4239 | 3.0 | 3.9 | 2.5 | 54.7 | 117.7 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 37.46 µBar |
| | | | | | | | | | | Peak RMS Noise: 127.10 µBar |
| | | | | | | | | | | |
| | | | | | | | | | | |
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NCS SubSea
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

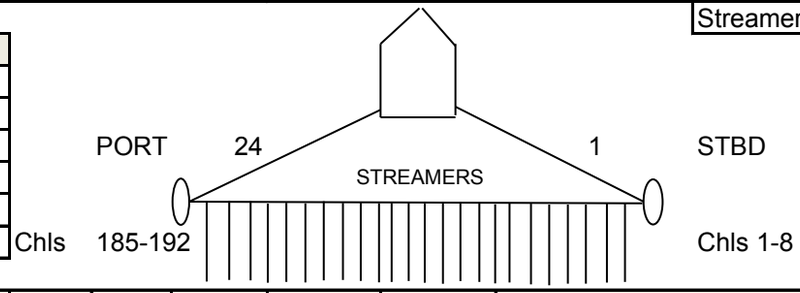
| | | |
|---|---|---|
| Date: 16-Jun-15 | Line Number: 1564 | Water Depth(m): 25 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 41 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m):0.5 Wind (kts): NE 1.5** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 17-Jun-15 | Line Number: 2452 | Water Depth(m): 53.8 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 42 | Vessel Speed: 4.4 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski | **Sea(m): 0.5 Wind (kts): NW 11.5** |

| **Recording System:** | | **Source:** | |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 02:40 | 06:40 | 857 | 1 | 3 | 3.3 | 2.1 | 53.8 | 314.1 | 1 | SOL/FGSP |
| 03:49 | 07:49 | 1616 | 760 | 2.9 | 3.6 | 2.4 | 31.87 | 311.2 | 0 | |
| 04:50 | 8:50 | 2325 | 1469 | 3.2 | 3.8 | 2.4 | 29.33 | 311.01 | 0 | |
| 5:38 | 9:38 | 2882 | 2026 | 3.1 | 3.7 | 2.5 | 27.86 | 311.00 | 0 | |
| 8:06 | 12:06 | 4545 | 3689 | 3.1 | 3.9 | 2.3 | 27.60 | 309.41 | 1 | |
| 9:01 | 13:01 | 5136 | 4280 | 3.2 | 3.8 | 2.5 | 25.5 | 310.8 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 37.05 µBar |
| | | | | | | | | | | Peak RMS Noise: 128.62 µBar |
| | | | | | | | | | | |
| | | | | | | | | | | |
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NCS SubSea
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

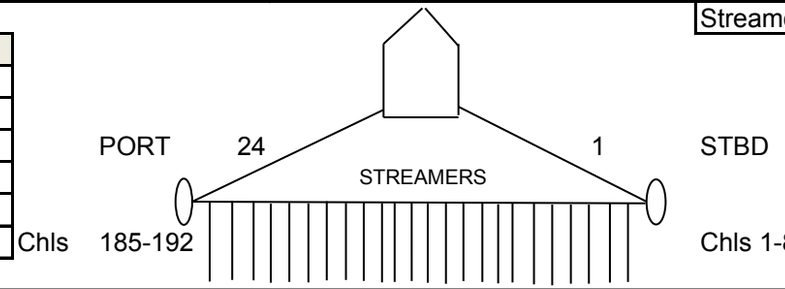
| | | |
|---|---|---|
| Date: 17-Jun-15 | Line Number: 2452 | Water Depth(m): 53.8 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 42 | Vessel Speed: 4.4 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski | **Sea(m): 0.5 Wind (kts): NW 11.5** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| Date: | 17-Jun-15 | Line Number: | 1540 | Water Depth(m): | 23.2 |
| Client: | Columbia University | Line Azimuth: | 124° | Mean Velocity: | 1500m/s |
| Area: | New Jersey | Sequence No | 43 | Vessel Speed: | 4.4 kts |
| Vessel: | R/V Marcus Langseth | Observers: | Ard / Koprowski | **Sea(m): 0.5 Wind (kts): NNE 20.1** | |

| **Recording System:** | | **Source:** | |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:09 | 14:09 | 5140 | 1 | 3 | 3.8 | 2.4 | 23.2 | 120.4 | 0 | SOL/FGSP |
| 11:02 | 15:02 | 4520 | 621 | 3 | 3.6 | 2.5 | 26.3 | 117.7 | 0 | |
| 11:38 | 15:38 | 4106 | 1035 | 2.9 | 3.6 | 2.3 | 32.16 | 116.18 | 1 | |
| 12:20 | 16:20 | 3606 | 1535 | 3.1 | 3.6 | 2.3 | 34 | 115.5 | 0 | |
| 13:03 | 17:03 | 3106 | 2035 | 2.9 | 3.5 | 2.4 | 30 | 110.75 | 1 | |
| 13:59 | 17:59 | 2470 | 2671 | 3.0 | 3.6 | 2.3 | 31.5 | 110.1 | 1 | |
| 14:43 | 18:43 | 1988 | | | | | | | | Missed shot |
| 15:21 | 19:21 | 1573 | 3567 | 2.6 | 3.5 | 2.4 | 48 | 117 | 0 | |
| | 19:49 | 1290 | 3850 | | | | | | LGSP | Start gun double pop/ Do not process after this shot |
| 16:31 | 20:31 | 865 | 4275 | 3.0 | 3.2 | 2.4 | 54.4 | 118 | 0 | EOL |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise:41.75 µBar |
| | | | | | | | | | | Peak RMS Noise: 136.89 µBar |
| | | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

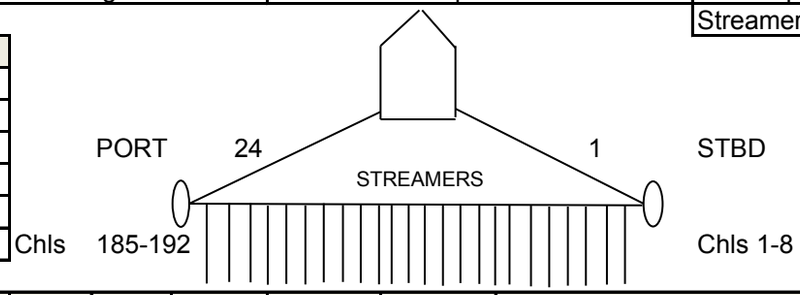
| | | |
|---|---|---|
| Date: 17-Jun-15 | Line Number: 1540 | Water Depth(m): 23.2 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 43 | Vessel Speed: 4.4 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski | **Sea(m): 0.5 Wind (kts): NNE 20.1** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 17-Jun-15 | Line Number: 2428 | Water Depth(m): 53.6 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 44 | Vessel Speed: 4.0 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1 Wind (kts): E 12** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17:41 | 21:41 | 863 | 1 | 3.4 | 3.7 | 2.5 | 53.6 | 307 | 0 | SOL |
| 18:25 | 22:25 | 1363 | 501 | 3.3 | 3.8 | 2.2 | 38 | 306 | 1 | |
| 19:16 | 23:16 | 1962 | 1100 | 3.2 | 3.6 | 2.8 | 31.5 | 305 | 0 | |
| | | | 1404 | | | | | | | Issue noticed in p-cable graph |
| | 23:53 | 2391 | 1529 | | | | | | | Started troubleshooting gun issues |
| | Do not process from start of line / Gun double fired from beginning of line, GFSP 2413 | | | | | | | | | |
| | 23:55 | 2413 | 1551 | | | | | | | FGSP after troubleshooting |
| 20:48 | 00:48 | 3032 | 2170 | 3.3 | 3.9 | 2.6 | 28.5 | 305 | 0 | |
| 21:33 | 1:33 | 3532 | 2670 | | | | | | | |
| 22:24 | 2:24 | 4069 | 3207 | 3.2 | 3.7 | 2.4 | 31.5 | 305 | 0 | |
| 23:11 | 3:11 | 4569 | 3707 | | | | | | | |
| 23:59 | 3:59 | 5069 | 4207 | | | | | | | |
| 0:09 | 4:06 | 5137 | 4275 | 3.0 | 3.5 | 2.4 | 25.4 | 304.6 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 37.87 µBar |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 17-Jun-15 | Line Number: 2428 | Water Depth(m): 53.6 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 44 | Vessel Speed: 4.0 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1 Wind (kts): E 12** |

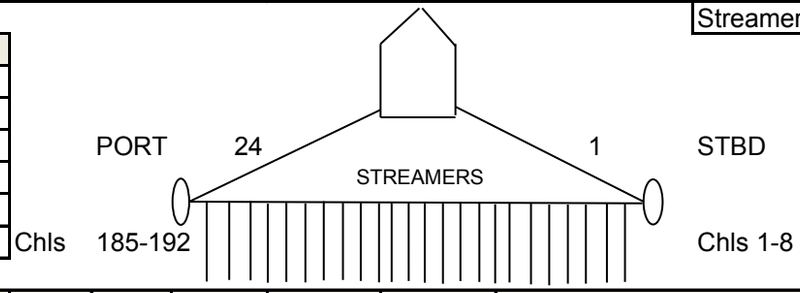
Peak RMS Noise: 131.46 µBar

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 18-Jun-15 | Line Number: 1516 | Water Depth(m): 22.6 | | |
| | Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s | | |
| | Area: New Jersey | Sequence No 45 | Vessel Speed: 4.5 kts | | |
| | Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski | **Sea(m): 0.5 Wind (kts): ESE 8.2** | | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 01:24 | 05:24 | 5147 | 1 | 3.2 | 4.2 | 2.7 | 22.6 | 126.5 | 0 | SOL/FGSP |
| 02:30 | 06:30 | 4418 | 730 | 3.2 | 4 | 2.2 | 26.59 | 123.2 | 0 | |
| 03:42 | 07:42 | 3630 | 1518 | 3.1 | 3.9 | 2.4 | 34.01 | 119.91 | 0 | |
| 04:44 | 08:44 | 2974 | 2174 | 3.4 | 4.2 | 2.8 | 29.88 | 118.05 | 0 | |
| 05:47 | 09:47 | 2350 | 2798 | 3 | 3.7 | 2.2 | 19.32 | 117.98 | 0 | |
| 6:56 | 10:56 | 1636 | 3512 | 3.1 | 3.6 | 2.4 | 43.63 | 119.62 | 1 | |
| 8:10 | 12:10 | 865 | 4283 | 3.2 | 3.7 | 2.3 | 55.2 | 121.1 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 36.31 µBar |
| | | | | | | | | | | Peak RMS Noise: 124.16 µBar |
| | | | | | | | | | | |
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NCS SubSea
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

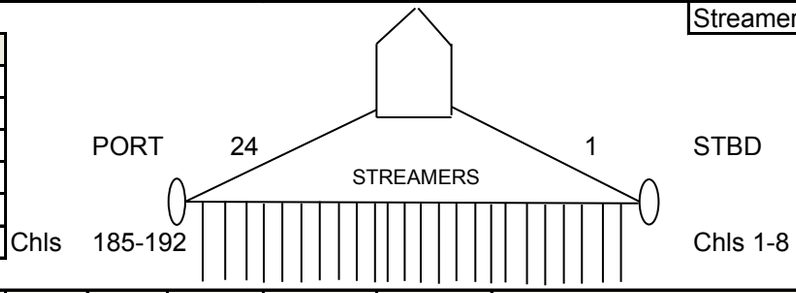
| | | |
|---|---|---|
| Date: 18-Jun-15 | Line Number: 1516 | Water Depth(m): 22.6 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 45 | Vessel Speed: 4.5 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski | **Sea(m): 0.5 Wind (kts): ESE 8.2** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| Date: | 18-Jun-15 | Line Number: | 2404 | Water Depth(m): | 54.6 |
| Client: | Columbia University | Line Azimuth: | 304° | Mean Velocity: | 1500m/s |
| Area: | New Jersey | Sequence No | 46 | Vessel Speed: | 4.4 kts |
| Vessel: | R/V Marcus Langseth | Observers: | Ard / Koprowski | **Sea(m): 0.5-1 Wind (kts): E 4.8** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 09:16 | 13:16 | 856 | 1 | 3.3 | 4.1 | 2.4 | 54.6 | 310.1 | 0 | SOL/FGSP |
| 10:01 | 14:01 | 1355 | 500 | 3.3 | 4.2 | 2.6 | 45.63 | 308.3 | 1 | |
| 10:36 | 14:36 | 1720 | 865 | ----- | ----- | ----- | ----- | ----- | 0 | Missed Shot |
| 10:50 | 14:50 | 1855 | 1000 | 3.2 | 4.1 | 2.4 | 34.6 | 306.7 | 0 | |
| 11:40 | 15:40 | 2359 | 1503 | 3.1 | 3.7 | 2.5 | 30.86 | 305.58 | 1 | |
| 12:38 | 16:38 | 2942 | 2087 | 3.3 | 3.8 | 2.5 | 27.5 | 305.5 | 0 | |
| 13:42 | 17:42 | 3586 | 2730 | | | | | | | Missed Shot due to gun control lock up |
| 13:42 | 17:42 | 3587 | 2731 | | | | | | | Missed Shot due to gun control lock up |
| 13:42 | 17:42 | 3588 | 2732 | | | | | | | Missed Shot due to gun control lock up |
| 13:42 | 17:42 | 3589 | 2733 | | | | | | | Missed Shot due to gun control lock up |
| 13:42 | 17:42 | 3590 | 2734 | | | | | | | Missed Shot due to gun control lock up |
| 13:42 | 17:42 | 3591 | 2735 | | | | | | | Missed Shot due to gun control lock up |
| 13:42 | 17:42 | 3592 | 2736 | | | | | | | Missed Shot due to gun control lock up |
| 13:42 | 17:42 | 3593 | 2737 | | | | | | | Missed Shot due to gun control lock up |
| 13:42 | 17:42 | 3594 | 2738 | | | | | | | Missed Shot due to gun control lock up |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| Date: 18-Jun-15 | Line Number: 2404 | Water Depth(m): 54.6 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 46 | Vessel Speed: 4.4 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski | **Sea(m): 0.5-1 Wind (kts): E 4.8** |

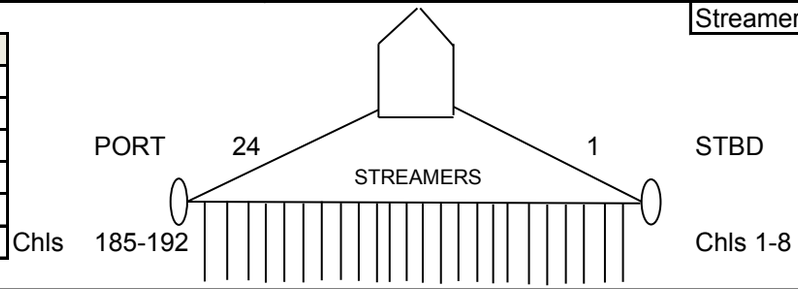
| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 13:43 | 17:43 | 3595 | 2739 | | | | | | | Missed Shot due to gun control lock up |
| 13:43 | 17:43 | 3596 | 2740 | | | | | | | Missed Shot due to gun control lock up |
| 15:07 | 19:07 | 4461 | 3606 | 3.3 | 3.9 | 2.6 | | | | |
| 15:53 | 19:53 | 4961 | 4106 | 3.1 | 3.6 | 2.4 | 28 | 305 | 0 | |
| 16:09 | 20:09 | 5137 | 4282 | 2.9 | 3.5 | 2.0 | 24.7 | 305 | 0 | EOL/LGSP |
| | | | | | | | | | | Average RMS Noise: 36.85µBar |
| | | | | | | | | | | Peak RMS Noise: 127.42 µBar |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 18-Jun-15 | Line Number: 1756I | Water Depth(m): 22.5 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 47 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1 Wind (kts): SE 11.7** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 18:01 | 22:01 | 5135 | 1 | 3.1 | 3.7 | 2.4 | 22.5 | 124 | 1 | SOL/FGSP |
| 18:15 | 22:15 | 4986 | 151 | | | | | | 70 | Noticed high leakage in P-cable |
| 18:23 | 22:23 | 4906 | 231 | | | | | | | LGSP and File / After Missing Section 4 Cable |
| | 22:27 | 4874 | 261 | | | | | | | Power down of p-cable |
| | 22:31 | 4830 | | | | | | | | EOL Picking p-cable up |
| | | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

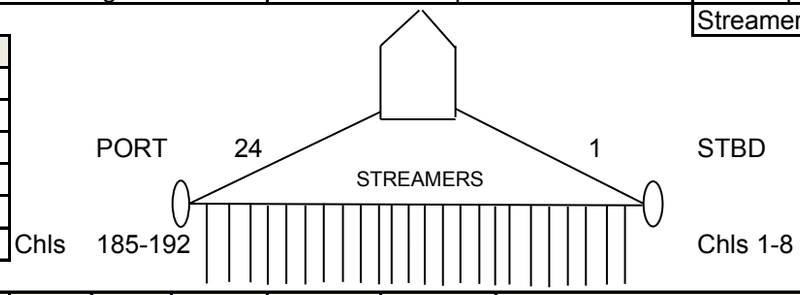
| | | |
|---|---|---|
| Date: 18-Jun-15 | Line Number: 1756I | Water Depth(m): 22.5 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 47 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1 Wind (kts): SE 11.7** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 19-Jun-15 | Line Number: 1756J | Water Depth(m): 37.9 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 48 | Vessel Speed: 4.4 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski | **Sea(m): 0.5 Wind (kts): SE 9.2** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0:06 | 4:06 | 1654 | 1 | 3.0 | 3.3 | 2.4 | 37.9 | 131.4 | 0 | SOL/FGSP (Noise on channel 117) |
| 1:05 | 5:05 | 980 | 675 | 3.0 | 3.3 | 2.3 | 54.04 | 121.9 | 0 | |
| 01:15 | 05:15 | 865 | 790 | 3 | 3.3 | 2.2 | 55.5 | 122.1 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 36.49 µBar |
| | | | | | | | | | | Peak RMS Noise: 129.92 µBar |
| | | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

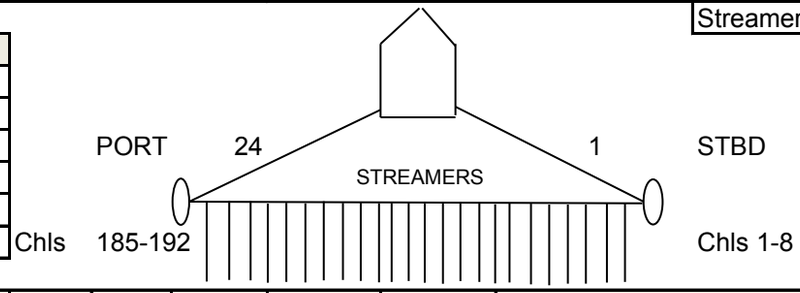
| | | |
|---|---|---|
| Date: 19-Jun-15 | Line Number: 1756J | Water Depth(m): 37.9 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 48 | Vessel Speed: 4.4 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski | **Sea(m): 0.5 Wind (kts): SE 9.2** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: | 19-Jun-15 | Line Number: | 2572S | Water Depth(m): 53.9 |
| | Client: | Columbia University | Line Azimuth: | 304° | Mean Velocity: 1500m/s |
| | Area: | New Jersey | Sequence No | 49 | Vessel Speed: 4.4 kts |
| | Vessel: | R/V Marcus Langseth | Observers: | Ard / Koprowski | **Sea(m): 1 Wind (kts): SE 9.0** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2:24 | 6:24 | 860 | 1 | 3.1 | 3.2 | 2.2 | 53.9 | 309.4 | 0 | SOL/FGSP (Noise on channel 117) 2752 Reshoot |
| 3:13 | 7:13 | 1359 | 500 | 3.3 | 3.7 | 2.4 | 30.26 | 310.01 | 1 | |
| 04:24 | 8:24 | 2105 | 1246 | 2.9 | 3.4 | 2.4 | 28.5 | 309.8 | 0 | |
| 05:11 | 09:11 | 2619 | | | | | | | | LSP of LN # 2572 Reshoot |
| 05:14 | 09:14 | 2655 | 1796 | 2.8 | 3.2 | 2.1 | 29.48 | 309.24 | 0 | |
| 5:56 | 9:45 | 3007 | 2148 | 2.8 | 3.4 | 2.6 | 27.32 | 305.64 | 1 | FSP of LN 2500 Reshoot |
| 6:21 | 10:21 | 3430 | 2571 | 2.7 | 3.4 | 2.2 | 29.96 | 305.25 | 0 | |
| 6:45 | 10:45 | 3701 | 2842 | 3.0 | 3.5 | 2.3 | 32.1 | 306.97 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 37.33 µBar |
| | | | | | | | | | | Peak RMS Noise: 138.76 µBar |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

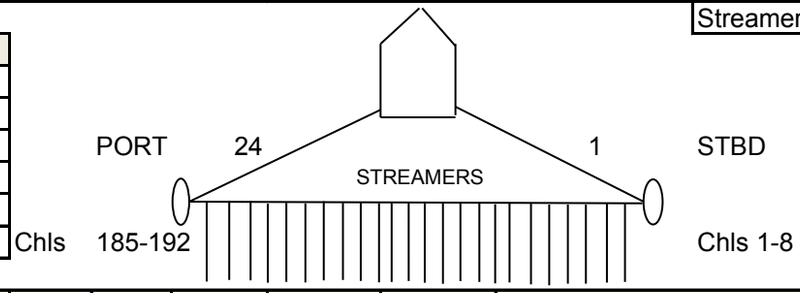
| | | |
|---|---|---|
| Date: 19-Jun-15 | Line Number: 2572S | Water Depth(m): 53.9 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 49 | Vessel Speed: 4.4 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski | **Sea(m): 1 Wind (kts): SE 9.0** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: | 19-Jun-15 | Line Number: | 1900I | Water Depth(m): 31.2 |
| | Client: | Columbia University | Line Azimuth: | 124.4° | Mean Velocity: 1500m/s |
| | Area: | New Jersey | Sequence No | 50 | Vessel Speed: 4.4 kts |
| | Vessel: | R/V Marcus Langseth | Observers: | Ard / Koprowski | **Sea(m): 1 Wind (kts): WSW 7.1** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 8:51 | 12:51 | 3885 | 1 | 3.1 | 3.6 | 2.4 | 31.2 | 127.7 | 0 | SOL/FGSP (Noise on channel 117) |
| 9:23 | 13:23 | 3566-3529 | 257-320 | ----- | ----- | ----- | ----- | ----- | ----- | High Frequency Noise - Source Unknown: SP 3566-3529 (Files ~257-320) |
| 09:31 | 13:31 | 3447 | 439 | ----- | ----- | ----- | ----- | ----- | ----- | Power Down for Turtle sighting |
| 09:32 | 13:32 | 3442 | 444 | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun ON - 40 in3 |
| 09:36 | 13:36 | 3393 | 493 | ----- | ----- | ----- | ----- | ----- | ----- | LSP before Mitigation Gun - 40 in3 OFF / No source |
| 9:37 | 13:37 | 3386 | 499 | ----- | ----- | ----- | ----- | ----- | ----- | FSP / Full Source - 700 in3 |
| 10:30 | 14:30 | 2806 | 1079 | 3.1 | 3.5 | 2.3 | 29.46 | 131.9 | 0 | |
| 11:32 | 15:32 | 2107 | 1778 | 3.0 | 3.6 | 2.3 | 25.86 | 139.53 | 0 | |
| 12:47 | 16:47 | 1243 | 2641 | 3.2 | 3.8 | 2.5 | 49.5 | 124.19 | 0 | |
| 12:48 | 16:48 | 1231 | 2655 | ----- | ----- | ----- | ----- | ----- | ----- | Power Down for Turtle sighting |
| 12:48 | 16:48 | 1226 | 2660 | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun ON - 40 in3 |
| 12:54 | 16:54 | 1160 | 2726 | ----- | ----- | ----- | ----- | ----- | ----- | LSP before Mitigation Gun - 40 in3 OFF / No source |
| 12:54 | 16:54 | 1154 | 2732 | ----- | ----- | ----- | ----- | ----- | ----- | FSP / Full Source - 700 in3 |

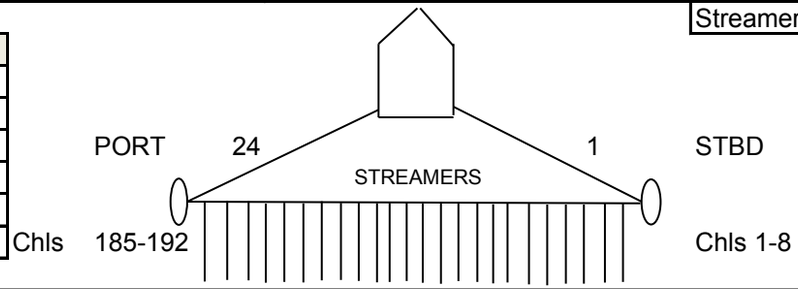
| NCS SubSea Navigating the Future | | | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date: 19-Jun-15 | | | | Line Number: 1900I | | | Water Depth(m): 31.2 |
| | | | Client: Columbia University | | | | Line Azimuth: 124.4° | | | Mean Velocity: 1500m/s |
| | | | Area: New Jersey | | | | Sequence No 50 | | | Vessel Speed: 4.4 kts |
| | | | Vessel: R/V Marcus Langseth | | | | Observers: Ard / Koprowski | | | **Sea(m): 1 Wind (kts): WSW 7.1** |
| 13:19 | 17:19 | 864 | 3022 | 3.4 | 3.7 | 2.4 | 53.5 | 126 | 1 | EOL/LGSP (Noise on channel 117) |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: µBar |
| | | | | | | | | | | Peak RMS Noise: µBar |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | |
|---|---|---|---|---|
| | Date: 19-Jun-15 | Line Number: | 2380 | Water Depth(m): |
| | Client: Columbia University | Line Azimuth: | 304° | Mean Velocity: 1500m/s |
| | Area: New Jersey | Sequence No | 51 | Vessel Speed: 4.0 kt |
| | Vessel: R/V Marcus Langseth | Observers: | Ard / Curtis | **Sea(m): Wind (kts):** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 14:22 | 18:22 | 874 | 1 | 2.6 | 3.1 | 2.1 | 52 | 304 | 0 | SOL/FGSP |
| 15:12 | 19:12 | 1410 | 537 | | | | | | | Power down for turtle |
| 15:20 | 19:20 | 1490 | 617 | | | | | | | Full power (700in3) |
| 18:02 | 22:02 | 3326 | 2453 | 3.0 | 3.3 | 2.1 | 29.5 | 305 | 1 | |
| 18:05 | 22:05 | 3356 | 2483 | | | | | | | Incomplete file for 10,18 LGSP |
| 18:14 | 22:14 | | | | | | | | | Restarted P-cable software |
| 18:19 | 22:19 | 3503 | 2629 | | | | 28.6 | | | EOL/LGSP |
| | | | | | | | | | | |
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| | | | | | | | | | | Average RMS Noise: µBar |
| | | | | | | | | | | Peak RMS Noise: µBar |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

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|---|---|---|
| Date: 19-Jun-15 | Line Number: 2380 | Water Depth(m): |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 51 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): Wind (kts):** |

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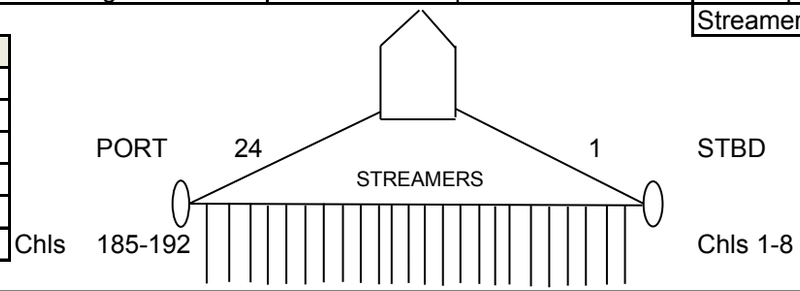
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 19-Jun-15 | Line Number: 1660S | Water Depth(m): 30.1 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 52 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0 Wind (kts): E 3** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 23:41 | 3:41 | 2978 | 1 | 4.3 | 5.8 | 3.0 | 31.1 | 124 | 0 | SOL/FGSP |
| 0:34 | 4:34 | 2371 | 608 | 3.3 | 3.8 | 2.3 | 31.82 | 124.0 | 1 | |
| 01:48 | 05:48 | 1509 | 1470 | 3.2 | 3.5 | 2.1 | 48.61 | 131.39 | 1 | |
| 02:35 | 06:35 | 967 | 2012 | 3.3 | 3.8 | 2.2 | 53.53 | 125.61 | 0 | |
| 02:44 | 06:44 | 865 | 2114 | 3.4 | 3.8 | 2.3 | 54.7 | 126.7 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 33.50 µBar |
| | | | | | | | | | | Peak RMS Noise: 105.56 µBar |
| | | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

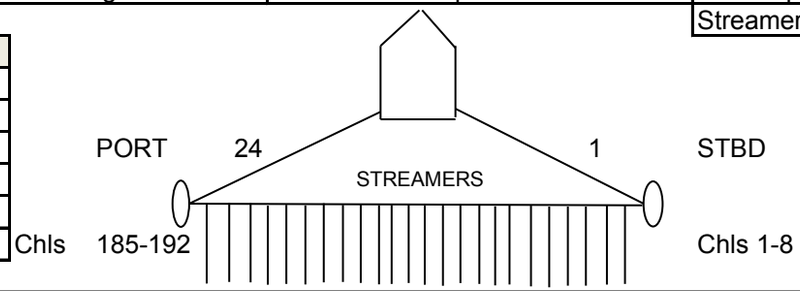
| | | |
|---|---|---|
| Date: 19-Jun-15 | Line Number: 1660S | Water Depth(m): 30.1 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 52 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0 Wind (kts): E 3** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 20-Jun-15 | Line Number: 2356 | Water Depth(m): 53.4 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 53 | Vessel Speed: 4.5 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard, Curtis / Koprowski | **Sea(m): 1 Wind (kts): ESE 5.3** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | |
|---|---|
| Reference Point: | Stern |
| CRP to Stern: | -30.67 m |
| Stern to Stbd Paravane: | 325 m |
| Stern to Port Paravane: | 315 m |
| Spread (strmr 1 to 24): | 287.5 m |
| Stern to Source: | 275 m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 3:46 | 7:46 | 860 | 1 | 3.4 | 3.6 | 2.4 | 53.4 | 301.7 | 0 | SOL/FGSP |
| 4:34 | 8:34 | 1382 | 523 | 3.4 | 3.8 | 2.1 | 43.29 | 304.55 | 0 | |
| 05:36 | 09:36 | 2059 | 1200 | 3.6 | 4.1 | 2.5 | 28.73 | 306.14 | 0 | |
| 05:52 | 9:52 | 2241 | 1382 | ----- | ----- | ----- | ----- | ----- | ----- | Power Down for Turtle - Shooting off |
| 05:52 | 9:52 | 2245 | 1386 | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun - 40in3 ON |
| 5:58 | 9:58 | 2299 | 1440 | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun - 40in3 OFF |
| 5:58 | 9:58 | 2304 | 1445 | ----- | ----- | ----- | ----- | ----- | ----- | Source Full Power - 700in3 / FGSP |
| 6:38 | 10:38 | 2752 | 1893 | 3.6 | 4.1 | 2.4 | 29.13 | 305.85 | 0 | |
| 7:38 | 11:38 | 3450 | 2591 | 3.4 | 3.9 | 2.4 | 29.23 | 304.29 | 1 | |
| 8:57 | 12:57 | 4348 | 3489 | 3.4 | 3.9 | 2.5 | 29.03 | 304.56 | 1 | |
| 9:50 | 13:50 | 4935 | 4076 | 3.4 | 3.9 | 2.5 | 29.60 | 307.24 | 1 | |
| 10:09 | 14:09 | 5137 | 4278 | 3.6 | 3.9 | 2.4 | 25.8 | 308.5 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 33.63 µBar |
| | | | | | | | | | | Peak RMS Noise: 103.86 µBar |

NCS SubSea
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

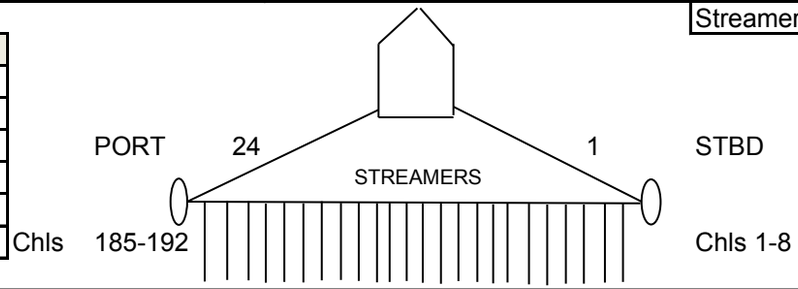
| | | |
|---|---|---|
| Date: 20-Jun-15 | Line Number: 2356 | Water Depth(m): 53.4 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 53 | Vessel Speed: 4.5 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard, Curtis / Koprowski | **Sea(m): 1 Wind (kts): ESE 5.3** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 20-Jun-15 | Line Number: 1492 | Water Depth(m): 23.1 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 54 | Vessel Speed: 4.4 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard, Curtis / Koprowski | **Sea(m): 1 Wind (kts): E 11** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | |
|---|---|
| Reference Point: | Stern |
| CRP to Stern: | -30.67 m |
| Stern to Stbd Paravane: | 325 m |
| Stern to Port Paravane: | 315 m |
| Spread (strmr 1 to 24): | 287.5 m |
| Stern to Source: | 275 m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 11:14 | 15:14 | 5148 | 1 | 3.3 | 3.8 | 2.3 | 23.1 | 122.9 | 1 | SOL/FGSP (channel 117 seems noisy) |
| 12:40 | 16:40 | 4167 | 982 | 3.3 | 3.5 | 2.2 | 30.63 | 123.50 | 1 | |
| 13:23 | 17:23 | 3667 | 1482 | 3.2 | 3.7 | 2.3 | 34.4 | 124.02 | 0 | |
| 14:33 | 18:33 | 2869 | 2279 | 3.3 | 3.8 | 2.3 | 29.67 | 123.1 | 1 | |
| 15:17 | 19:17 | 2369 | 2779 | 3.5 | 3.8 | 2.2 | 29.91 | 122.75 | 0 | |
| 16:05 | 20:05 | 1822 | 3327 | 3.3 | 3.6 | 2.3 | 28.74 | 123.97 | 0 | |
| 17:28 | 21:28 | 865 | 4284 | 3.7 | 3.9 | 2.4 | 54.7 | 122.43 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 34.21 µBar |
| | | | | | | | | | | Peak RMS Noise: 101.46 µBar |
| | | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

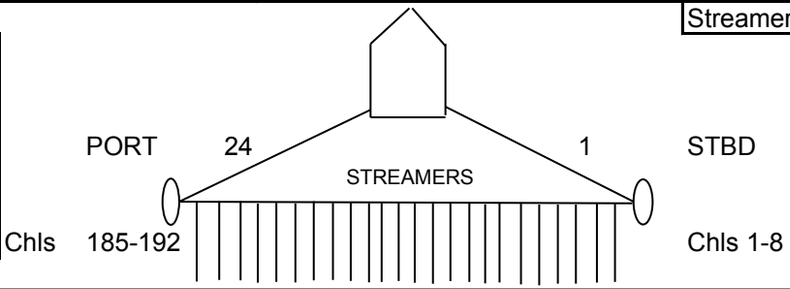
| | | |
|---|---|---|
| Date: 20-Jun-15 | Line Number: 1492 | Water Depth(m): 23.1 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 54 | Vessel Speed: 4.4 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard, Curtis / Koprowski | **Sea(m): 1 Wind (kts): E 11** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 20-Jun-15 | Line Number: 2332 | Water Depth(m): 53.5 |
| | Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| | Area: New Jersey | Sequence No 55 | Vessel Speed: 4.0 kt |
| | Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0.5 Wind (kts): SE 5** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 18:35 | 22:35 | 871 | 1 | 3.5 | 3.7 | 2.6 | 53.5 | 307 | 0 | SOL/FGSP (ch 117 noisy/peak RMS often) |
| 20:13 | 00:13 | 2014 | 1144 | 3.1 | 3.6 | 2.3 | 30.34 | 305.2 | 0 | |
| 20:56 | 00:56 | 2514 | 1644 | 3.2 | 3.5 | 2.1 | 29.14 | 305.6 | 0 | |
| 21:44 | 1:44 | 3068 | 2198 | 3.3 | 3.4 | 2.4 | 28.3 | 305.3 | 0 | |
| 22:31 | 02:31 | 3603 | 2733 | 3 | 3.2 | 2.3 | 27.84 | 305.8 | 1 | |
| 23:32 | 3:32 | 4286 | 3416 | 3 | 3.3 | 2.1 | 29.36 | 304.2 | 0 | |
| 0:51 | 4:51 | 5137 | 4267 | 3.2 | 3.5 | 2.2 | 25.5 | 307.2 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 34.69 µBar |
| | | | | | | | | | | Peak RMS Noise: 108.02 µBar |
| | | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

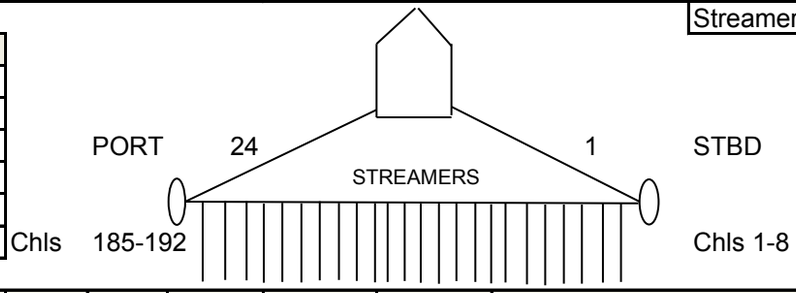
| | | |
|---|---|---|
| Date: 20-Jun-15 | Line Number: 2332 | Water Depth(m): 53.5 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 55 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0.5 Wind (kts): SE 5** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 21-Jun-15 | Line Number: 1468 | Water Depth(m): 23.8 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 56 | Vessel Speed: 4.5 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski | **Sea(m): 1 Wind (kts): SE 16.1** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | |
|---|---|
| Reference Point: | Stern |
| CRP to Stern: | -30.67 m |
| Stern to Stbd Paravane: | 325 m |
| Stern to Port Paravane: | 315 m |
| Spread (strmr 1 to 24): | 287.5 m |
| Stern to Source: | 275 m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 01:57 | 05:57 | 5138 | 1 | 3.1 | 3.2 | 2.3 | 23.8 | 128.2 | 1 | SOL/FGSP (ch 117 noisy/peak RMS often) |
| 02:39 | 06:39 | 4654 | 485 | 3.4 | 3.5 | 2.3 | 26.02 | 127.19 | 1 | |
| 03:49 | 07:49 | 3852 | 1287 | 3 | 3.3 | 1.9 | 29.56 | 137.39 | 0 | |
| 5:04 | 9:04 | 3000 | 2139 | 3.3 | 3.7 | 2.4 | 30.43 | 129.69 | 1 | |
| 6:22 | 10:22 | 2155 | 2983 | 3.2 | 3.6 | 2.6 | 26.48 | 132.24 | 0 | |
| 7:59 | 11:59 | 1144 | 3994 | 3.2 | 3.7 | 2.4 | 50.84 | 130.22 | 1 | |
| 8:26 | 12:26 | 865 | 4274 | 2.8 | 3.3 | 2.5 | 56.7 | 128.3 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 33.66 µBar |
| | | | | | | | | | | Peak RMS Noise: 105.30 µBar |
| | | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

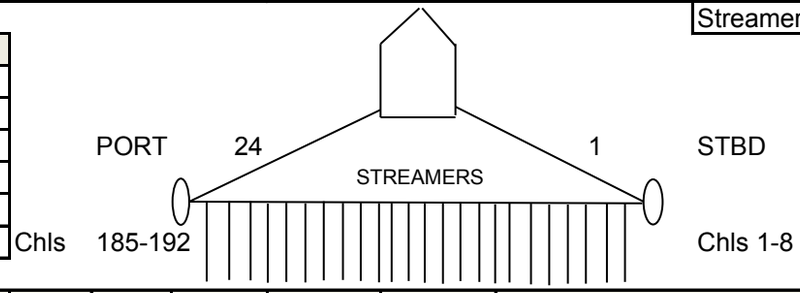
| | | |
|---|---|---|
| Date: 21-Jun-15 | Line Number: 1468 | Water Depth(m): 23.8 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 56 | Vessel Speed: 4.5 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski | **Sea(m): 1 Wind (kts): SE 16.1** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| Date: | 21-Jun-15 | Line Number: | 2308 | Water Depth(m): | 53.4 |
| Client: | Columbia University | Line Azimuth: | 304° | Mean Velocity: | 1500m/s |
| Area: | New Jersey | Sequence No | 57 | Vessel Speed: | 4.5 kts |
| Vessel: | R/V Marcus Langseth | Observers: | Ard / Koprowski | **Sea(m): 1** | **Wind (kts): S 24.6** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 09:27 | 13:27 | 865 | 1 | 3 | 3.3 | 2 | 53.4 | 297.9 | 1 | SOL/FGSP (ch 117 noisy/peak RMS often) |
| 10:21 | 14:21 | 1468 | 604 | 2.7 | 3.1 | 1.7 | 33.63 | 294.89 | 1 | |
| 11:22 | 15:22 | 2156 | 1292 | 3.6 | 3 | 1.9 | 28.12 | 295.51 | 1 | |
| 11:56 | 15:56 | 2529 | 1665 | | | | | | | Double pop noticed |
| 12:12 | 16:12 | 2710 | 1848 | | | | | | | double pop more consistant |
| 12:13 | 16:13 | 2717 | 1850 | | | | | | | started sparing out guns/ not 700in3 |
| 12:14 | 16:14 | 2730 | 1866 | | | | | | | gun 9 spared for gun 10 back to 700in3 |
| 12:34 | 16:34 | 2946 | 2082 | | | | | | | double pop noticed again |
| 12:34 | 16:34 | 2951 | 2087 | | | | | | | started sparing out guns/ not 700in3 |
| 12:34 | 16:34 | 2953 | 2089 | | | | | | | gun 7 spared for gun 8 back to 700in3 |
| 15:07 | 19:07 | 4577 | 3713 | 2.5 | 2.9 | 2 | 26.82 | 305.1 | 0 | |
| 15:18 | 19:18 | 4687 | | | | | | | | Missed shot due to navigation |
| | 20:02 | 5137 | 4272 | 2.9 | 3.5 | 2.7 | 24.7 | 305.0 | 0 | EOL/LGSP |
| | | | | | | | | | | Average RMS Noise: 42.95 µBar |
| | | | | | | | | | | Peak RMS Noise: 136.56 µBar |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

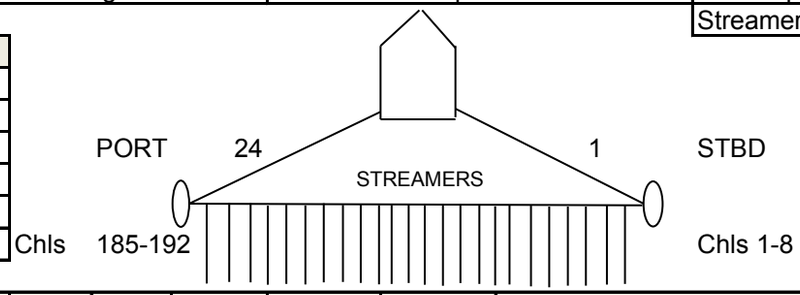
| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date: | 21-Jun-15 | | | Line Number: | 2308 | | | Water Depth(m): | 53.4 | |
| Client: | Columbia University | | | Line Azimuth: | 304° | | | Mean Velocity: | 1500m/s | |
| Area: | New Jersey | | | Sequence No | 57 | | | Vessel Speed: | 4.5 kts | |
| Vessel: | R/V Marcus Langseth | | | Observers: | Ard / Koprowski | | | **Sea(m): 1** | **Wind (kts): S 24.6** | |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 21-Jun-15 | Line Number: 1444/1444A | Water Depth(m): 21.7 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 58 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1 Wind (kts): SW 11** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17:20 | 21:20 | 5129 | 1 | 2.7 | 3.2 | 2.2 | 21.7 | 121.8 | 0 | SOL/FGSP |
| 17:58 | 21:58 | 4707 | 423 | | | | | | | GeoEel software crash / rebooting |
| 18:05 | 22:05 | 4643 | 1 | | | | | | | Started new line, 1444A |
| 18:59 | 22:59 | 4054 | 590 | 3.6 | 3.5 | 2.0 | 30.83 | 121.92 | 0 | |
| 20:52 | 00:52 | 2828 | 1816 | 3 | 3.2 | 2.1 | 29.4 | 126.33 | 0 | |
| 21:58 | 01:58 | 2125 | 2519 | 3.1 | 3.1 | 2.6 | 29.34 | 125.1 | 0 | |
| 22:45 | 02:45 | 1625 | 3019 | 3.1 | 3.2 | 2.5 | 50.22 | 126.5 | 1 | |
| 23:55 | 3:55 | 865 | 3779 | 3.3 | 3.3 | 1.9 | 56.3 | 132.2 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 40.29 µBar |
| | | | | | | | | | | Peak RMS Noise: 124.71 µBar |
| | | | | | | | | | | |
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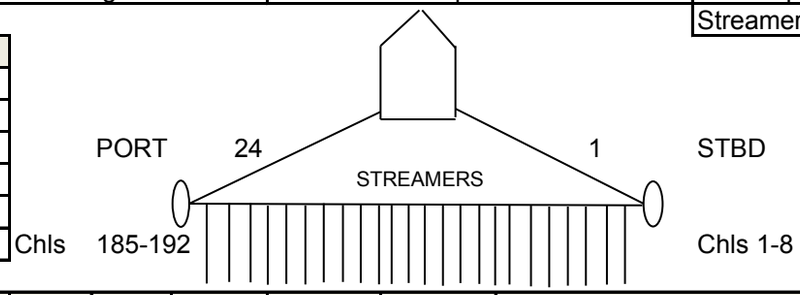
| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | |
|---|---|---|---|
| | Date: 21-Jun-15 | Line Number: 1444/1444A | Water Depth(m): 21.7 |
| | Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| | Area: New Jersey | Sequence No 58 | Vessel Speed: 4.0 kt |
| | Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1 Wind (kts): SW 11** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 22-Jun-15 | Line Number: 2284 | Water Depth(m): 54.3 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 59 | Vessel Speed: 4.3 kts |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 1 Wind (kts): SW 16.4** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 00:57 | 04:57 | 858 | 1 | 3.2 | 3.9 | 2.2 | 54.3 | 298.2 | 0 | SOL/FGSP |
| 03:14 | 07:14 | 2255 | 1398 | 3.3 | 3.5 | 2.3 | 28.61 | 299.73 | 1 | |
| 04:15 | 08:15 | 2888 | 2031 | 2.7 | 3.1 | 1.7 | 26.98 | 302.13 | 0 | |
| 5:28 | 9:28 | 3677 | 2820 | 3.0 | 3.0 | 2.1 | 31.92 | 306.11 | 0 | |
| 6:42 | 10:42 | 4505 | 3648 | 3.2 | 3.2 | 2.0 | 27.17 | 307.17 | 0 | |
| 7:12 | 11:12 | 4842 | 3985 | 3.1 | 3.1 | 2.1 | 29.22 | 307.18 | 0 | |
| 7:38 | 11:38 | 5137 | 4280 | 2.7 | 3.2 | 2.2 | 25.1 | 306.9 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise:37.98 µBar |
| | | | | | | | | | | Peak RMS Noise: 123.08 µBar |
| | | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

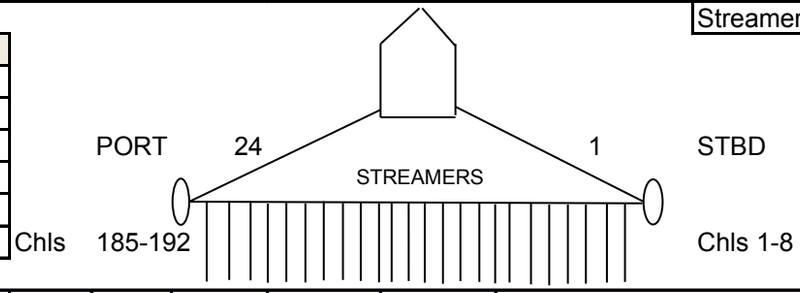
| | | |
|---|---|---|
| Date: 22-Jun-15 | Line Number: 2284 | Water Depth(m): 54.3 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 59 | Vessel Speed: 4.3 kts |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 1 Wind (kts): SW 16.4** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 22-Jun-15 | Line Number: 1420 | Water Depth(m): 22.7 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 60 | Vessel Speed: 4.3 kts |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 1 Wind (kts): NW 4.3** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08:44 | 12:44 | 5148 | 1 | 3.5 | 3.3 | 2.5 | 22.7 | 123.1 | 0 | SOL/FGSP (channel 117 is noisy) |
| 09:42 | 13:42 | 4545 | 604 | 3.1 | 3.9 | 2.4 | 24.81 | 115.34 | 0 | |
| 09:50 | 13:50 | 4452 | 697 | ----- | ----- | ----- | ----- | ----- | ----- | Power Down for Whale - No source/ last full volume |
| 9:51 | 13:51 | 4450 | 699 | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun 40in3 - ON |
| 9:51 | 13:51 | 4446 | 703 | ----- | ----- | ----- | ----- | ----- | ----- | Power OFF - NO SOURCE |
| 10:52 | 14:52 | 3825 | 1324 | ----- | ----- | ----- | ----- | ----- | ----- | Ramp-up started (Whale sighting cleared by PSOs) |
| 11:24 | 15:24 | 3512 | 1637 | ----- | ----- | ----- | ----- | ----- | ----- | Ramp-up completed - FGSP at Full Source 700in3 |
| 11:35 | 15:35 | 3404 | 1745 | 3.7 | 4.1 | 2.3 | 28.92 | 125.40 | 1 | |
| 13:06 | 17:06 | 2392 | 2757 | | | | | | | Power Down for Turtle, last full volume |
| 13:06 | 17:06 | 2386 | 2763 | | | | | | | Mitigation gun shooting (40 in3) |
| 13:12 | 17:12 | 2322 | 2827 | | | | | | | Guns off for reconfiguration |
| 13:12 | 17:12 | 2312 | 2837 | | | | | | | First full volume |
| 13:18 | 17:18 | 2249 | | | | | | | | Missed shot d/t navigation |
| 13:32 | 17:32 | 2081 | 3067 | | | | | | | Power Down for Turtle, last full volume |

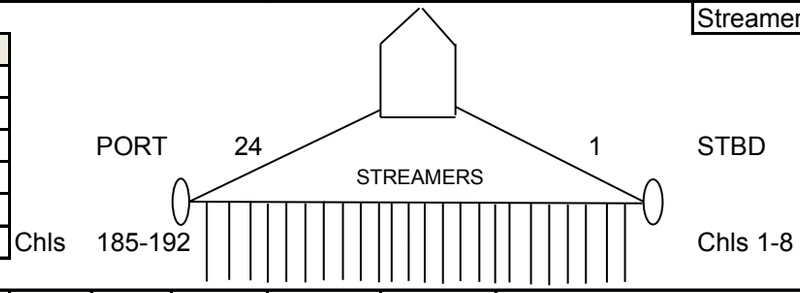
| NCS SubSea Navigating the Future | | | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date: 22-Jun-15 | | | | Line Number: 1420 | | | Water Depth(m): 22.7 | |
| | | | Client: Columbia University | | | | Line Azimuth: 124° | | | Mean Velocity: 1500m/s | |
| | | | Area: New Jersey | | | | Sequence No 60 | | | Vessel Speed: 4.3 kts | |
| | | | Vessel: R/V Marcus Langseth | | | | Observers: Koprowski | | | **Sea(m): 1 Wind (kts): NW 4.3** | |
| 13:32 | 17:32 | 2072 | 3076 | | | | | | | Mitigation gun shooting (40 in3) | |
| 13:38 | 17:38 | 2017 | 3131 | | | | | | | Guns off for reconfiguration | |
| 13:38 | 17:38 | 2007 | 3141 | | | | | | | First full volume | |
| 14:19 | 18:19 | 1536 | 3612 | | | | | | | Power Down for Turtle, last full volume | |
| 14:19 | 18:19 | 1532 | 3616 | | | | | | | Mitigation gun shooting (40 in3) | |
| 14:23 | 18:23 | 1482 | 3666 | | | | | | | Guns off for reconfiguration | |
| 14:24 | 18:24 | 1475 | 3673 | | | | | | | First full volume | |
| 15:16 | 19:16 | 865 | 4283 | 3.4 | 3.8 | 2.3 | 55 | 124 | 0 | EOL/LGSP | |
| | | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 38.72 µBar | |
| | | | | | | | | | | Peak RMS Noise: 113.62 µBar | |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 22-Jun-15 | Line Number: 2260 | Water Depth(m): 54 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 61 | Vessel Speed: 4.3 kts |
| Vessel: R/V Marcus Langseth | Observers: Curtis | **Sea(m): 0.5 Wind (kts): SW 10** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16:19 | 20:19 | 871 | 1 | 3.3 | 3.6 | 2.2 | 53.6 | 308 | 0 | SOL/FGSP (channel 117 is noisy) |
| 16:39 | 20:39 | 1078 | 208 | | | | | | | Last Good d/t nav, signal cable, fishing gear |
| 16:43 | 20:43 | 1123 | 222 | | | | | | | First Good after P-Cable restart |
| 18:46 | 22:46 | 2401 | 1500 | 3.4 | 4 | 2.5 | 30 | 305 | 0 | |
| 20:16 | 00:16 | 3401 | 2500 | 3.2 | 3.6 | 2.4 | 30 | 305 | 0 | |
| 21:45 | 01:45 | 4401 | 3500 | 3.8 | 5.2 | 2.2 | 29 | 304 | 1 | |
| 22:49 | 02:49 | 5137 | 4236 | 3.1 | 3.5 | 2.4 | 25 | 304 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 34.29 µBar |
| | | | | | | | | | | Peak RMS Noise: 101.76 µBar |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 22-Jun-15 | Line Number: 2260 | Water Depth(m): 54 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 61 | Vessel Speed: 4.3 kts |
| Vessel: R/V Marcus Langseth | Observers: Curtis | **Sea(m): 0.5 Wind (kts): SW 10** |

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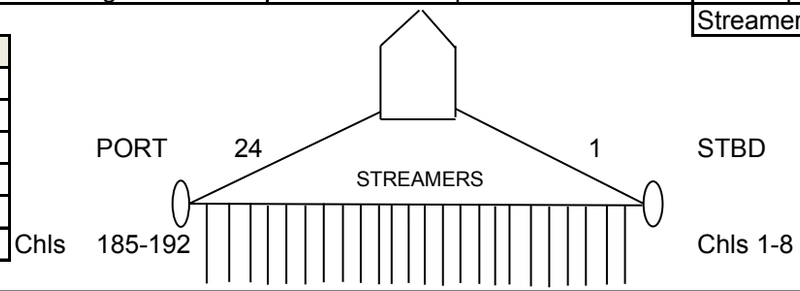
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 22-Jun-15 | Line Number: 1396 | Water Depth(m): 22.1 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 62 | Vessel Speed: 4.3 kts |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 1 Wind (kts): SW 15.4** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 23:55 | 03:55 | 5135 | 1 | 3.4 | 3.8 | 2.5 | 22.1 | 130.9 | 0 | SOL/FGSP (channel 117 is noisy) |
| 01:29 | 05:29 | 4138 | 998 | 3.8 | 4.5 | 2.6 | 31.54 | 127.71 | 0 | |
| 02:16 | 06:16 | 3629 | 1507 | 3.9 | 4.2 | 2.6 | 38.22 | 128.99 | 0 | |
| 3:21 | 7:20 | 2941 | 2196 | 3 | 4.5 | 2.7 | 30.37 | 126.34 | 0 | |
| 4:18 | 8:18 | 2316 | 2820 | 3.5 | 3.9 | 2.5 | 28.66 | 125.22 | 1 | |
| 5:13 | 9:13 | 1705 | 3431 | 3.3 | 3.7 | 2.2 | 42.77 | 124.9 | 2 | |
| 6:28 | 10:28 | 865 | 4271 | 3.3 | 3.8 | 2.4 | 54.5 | 122.1 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 34.09 µBar |
| | | | | | | | | | | Peak RMS Noise: 104.59 µBar |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 22-Jun-15 | Line Number: 1396 | Water Depth(m): 22.1 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 62 | Vessel Speed: 4.3 kts |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 1 Wind (kts): SW 15.4** |

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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

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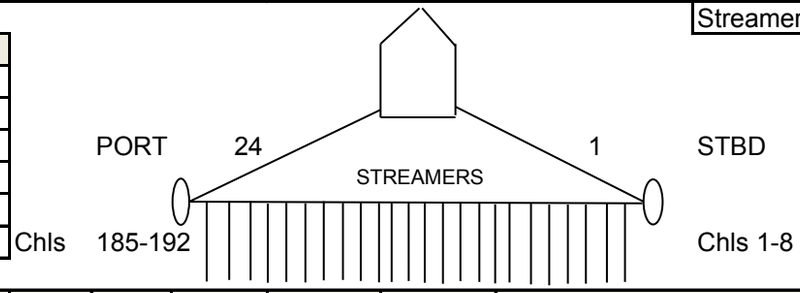
|---|---|---|
| Date: 23-Jun-15 | Line Number: 2236 | Water Depth(m): 52.9 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 63 | Vessel Speed: 4.6 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard/ Curtis/ Koprowski | **Sea(m): 1 Wind (kts): SSW 13.1** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 07:31 | 11:31 | 858 | 1 | 3 | 3.6 | 2.4 | 52.9 | 303.7 | 0 | SOL/FGSP (channel 117 is noisy) |
| 08:25 | 12:25 | 1473 | 616 | 3.4 | 3.6 | 2.4 | 34.02 | 304.12 | 1 | |
| 09:54 | 13:54 | 2469 | 1612 | 3.7 | 4 | 2.6 | 29.22 | 296.49 | 1 | |
| 10:52 | 14:52 | 3115 | 2257 | 3.3 | 3.6 | 2.6 | 27.77 | 294.13 | 1 | |
| 12:07 | 16:07 | 3956 | 3099 | 3.2 | 3.7 | 2.4 | 39.37 | 295.25 | 1 | |
| 13:08 | 17:08 | 4618 | 3761 | 2.9 | 3.5 | 2.5 | 27.59 | 296.84 | 0 | |
| 13:57 | 17:57 | 5137 | 4280 | 3.1 | 3.5 | 2.4 | 25.6 | 295.84 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 34.31 µBar |
| | | | | | | | | | | Peak RMS Noise: 116.56 µBar |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

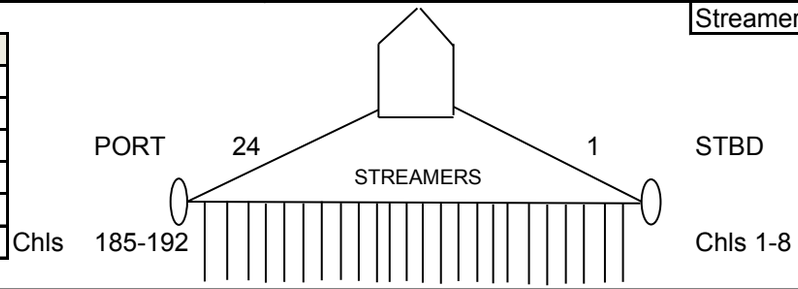
| | | |
|---|---|---|
| Date: 23-Jun-15 | Line Number: 2236 | Water Depth(m): 52.9 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 63 | Vessel Speed: 4.6 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard/ Curtis/ Koprowski | **Sea(m): 1 Wind (kts): SSW 13.1** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 23-Jun-15 | Line Number: 1372 | Water Depth(m): 22 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 64 | Vessel Speed: 4.6 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard/ Curtis | **Sea(m): 1 Wind (kts): SW 20** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 15:05 | 19:05 | 5130 | 1 | | | | | | | SOL/FGSP (channel 117 is noisy) |
| 16:35 | 20:35 | 4100 | 1031 | 3.1 | 3.7 | 2.1 | 30 | 125 | 0 | |
| 17:21 | 21:21 | 3571 | 1560 | 3.4 | 3.9 | 2.5 | 29.41 | 134 | 0 | |
| 18:21 | 22:21 | 2905 | 2226 | 3.3 | 4.4 | 2.5 | 30.7 | 135.1 | 0 | |
| 19:22 | 23:22 | 2255 | 2876 | 3.6 | 4.1 | 2.7 | 27.59 | 134.86 | 1 | |
| 19:47 | 23:47 | 1981 | 3150 | | | | | | | Noise from cross-cable wave-shock noticed |
| 20:51 | 00:51 | 1315 | 3816 | 3.9 | 3.1 | 2.1 | 47.6 | 137.08 | 0 | |
| 21:35 | 1:35 | 865 | 4266 | 3.8 | 4.9 | 3.2 | 55.3 | 134.29 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 40.13 µBar |
| | | | | | | | | | | Peak RMS Noise: 143.19 µBar |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 23-Jun-15 | Line Number: 1372 | Water Depth(m): 22 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 64 | Vessel Speed: 4.6 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard/ Curtis | **Sea(m): 1 Wind (kts): SW 20** |

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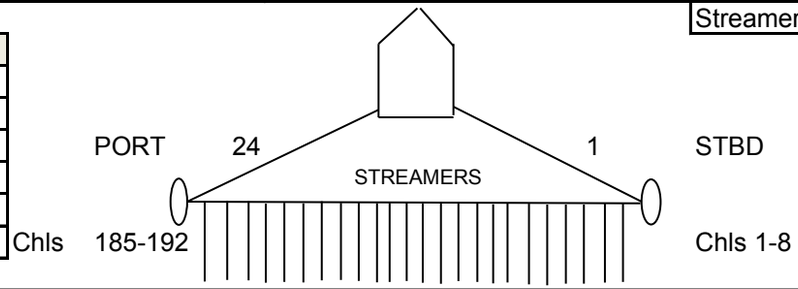
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 23-Jun-15 | Line Number: 2212 | Water Depth(m): 53.1 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 65 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 1.5 Wind (kts): SW 35** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 22:42 | 02:42 | 875 | 1 | 3 | 3 | 1.8 | 53.1 | 291.62 | 1 | SOL/FGSP |
| 23:40 | 03:40 | 1546 | 672 | 3.2 | 2.5 | 1.9 | 33.3 | 298.13 | 0 | |
| 01:33 | 05:33 | 2828 | 1954 | 2.9 | 3.1 | 2.1 | 29.3 | 303.85 | 0 | |
| 2:19 | 6:19 | 3322 | 2448 | 2.9 | 3.2 | 2.5 | 28.96 | 305.57 | 1 | |
| 3:07 | 7:07 | 3836 | 2962 | ----- | ----- | ----- | ----- | ----- | ----- | Auto-Fire / Multi-fire on S1G4 - 180 in3 |
| 3:09 | 7:09 | 3857 | 2983 | ----- | ----- | ----- | ----- | ----- | ----- | S1G4 turned off and G5 - 180in3 turned ON FGSP |
| 3:19 | 7:19 | 3958 | 3084 | 3.0 | 3.3 | 2.0 | 39.25 | 310.04 | 1 | |
| 4:29 | 8:29 | 4675 | 3801 | 3.2 | 3.5 | 2.4 | 27.89 | 310.96 | 0 | Channel 117 Extremely Noisy - 2881.7µBar |
| 5:14 | 9:14 | 5137 | 4263 | 3.1 | 3.8 | 2.8 | 24.0 | 314.2 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 50.33 µBar |
| | | | | | | | | | | Peak RMS Noise: 166.75 µBar |
| | | | | | | | | | | |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

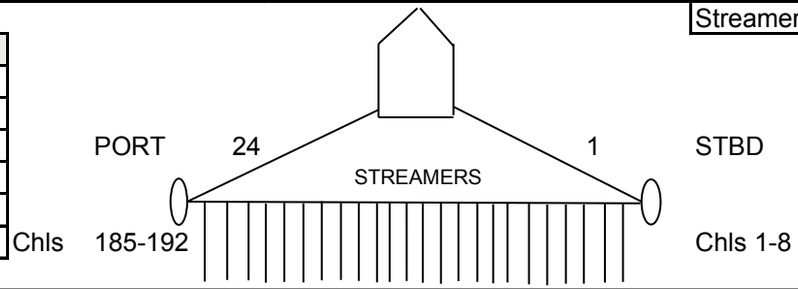
| | | |
|---|---|---|
| Date: 23-Jun-15 | Line Number: 2212 | Water Depth(m): 53.1 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 65 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 1.5 Wind (kts): SW 35** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 24-Jun-15 | Line Number: 1348 | Water Depth(m): 24.1 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 66 | Vessel Speed: 4.4 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 1 Wind (kts): NNW 10.4** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 06:30 | 10:30 | 5147 | 1 | 3.2 | 4.2 | 2.5 | 24.1 | 116.9 | 1 | SOL/FGSP (Channel # 117 Noisy) |
| 07:40 | 11:40 | 4344 | 804 | 3.2 | 3.1 | 2.2 | 28.75 | 118.2 | 0 | |
| 09:02 | 13:02 | 3385 | 1763 | 3 | 3.1 | 2.3 | 27.9 | 124.71 | 0 | |
| 10:20 | 14:20 | 2511 | 2637 | 2.8 | 3.4 | 2.3 | 31.20 | 125.27 | 1 | |
| 10:25 | 14:25 | 2456 | 2692 | ----- | ----- | ----- | ----- | ----- | ----- | Power Down for Turtle - LGSP before No Source |
| 10:26 | 14:26 | 2451 | 2697 | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun - 40in3 ON |
| 10:30 | 14:30 | 2407 | 2741 | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun - 400in3 OFF |
| 10:30 | 14:30 | 2401 | 2747 | ----- | ----- | ----- | ----- | ----- | ----- | Back to Full Source - 700in3 FGSP |
| 10:52 | 14:52 | 2170 | 2978 | ----- | ----- | ----- | ----- | ----- | ----- | Power Down for Turtle - LGSP before No Source |
| 10:52 | 14:52 | 2166 | 2982 | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun - 40in3 ON |
| 10:58 | 14:58 | 2115 | 3033 | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun - 400in3 OFF |
| 10:58 | 14:58 | 2109 | 3039 | ----- | ----- | ----- | ----- | ----- | ----- | Back to Full Source - 700in3 FGSP |
| 11:28 | 15:28 | 1770 | 3378 | 2.8 | 3.2 | 2.2 | 38.81 | 131.44 | 1 | |
| 12:52 | 16:52 | 865 | 4283 | 3.2 | 3.3 | 2.2 | 56.3 | 129.57 | 1 | EOL/LGSP |
| | | | | | | | | | | |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 24-Jun-15 | Line Number: 1348 | Water Depth(m): 24.1 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 66 | Vessel Speed: 4.4 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 1 Wind (kts): NNW 10.4** |

Average RMS Noise: 48.66 µBar

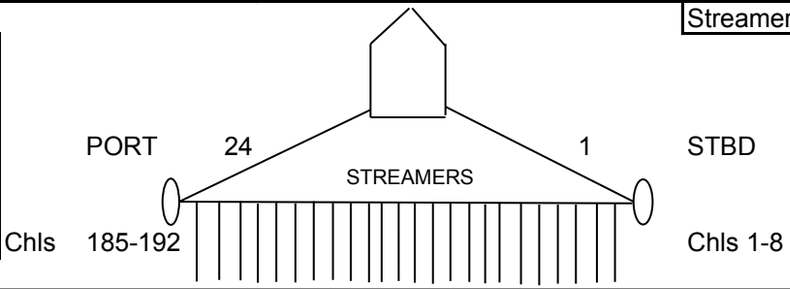
Peak RMS Noise: 144.52 µBar

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 24-Jun-15 | Line Number: 2164 | Water Depth(m): 23.6 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 67 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1.0 Wind (kts): S 10.3** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 13:57 | 17:57 | 873 | 1 | 3.2 | 3.2 | 2.1 | 54.1 | 296.28 | 0 | SOL/FGSP (Channel # 117 noisy) |
| 14:36 | 18:36 | 1301 | 429 | 3.1 | 3.5 | 2.4 | 51.28 | 297.57 | 0 | |
| 18:56 | 18:56 | 1523 | 651 | | | | | | | GeoEEL 13 cut out, incomplete data file |
| 14:58 | 18:58 | 1544 | 672 | | | | | | NTBP | disarmed p-cable/ start trouble shooting |
| 15:02 | 19:02 | 1585 | 673 | | | | | | NTBP | Restarted p-cable/ FGSP after restart |
| 15:04 | 19:04 | 1605 | 693 | | | | | | NTBP | Disabled p-cable/ turning off GeoEEL # 13 |
| 15:36 | 19:36 | 1900 | 697 | | | | | | | Restarted p-cable software/ FGSP after restart, |
| 15:36 | 19:36 | 1900 | 697 | | | | | | | GeoEEL #13 disabled |
| 15:38 | 19:38 | 1916 | 713 | | | | | | 682 | High leakage but data still coming in |
| 15:49 | 19:49 | 2024 | 821 | | | | | | 722 | |
| 15:58 | 19:58 | 2124 | 921 | | | | | | 716 | |
| 16:05 | 20:05 | 2204 | 1001 | | | | | | | Power down for turtle, LGSP |
| 16:07 | 20:07 | 2224 | 1021 | | | | | | 727 | |
| 16:11 | 20:11 | 2266 | 1063 | | | | | | | Full power (700in3), FGSP |
| 16:14 | 20:14 | 2301 | 1098 | | | | | | 735 | |

| NCS SubSea Navigating the Future | | | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date: 24-Jun-15 | | | | Line Number: 2164 | | | Water Depth(m): 23.6 |
| | | | Client: Columbia University | | | | Line Azimuth: 304° | | | Mean Velocity: 1500m/s |
| | | | Area: New Jersey | | | | Sequence No 67 | | | Vessel Speed: 4.0 kt |
| | | | Vessel: R/V Marcus Langseth | | | | Observers: Ard / Curtis | | | **Sea(m): 1.0 Wind (kts): S 10.3** |
| 16:20 | 20:20 | 2366 | | | | | | | | Missed shot |
| 16:23 | 20:23 | 2401 | 1198 | | | | | | 740 | |
| 16:32 | 20:32 | 2501 | 1298 | | | | | | 744 | |
| 16:40 | 20:40 | 2601 | 1398 | | | | | | 748 | |
| 16:49 | 20:49 | 2701 | 1498 | | | | | | 746 | |
| 17:07 | 21:07 | 2901 | 1698 | | | | | | 746 | |
| 17:25 | 21:25 | 3101 | 1898 | | | | | | 747 | |
| 17:43 | 21:43 | 3301 | 2098 | | | | | | 746 | |
| 18:01 | 22:01 | 3501 | 2298 | | | | | | 747 | |
| 18:18 | 22:18 | 3701 | 2498 | | | | | | 747 | |
| 18:37 | 22:37 | 3922 | 2718 | | | | | | 747 | |
| 18:55 | 22:55 | 4127 | 2923 | | | | | | 749 | |
| 19:13 | 23:13 | 4327 | 3123 | | | | | | 747 | |
| 19:31 | 23:31 | 4527 | 3323 | | | | | | 748 | |
| 19:50 | 23:50 | 4747 | 3543 | | | | | | 746 | |
| 20:07 | 0:07 | 4947 | 3743 | | | | | | 744 | |
| 20:13 | 00:13 | 5016 | 3812 | | | | | | | Nav string received for 3813 before 3812 was |
| 20:13 | 00:13 | 5017 | 3813 | | | | | | | saved, no missing data |
| 20:24 | 00:24 | 5137 | 3933 | 2.8 | 2.9 | 2.2 | 23.6 | 302.33 | 747 | EOL/LGSP |
| | | | | | | | | | | |
| | | | ***Some files are alpha numeric*** | | | | | | | Average RMS Noise: 48.47 µBar |
| | | | | | | | | | | Peak RMS Noise: 142.53 µBar |

NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

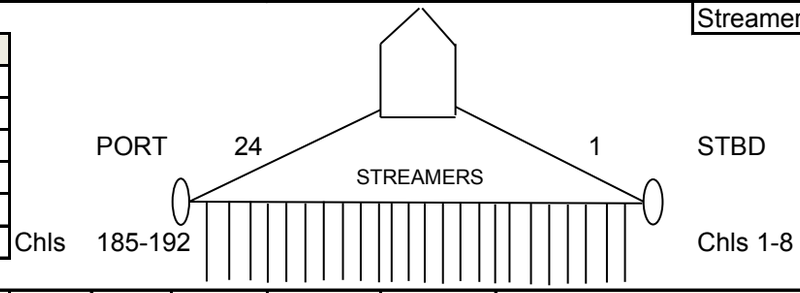
| | | |
|---|---|---|
| Date: 24-Jun-15 | Line Number: 2164 | Water Depth(m): 23.6 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 67 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1.0 Wind (kts): S 10.3** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | |
|---|---|---|---|
| Date: 25-Jun-15 | Line Number: 1324 | Water Depth(m): | |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s | |
| Area: New Jersey | Sequence No 68 | Vessel Speed: 4.0 kt | |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 0.5 Wind (kts): SSW 10** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 21:30 | 01:30 | 5131 | 1 | 3.4 | 3.5 | 2.2 | 20.9 | 123.45 | 745 | SOL/FGSP (CH #117 noisy and leakage high) - Cable #13 Channels OFF |
| 22:18 | 02:18 | 4631 | 501 | 3.6 | 3.9 | 2.4 | 25.59 | 123.14 | 749 | |
| 23:06 | 03:06 | 4131 | 1001 | 3.3 | 4 | 2.6 | 30.97 | 120.52 | 748 | |
| 23:57 | 3:57 | 3591 | 1541 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP - File Incomplete - Section #7 No COMM |
| 0:02 | 4:02 | 3529 | 1564 | ----- | ----- | ----- | ----- | ----- | ----- | FGSP - After GeoEel Restart |
| 0:30 | 4:30 | 3220 | 1873 | 3.1 | 3.6 | 2.2 | 32.88 | 122.84 | 748 | |
| 1:55 | 5:55 | 2264 | 2829 | 3.3 | 3.2 | 2.5 | 29.30 | 127.66 | 747 | |
| 2:31 | 6:31 | 1850 | 3243 | 2.8 | 3.1 | 2.3 | 37.98 | 124.84 | 745 | |
| 3:33 | 7:33 | 1156 | 3937 | 2.8 | 3.1 | 2.4 | 52.01 | 117.35 | 744 | |
| 3:58 | 7:58 | 865 | 4228 | 2.9 | 3.5 | 2.3 | 57.5 | 128.2 | 747 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 41.64 µBar |
| | | | | | | | | | | Peak RMS Noise: 127.71 µBar |
| | | | | | | | | | | |

NCS SubSea
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 25-Jun-15 | Line Number: 1324 | Water Depth(m): |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 68 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 0.5 Wind (kts): SSW 10** |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
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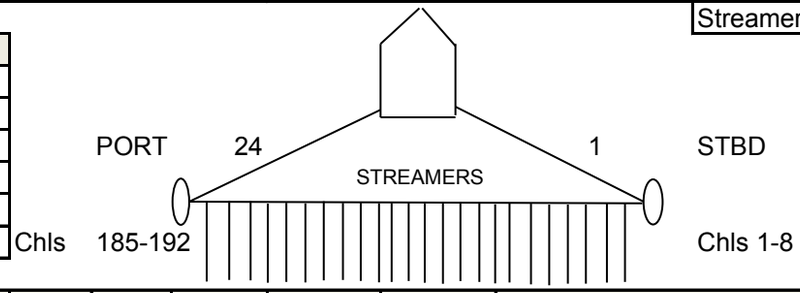
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 25-Jun-15 | Line Number: 2116 | Water Depth(m): 53.8 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 69 | Vessel Speed: 4.4 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski | **Sea(m): 0.5 Wind (kts): NNW 8.8** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 05:27 | 09:27 | 1109 | 1 | 3.2 | 3.4 | 2.4 | 53.8 | 309.9 | 771 | SOL/FGSP (CH #117 noisy and leakage high) - Cable #13 &16 Channels OFF Due to Failure |
| 05:42 | 09:42 | 1260 | 152 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP - NCS Navigation Stopped due to Compass Issue |
| 05:45 | 09:45 | 1287 | 154 | ----- | ----- | ----- | ----- | ----- | ----- | FGSP - All systems up and logging |
| 7:00 | 11:00 | 2021 | 888 | 3.3 | 3.6 | 2.4 | 28.00 | 305.63 | 775 | |
| 7:54 | 11:54 | 2580 | 1447 | 3.3 | 3.8 | 2.6 | 29.02 | 305.05 | 775 | |
| 8:30 | 12:30 | 2976 | 1843 | ----- | ----- | ----- | ----- | ----- | ----- | Turned off of line for Fishing Gear ahead |
| 9:04 | 13:04 | 3358 | 2225 | 3.1 | 2.8 | 2.0 | 29.58 | 306.69 | 775 | |
| 9:06 | 13:06 | 3380 | 2247 | ----- | ----- | ----- | ----- | ----- | ----- | Came back onto line |
| 10:27 | 14:27 | 4326 | 3193 | 3.1 | 3.1 | 2.4 | 27.39 | 303.9 | 758 | |
| 10:45 | 14:45 | 4540 | 3407 | ----- | ----- | ----- | ----- | ----- | 774 | EOL/LGSP (Ended early due to failure of cable 10) |
| 10:57 | 14:57 | 4667 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | |
| | | | | | | | | | | Average RMS Noise: µBar |
| | | | | | | | | | | Peak RMS Noise: µBar |

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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

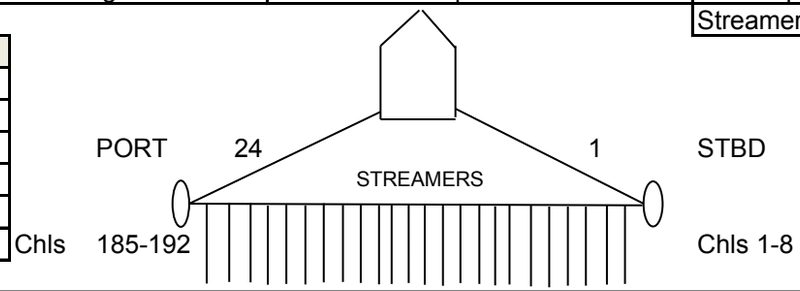
| | | |
|---|---|---|
| Date: 25-Jun-15 | Line Number: 2116 | Water Depth(m): 53.8 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 69 | Vessel Speed: 4.4 kts |
| Vessel: R/V Marcus Langseth | Observers: Ard / Koprowski | **Sea(m): 0.5 Wind (kts): NNW 8.8** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| Date: | 26-Jun-15 | Line Number: | 2068 | Water Depth(m): | 53.1 |
| Client: | Columbia University | Line Azimuth: | 304.4° | Mean Velocity: | 1500m/s |
| Area: | New Jersey | Sequence No | 70 | Vessel Speed: | 4.0 kt |
| Vessel: | R/V Marcus Langseth | Observers: | Ard / Curtis / Koprowski | **Sea(m): 0.5 Wind (kts): S 8.6** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 21:06 | 01:06 | 872 | 1 | 3.3 | 3.7 | 2.6 | 53.1 | 306.15 | 0 | SOL (CH #55,117,186 noisy) |
| 21:06 | 01:06 | 873 | 3 | ----- | ----- | ----- | ----- | ----- | 0 | FGSP |
| 22:06 | 02:06 | 1536 | 666 | 3.2 | 3.6 | 2.7 | 33.3 | 304 | 0 | |
| 22:47 | 02:47 | 1992 | 1122 | 3.5 | 3.9 | 2.7 | 28.82 | 302.84 | 0 | |
| 23:06 | 03:06 | 2191 | 1321 | ----- | ----- | ----- | ----- | ----- | ----- | Gun 9, no fire until SP 2202 (480 in3) |
| 23:07 | 03:07 | 2202 | 1332 | ----- | ----- | ----- | ----- | ----- | ----- | Gun 9 turned off turned on gun 10 (700in3) |
| 0:09 | 4:09 | 2898 | 2028 | 3.3 | 3.7 | 2.6 | 28.32 | 300.48 | 0 | |
| 1:35 | 5:35 | 3855 | 2987 | 3.3 | 3.5 | 2.5 | 29.39 | 301.69 | 1 | |
| 2:22 | 6:22 | 4380 | 3512 | 3.2 | 3.8 | 2.5 | 28.03 | 302.5 | 0 | |
| 3:15 | 7:15 | 4957 | 4089 | 3.1 | 3.7 | 2.5 | 29.08 | 301.66 | 1 | |
| 3:32 | 7:32 | 5137 | 4269 | 3.3 | 3.5 | 2.8 | 23.2 | 303.8 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 36.79 µBar |
| | | | | | | | | | | Peak RMS Noise: 138.01 µBar |
| | | | | | | | | | | |

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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

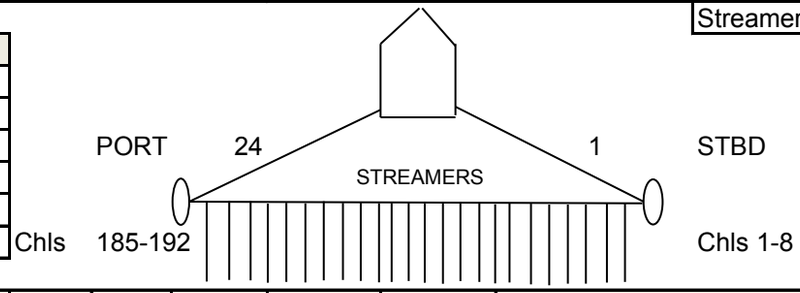
| | | |
|---|---|---|
| Date: 26-Jun-15 | Line Number: 2068 | Water Depth(m): 53.1 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 70 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0.5 Wind (kts): S 8.6** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| Date: | 26-Jun-15 | Line Number: | 1300 | Water Depth(m): | 22.5 |
| Client: | Columbia University | Line Azimuth: | 124° | Mean Velocity: | 1500m/s |
| Area: | New Jersey | Sequence No | 71 | Vessel Speed: | 4.5 kts |
| Vessel: | R/V Marcus Langseth | Observers: | Koprowski | **Sea(m): 0.5 Wind (kts): S 8.6** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 04:45 | 08:45 | 5134 | 1 | 3.1 | 3.3 | 2.4 | 22.5 | 131 | 0 | SOL / FGSP(CH #55,117,186 noisy) |
| 05:52 | 09:52 | 4392 | 743 | 3.1 | 3.6 | 2.5 | 29.42 | 120.55 | 1 | |
| 06:44 | 10:44 | 3824 | 1311 | 3.3 | 3.9 | 2.5 | 32.41 | 115.27 | 0 | |
| 7:14 | 11:14 | 3490 | 1643 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP before Network Drop / Incomplete Write |
| 7:53 | 11:53 | 3081 | 1895 | ----- | ----- | ----- | ----- | ----- | ----- | FGSP after Network errors - Restarted |
| 9:09 | 13:09 | 2235 | 2741 | 3.3 | 3.3 | 2.3 | 27.32 | 122.51 | 0 | |
| 10:12 | 14:12 | 1557 | 3419 | 3.2 | 3.4 | 2.3 | 47.23 | 117.42 | 0 | |
| 11:16 | 15:16 | 865 | 4111 | 3.2 | 3.7 | 2.3 | 55.5 | 121.7 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 40.13 µBar |
| | | | | | | | | | | Peak RMS Noise: 142.95 µBar |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

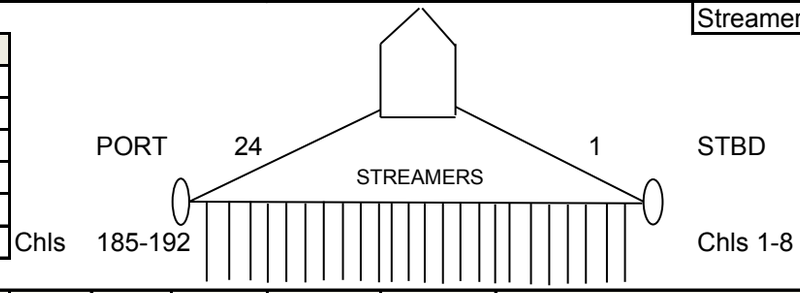
| | | |
|---|---|---|
| Date: 26-Jun-15 | Line Number: 1300 | Water Depth(m): 22.5 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 71 | Vessel Speed: 4.5 kts |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 0.5 Wind (kts): S 8.6** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 26-Jun-15 | Line Number: 2020/2020a | Water Depth(m): 53.1 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 72 | Vessel Speed: |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 0.5 Wind (kts): NE 11** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:15 | 16:15 | 872 | 1 | 3 | 3.5 | 2.4 | 53.1 | 306.73 | 0 | SOL / FGSP(CH #55,117,186 noisy) |
| 12:31 | 16:31 | 1056 | 185 | P-Cable stopped communicating/ updating | | | | | | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: µBar |
| | | | | | | | | | | Peak RMS Noise: µBar |
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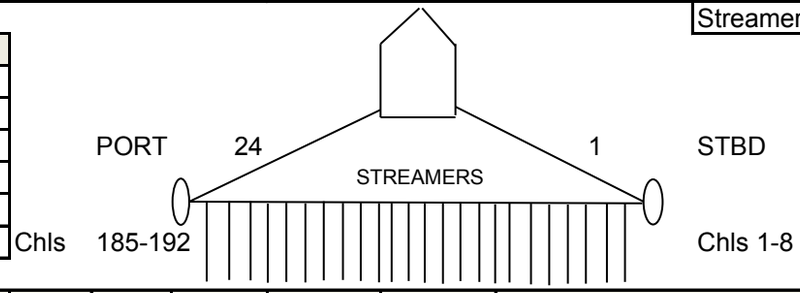
| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | |
|---|---|---|---|
| | Date: 26-Jun-15 | Line Number: 2020/2020a | Water Depth(m): 53.1 |
| | Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| | Area: New Jersey | Sequence No 72 | Vessel Speed: |
| | Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 0.5 Wind (kts): NE 11** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| Date: | 27-Jun-15 | Line Number: | 1276 | Water Depth(m): | 19.9 |
| Client: | Columbia University | Line Azimuth: | 124.4° | Mean Velocity: | 1500m/s |
| Area: | New Jersey | Sequence No | 73 | Vessel Speed: | 4.4 kt |
| Vessel: | R/V Marcus Langseth | Observers: | Ard / Curtis / Koprowski | **Sea(m): 0.5 Wind (kts): SSE 2** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 21:05 | 01:05 | 5105 | 1 | 3 | 3.7 | 2.7 | 19.9 | 122.25 | 1 | SOL/FGSP (Stm #16, ch 121-128 disabled) |
| 00:16 | 04:16 | 3052 | 2054 | 3 | 3.5 | 2.2 | 29.44 | 122.65 | 0 | CH #117 & #55 noisy |
| 01:43 | 05:43 | 2177 | 2929 | 3 | 3.8 | 2.4 | 27.17 | 117.87 | 1 | |
| 2:41 | 6:41 | 1601 | 3505 | 3.1 | 3.4 | 2.5 | 49.21 | 124.77 | 1 | |
| 3:32 | 7:32 | 1064 | 4042 | 3.1 | 3.7 | 2.6 | 51.73 | 125.03 | 1 | |
| 3:51 | 7:51 | 865 | 4241 | 3.0 | 3.8 | 2.7 | 55.9 | 121.4 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 45.58 µBar |
| | | | | | | | | | | Peak RMS Noise: 141.37 µBar |
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NCS SubSea
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

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|---|---|---|---|---|---|---|---|---|---|---|
| Date: 27-Jun-15 | | | | Line Number: | | 1276 | | | Water Depth(m): | 19.9 |
| Client: Columbia University | | | | Line Azimuth: | | 124.4° | | | Mean Velocity: | 1500m/s |
| Area: New Jersey | | | | Sequence No | | 73 | | | Vessel Speed: | 4.4 kt |
| Vessel: R/V Marcus Langseth | | | | Observers: | | Ard / Curtis / Koprowski | | | **Sea(m): 0.5 Wind (kts): SSE 2** | |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

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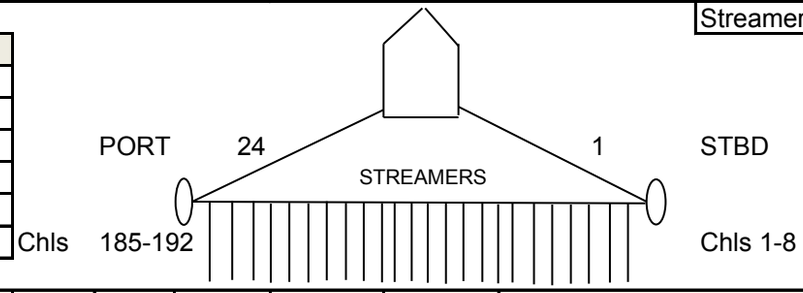
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 27-Jun-15 | Line Number: | 2020R | Water Depth(m): | 53.9 |
| | Client: Columbia University | Line Azimuth: | 304° | Mean Velocity: | 1500m/s |
| | Area: New Jersey | Sequence No | 74 | Vessel Speed: | 4.4 kt |
| | Vessel: R/V Marcus Langseth | Observers: | Koprowski | **Sea(m): 1.0 Wind (kts): ENE 14.1** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 04:53 | 08:53 | 866 | 1 | 3 | 3.1 | 2.8 | 53.9 | 311.6 | 21 | SOL/FGSP (Stm #16, ch 121-128 disabled) |
| 05:32 | 09:32 | 1296 | 431 | 2.8 | 3.4 | 2.1 | 51.29 | 307.63 | 68 | CH #117 & #55 noisy |
| 06:17 | 10:17 | 1781 | 916 | 2.9 | 3.3 | 2.6 | 28.29 | 307.29 | 7 | Reduced speed to 4.3kt and leakage dropped |
| 7:14 | 11:14 | 2376 | 1511 | 3.0 | 3.6 | 3.1 | 32.34 | 304.33 | 3 | |
| 8:22 | 12:22 | 3033 | 2168 | 3.5 | 4.3 | 3.0 | 27.9 | 309.71 | 2 | |
| 9:16 | 13:15 | 3574 | 2709 | 3.1 | 3.7 | 2.9 | 29.12 | 311.43 | 2 | |
| 10:22 | 14:22 | 4287 | 3422 | 3.1 | 3.6 | 2.6 | 27.07 | 305.81 | 2 | |
| 11:22 | 15:22 | 4949 | 4084 | 3.0 | 3.6 | 2.6 | 27.42 | 302.4 | 2 | |
| 11:39 | 15:39 | 5137 | 4272 | 3.4 | 3.5 | 2.5 | 21.5 | 308.9 | 2 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 39.67 µBar |
| | | | | | | | | | | Peak RMS Noise: 140.98 µBar |
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NCS SubSea
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

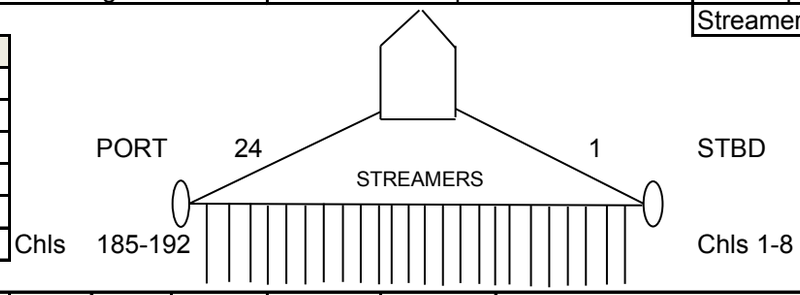
| | | |
|---|---|---|
| Date: 27-Jun-15 | Line Number: 2020R | Water Depth(m): 53.9 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 74 | Vessel Speed: 4.4 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 1.0 Wind (kts): ENE 14.1** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 27-Jun-15 | Line Number: 1252 | Water Depth(m): 20.8 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 75 | Vessel Speed: 4.4 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/ Curtis | **Sea(m): 1.0 Wind (kts): SW 15** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:43 | 16:43 | 5130 | 1 | 2.8 | 3.3 | 2.3 | 20.8 | 122.63 | 2 | SOL/FGSP (Stm #16, ch 121-128 disabled) |
| 13:34 | 17:34 | 4587 | 544 | 3 | 3.7 | 2.6 | 25.57 | 120.13 | 2 | CH #117, & #55 noisy |
| 14:25 | 18:25 | 4052 | 1079 | 2.8 | 3.3 | 2.4 | 32.14 | 125.28 | 2 | |
| 15:11 | 19:11 | 3552 | 1579 | 2.5 | 3.5 | 2.1 | 30.46 | 120.02 | 2 | |
| 16:16 | 20:16 | 2879 | 2252 | 2.7 | 3.0 | 2.6 | 31.30 | 122.57 | 2 | |
| 17:53 | 21:53 | 1840 | 3291 | 3 | 2.8 | 2.6 | 40.53 | 122.21 | 2 | |
| 18:39 | 22:39 | 1340 | 3791 | 2.7 | 3.2 | 2.2 | 50.2 | 119.46 | 2 | |
| 19:22 | 23:22 | 865 | 4266 | 2.5 | 3.5 | 2.3 | 56 | 126.5 | 2 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 51.51 µBar |
| | | | | | | | | | | Peak RMS Noise: 161.24 µBar |
| | | | | | | | | | | |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

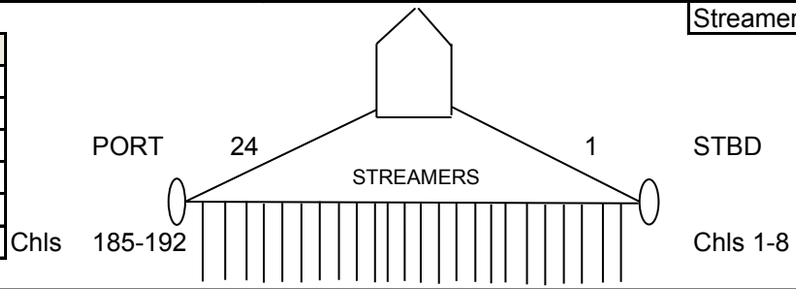
| | | |
|---|---|---|
| Date: 27-Jun-15 | Line Number: 1252 | Water Depth(m): 20.8 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 75 | Vessel Speed: 4.4 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/ Curtis | **Sea(m): 1.0 Wind (kts): SW 15** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 28-Jun-15 | Line Number: 1996 | Water Depth(m): 53.6 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 76 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 2-3 Wind (kts): E 23** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 20:23 | 00:23 | 873 | 1 | 2.5 | 3 | 2.7 | 53.6 | 307.12 | 2 | SOL/FGSP (Stm #16, ch 121-128 disabled) |
| 21:18 | 01:18 | 1472 | 600 | 3.1 | 3.4 | 2.4 | 47.06 | 310.43 | 2 | CH #117 & #55 noisy |
| 22:23 | 02:13 | 2072 | 1200 | 2.2 | 2.6 | 2.7 | 28 | 305 | 5 | |
| 23:06 | 3:06 | 2672 | 1800 | 2.4 | 3.6 | 2.2 | 28.81 | 306.59 | 16 | |
| 0:02 | 4:02 | 3304 | 2432 | 3.0 | 3.8 | 2.1 | 27.37 | 304.12 | 3 | |
| 1:32 | 5:32 | 4363 | 3491 | 3.0 | 3.1 | 3.4 | 27.82 | 301.49 | 2 | |
| 2:18 | 6:18 | 4816 | 3944 | 2.8 | 3.4 | 3.0 | 29.9 | 300.7 | 1 | |
| 2:48 | 6:48 | 5137 | 4265 | 2.8 | 3.1 | 2.6 | 22.7 | 301.6 | 2 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 67.48 µBar |
| | | | | | | | | | | Peak RMS Noise: 174.29 µBar |
| | | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

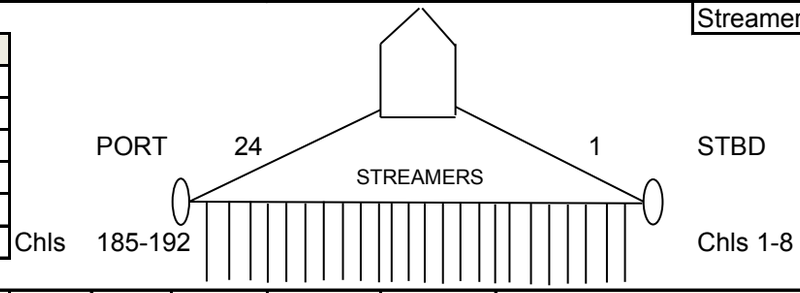
| | | |
|---|---|---|
| Date: 28-Jun-15 | Line Number: 1996 | Water Depth(m): 53.6 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 76 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 2-3 Wind (kts): E 23** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 28-Jun-15 | Line Number: 1228 | Water Depth(m): 20 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 77 | Vessel Speed: 4.4 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 2-2.5 Wind (kts): S 8.0** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 03:50 | 07:50 | 5134 | 1 | 2.5 | 3.5 | 2.4 | 20 | 127.7 | 2 | SOL/FGSP (Stm #16, ch 121-128 disabled) CH #117, #55 noisy |
| 05:00 | 09:00 | 4390 | 744 | 3.1 | 3.2 | 2.7 | 28.5 | 130.3 | 1 | |
| 06:01 | 10:01 | 3741 | 1393 | 3.1 | 3.9 | 3.3 | 30.15 | 127.29 | 2 | |
| 7:13 | 11:13 | 2976 | 2157 | 3.1 | 3.6 | 2.5 | 31.87 | 119.01 | 2 | |
| 8:22 | 12:22 | 2219 | 2913 | 2.7 | 3.8 | 2.7 | 26.72 | 122.36 | 3 | |
| 9:23 | 13:23 | 1525 | 3607 | 2.8 | 3.8 | 2.6 | 50.89 | 117.29 | 2 | |
| 10:22 | 14:22 | 865 | 4267 | 2.6 | 3.4 | 2.7 | 55.1 | 130.2 | 2 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 63.08 µBar |
| | | | | | | | | | | Peak RMS Noise: 171.94 µBar |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

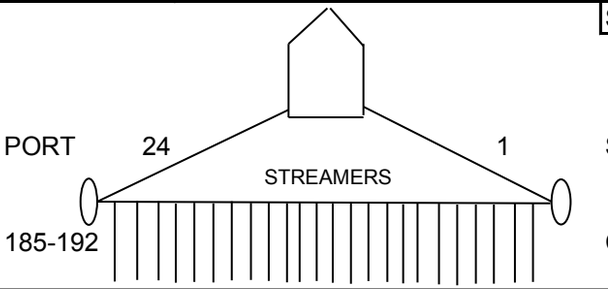
| | | |
|---|---|---|
| Date: 28-Jun-15 | Line Number: 1228 | Water Depth(m): 20 |
| Client: Columbia University | Line Azimuth: 124° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 77 | Vessel Speed: 4.4 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 2-2.5 Wind (kts): S 8.0** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 28-Jun-15 | Line Number: 2188 | Water Depth(m): 53.1 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 78 | Vessel Speed: 4.6 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/ Curtis / Koprowski | **Sea(m): 2 Wind (kts): SW 22.8** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | |
|---|---|
| Reference Point: | Stern |
| CRP to Stern: | -30.67 m |
| Stern to Stbd Paravane: | 325 m |
| Stern to Port Paravane: | 315 m |
| Spread (strmr 1 to 24): | 287.5 m |
| Stern to Source: | 275 m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 11:33 | 15:33 | 857 | 1 | 2.4 | 2.6 | 2.6 | 53.1 | 307.3 | 2 | SOL/FGSP (Stm #16, ch 121-128 disabled & ch 117, 55 noisy) |
| 12:18 | 16:18 | 1357 | 500 | 2.1 | 2.7 | 2.1 | 48.89 | 307.72 | 2 | |
| 13:02 | 17:02 | 1857 | 1000 | 2.8 | 2.5 | 2.4 | 33.19 | 308.27 | 2 | |
| 13:47 | 17:47 | 2373 | 1517 | 2.8 | 3.4 | 2.2 | 30.93 | 305.67 | 3 | |
| 14:31 | 18:31 | 2882 | 2026 | 2.9 | 2.7 | 2.6 | 28.66 | 310.29 | 3 | |
| 15:20 | 19:20 | 3438 | 2582 | | | | | | | Last full volume, power down for turtle |
| 15:26 | 19:26 | 3503 | 2647 | | | | | | | First full volume (700 in3) |
| 15:59 | 19:59 | 3869 | 3013 | 3.6 | 2.9 | 2.7 | 29.08 | 306.31 | 2 | |
| 17:20 | 21:20 | 4745 | 3889 | 2.9 | 3.6 | 2.5 | 28.49 | 304.85 | 2 | |
| 17:59 | 21:59 | 5137 | 4281 | 3.1 | 3.7 | 2.5 | 24.6 | 300.88 | 2 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 82.09 µBar |
| | | | | | | | | | | Peak RMS Noise: 173.25 µBar |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

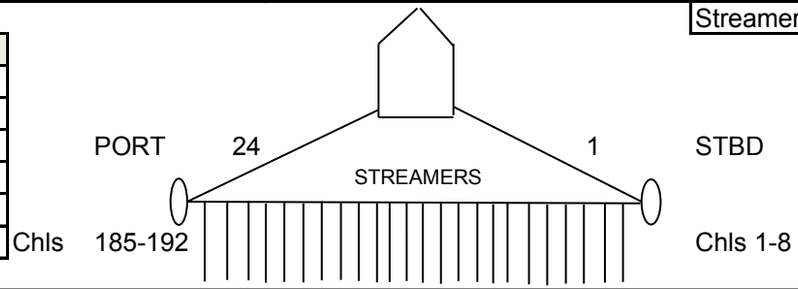
| | | |
|---|---|---|
| Date: 28-Jun-15 | Line Number: 2188 | Water Depth(m): 53.1 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 78 | Vessel Speed: 4.6 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard/ Curtis / Koprowski | **Sea(m): 2 Wind (kts): SW 22.8** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 28-Jun-15 | Line Number: 1204 | Water Depth(m): 20.8 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 79 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 2 Wind (kts): SW 17** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | |
|---|---|
| Reference Point: | Stern |
| CRP to Stern: | -30.67 m |
| Stern to Stbd Paravane: | 325 m |
| Stern to Port Paravane: | 315 m |
| Spread (strmr 1 to 24): | 287.5 m |
| Stern to Source: | 275 m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 19:12 | 23:12 | 5133 | 3 | 2.1 | 3.1 | 2.8 | 20.8 | 125.46 | 2 | SOL/FGSP (Stm #16, ch 121-128 disabled & ch 117, 55 noisy) |
| 19:22 | 23:22 | 5029 | 107 | | | | | | 2 | Bad shot, missing serial string |
| 19:45 | 23:45 | 4769 | 367 | | | | | | | P-cable software froze up/ network slow, LGSP |
| 01:44 | 05:44 | 865 | ----- | ----- | ----- | ----- | 55.8 | 135.07 | ----- | EOL |
| | | | | | | | | | | Average RMS Noise: µBar |
| | | | | | | | | | | Peak RMS Noise: µBar |
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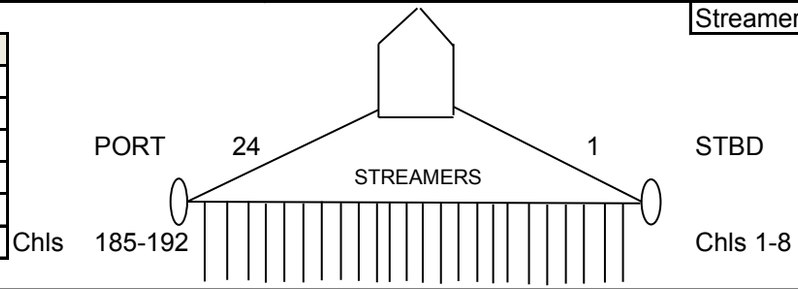
| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | |
|---|---|---|---|
| | Date: 28-Jun-15 | Line Number: 1204 | Water Depth(m): 20.8 |
| | Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| | Area: New Jersey | Sequence No 79 | Vessel Speed: 4.0 kt |
| | Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 2 Wind (kts): SW 17** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 30-Jun-15 | Line Number: 1948 | Water Depth(m): 32 |
| Client: Columbia University | Line Azimuth: 124.4$^{0}$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 80 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1 Wind (kts): SE 15** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17:18 | 21:18 | 2454 | | 3.7 | 4.2 | 2.5 | 32 | 124 | 0 | SOL |
| 17:19 | 21:19 | 2444 | 1 | 3.7 | 4.2 | 2.5 | 31.9 | 125.8 | -1 | FGSP |
| 17:48 | 21:48 | 2178 | 267 | | | | | | | CH 47 noisy |
| 18:17 | 22:17 | 1905 | 540 | 3.3 | 4.1 | 2.8 | 31.29 | 131.51 | -1 | |
| 19:07 | 23:07 | 1405 | 1040 | 3.3 | 3.6 | 2.5 | 49.3 | 125 | 0 | |
| 19:51 | 23:51 | 951 | 1494 | 3.4 | 3.7 | 2.5 | 67.6 | 124 | -1 | LGSP/EOL |
| | | | | | | | | | | Average RMS Noise: 37.82 µBar |
| | | | | | | | | | | Peak RMS Noise: 107.86 µBar |
| | | | | | | | | | | |
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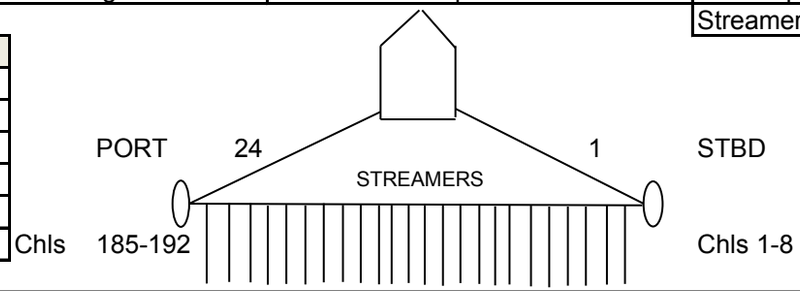
| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | |
|---|---|---|---|
| | Date: 30-Jun-15 | Line Number: 1948 | Water Depth(m): 32 |
| | Client: Columbia University | Line Azimuth: 124.4$^{0}$ | Mean Velocity: 1500m/s |
| | Area: New Jersey | Sequence No 80 | Vessel Speed: 4.0 kt |
| | Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1 Wind (kts): SE 15** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 1-Jul-15 | Line Number: | 2140 | Water Depth(m): | 54.5 |
| | Client: Columbia University | Line Azimuth: | 304.4° | Mean Velocity: | 1500m/s |
| | Area: New Jersey | Sequence No | 81 | Vessel Speed: | 4.5 kt |
| | Vessel: R/V Marcus Langseth | Observers: | Ard / Curtis / Koprowski | **Sea(m): 0.5 Wind (kts): SE 4.6** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 21:33 | 01:33 | 869 | 1 | 2.8 | 3.4 | 2.4 | 54.5 | 302.22 | 0 | SOL/FGSP |
| 22:18 | 02:18 | 1369 | 501 | 3 | 3.3 | 2.1 | 49.85 | 306.57 | -1 | |
| 23:05 | 03:05 | 1869 | 1001 | 3.1 | 3.5 | 2.4 | 32 | 306 | 0 | |
| 00:11 | 04:11 | 2555 | 1687 | 3 | 3.3 | 1.8 | 28.28 | 311.33 | 0 | |
| 01:27 | 05:27 | 3358 | 2490 | 3.3 | 3.5 | 2.5 | 29.79 | 304.27 | -21 | |
| 02:53 | 06:53 | 4274 | 3406 | 3.2 | 3.3 | 2.3 | 27.75 | 301.21 | 1 | |
| 03:48 | 07:48 | 4890 | 4022 | 3.2 | 3.1 | 1.9 | 27.65 | 300.49 | 0 | |
| 04:01 | 08:01 | 5041 | 4173 | 3.2 | 3.2 | 2.5 | 29.2 | 305.5 | 2 | LGSP/EOL |
| | | | | | | | | | | Average RMS Noise: 39.54 µBar |
| | | | | | | | | | | Peak RMS Noise: 131.49 µBar |
| | | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

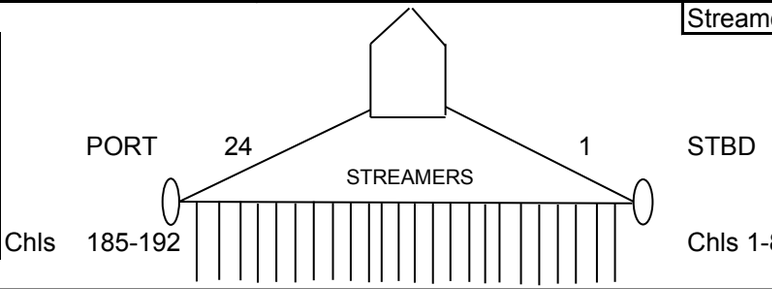
| | | |
|---|---|---|
| Date: 1-Jul-15 | Line Number: 2140 | Water Depth(m): 54.5 |
| Client: Columbia University | Line Azimuth: 304.4$^{0}$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 81 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0.5 Wind (kts): SE 4.6** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 1-Jul-15 | Line Number: 1972 | Water Depth(m): 23.4 |
| Client: Columbia University | Line Azimuth: 124.4$^0$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 82 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 0.5 Wind (kts): WSW 16.1** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | |
|---|---|
| Reference Point: | Stern |
| CRP to Stern: | -30.67 m |
| Stern to Stbd Paravane: | 325 m |
| Stern to Port Paravane: | 315 m |
| Spread (strmr 1 to 24): | 287.5 m |
| Stern to Source: | 275 m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 05:13 | 09:13 | 5135 | 1 | 2.7 | 3.3 | 2.1 | 23.4 | 136.3 | 2 | SOL/FGSP |
| 06:01 | 10:01 | 4616 | 520 | 3.5 | 3.3 | 2.6 | 27.08 | 131.5 | 0 | |
| 06:58 | 10:58 | 4000 | 1136 | 3.1 | 3.5 | 2.5 | 34.89 | 133.14 | 0 | |
| 08:13 | 12:13 | 3184 | 1952 | 3.4 | 3.7 | 2.4 | 28.66 | 134.97 | 0 | |
| 09:14 | 13:14 | 2508 | 2628 | 3.2 | 4 | 2.6 | 30.91 | 133.39 | 1 | |
| 10:06 | 14:06 | 1913 | 3223 | ----- | ----- | ----- | ----- | ----- | ----- | Noise on record from Navy Vessel - Live Weapons Firing Test (6 miles away) |
| 11:13 | 15:13 | 1137 | 3999 | 3.3 | 3.4 | 2.5 | 50.28 | 127.43 | 2 | |
| 11:18 | 15:18 | 1087 | 4047 | ----- | ----- | ----- | ----- | ----- | ----- | Power Down for Turtle - Mit Gun ON LGSP |
| 11:24 | 15:24 | 1018 | 4118 | ----- | ----- | ----- | ----- | ----- | ----- | Full Source after power down FGSP |
| 11:29 | 15:29 | 961 | 4175 | 3.3 | 4.1 | 2.6 | 52.7 | 127.9 | 1 | LGSP/EOL |
| | | | | | | | | | | Average RMS Noise: 38.03 µBar |
| | | | | | | | | | | Peak RMS Noise: 117.36 µBar |
| | | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

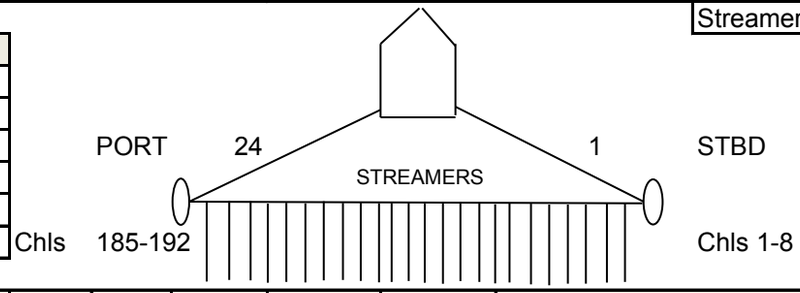
| | | |
|---|---|---|
| Date: 1-Jul-15 | Line Number: 1972 | Water Depth(m): 23.4 |
| Client: Columbia University | Line Azimuth: 124.4$^{0}$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 82 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 0.5 Wind (kts): WSW 16.1** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 1-Jul-15 | Line Number: 2092 | Water Depth(m): 52.1 |
| Client: Columbia University | Line Azimuth: 304.4$^0$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 83 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curis | **Sea(m): 0.5 Wind (kts): SW 12** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:46 | 16:46 | 933 | 1 | 3.5 | 3.8 | 2.7 | 52.1 | 305.63 | 0 | SOL/FGSP |
| 12:51 | 16:50 | 968 | 36 | | | | | | | Missing section error/ LGSP |
| 12:56 | 16:56 | 1028 | 84 | | | | | | | FGSP after reset |
| 13:20 | 17:20 | 1257 | 313 | | | | | | | Power down for turtle (40in3) |
| 13:23 | 17:23 | 1291 | 347 | | | | | | | Missing section error/ LGSP |
| 13:25 | 17:25 | 1315 | 365 | | | | | | | FGSP after reset |
| 13:26 | 17:26 | 1329 | | | | | | | | Full power (700in3) |
| 14:51 | 18:51 | 2244 | 1280 | 3 | 3.3 | 2.4 | 28.06 | 305.7 | -2 | |
| 15:34 | 19:34 | 2730 | 1766 | 2.7 | 3 | 2.4 | 29.52 | 306.2 | 1 | |
| 17:03 | 21:03 | 3735 | 2771 | 2.7 | 3 | 2.4 | 31.42 | 302.08 | 0 | |
| 18:07 | 22:07 | 4413 | 3449 | 2.8 | 3.5 | 2.2 | 29.58 | 300.49 | 1 | |
| 18:34 | 22:34 | 4693 | 3729 | | | | | | | Lost GPS corrections for vanes and tri-points |
| 18:43 | 22:43 | 4785 | 3821 | | | | | | | Re-booted antennas, GPS corrections restored |
| 19:08 | 23:08 | 5041 | 4077 | 2.7 | 3 | 2.4 | 30.7 | 304 | 0 | LGSP/EOL |
| | | | | | | | | | | Average RMS Noise: 40.69 µBar |

| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | |
|---|---|---|---|
| | Date: 1-Jul-15 | Line Number: 2092 | Water Depth(m): 52.1 |
| | Client: Columbia University | Line Azimuth: 304.4$^{0}$ | Mean Velocity: 1500m/s |
| | Area: New Jersey | Sequence No 83 | Vessel Speed: 4.5 kt |
| | Vessel: R/V Marcus Langseth | Observers: Ard / Curis | **Sea(m): 0.5 Wind (kts): SW 12** |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Peak RMS Noise: 128.19 µBar |
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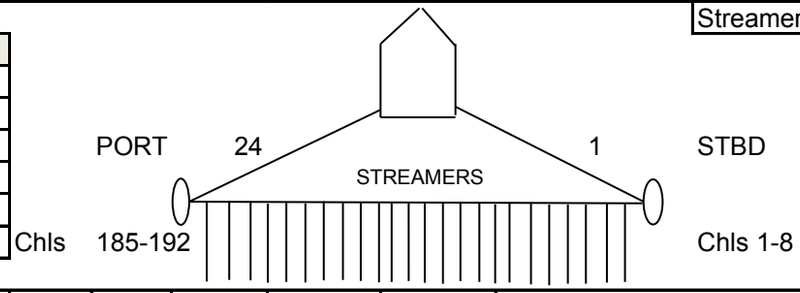
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 1-Jul-15 | Line Number: 1420R | Water Depth(m): 28.9 |
| Client: Columbia University | Line Azimuth: 124.4$^0$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 84 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curis | **Sea(m): 0.5 Wind (kts): SW 19.4** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 0.5 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | |
|---|---|
| Reference Point: | Stern |
| CRP to Stern: | -30.67 m |
| Stern to Stbd Paravane: | 325 m |
| Stern to Port Paravane: | 315 m |
| Spread (strmr 1 to 24): | 287.5 m |
| Stern to Source: | 275 m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 19:53 | 23:53 | 5036 | 1 | 2.9 | 3.2 | 2.6 | 28.9 | 126.93 | 0 | SOL/FGSP |
| 20:37 | 00:37 | 4535 | 502 | | | | | | | lost comms with GeoEels past 12 |
| 20:44 | 00:44 | 4457 | 521 | | | | | | | Regained comms after reset (Sample rate to 1 msec) |
| 10:25 | 02:25 | 3298 | 1680 | | | | | | | lost comms with GeoEels past 12 |
| 10:44 | 02:44 | 3111 | 1723 | 3.5 | 4 | 2.5 | 31.33 | 122.31 | | Regained communiction cross cable |
| 23:48 | 03:48 | 2411 | 2423 | 2.8 | 3.3 | 2.4 | 30.39 | 127.39 | 2 | |
| 00:54 | 04:54 | 1704 | 3130 | 2.8 | 3.3 | 2.8 | 40.77 | 125.42 | -3 | |
| 01:56 | 05:56 | 1044 | 3790 | | | | | | | LGSP before loss of comms on JB 13-24 |
| 02:00 | 06:01 | 985 | 3847 | 3.2 | 3.1 | N/A | 53.8 | 132 | 1 | EOL |
| | | | | | | | | | | Average RMS Noise: 34.43 µBar |
| | | | | | | | | | | Peak RMS Noise: 110.73 µBar |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

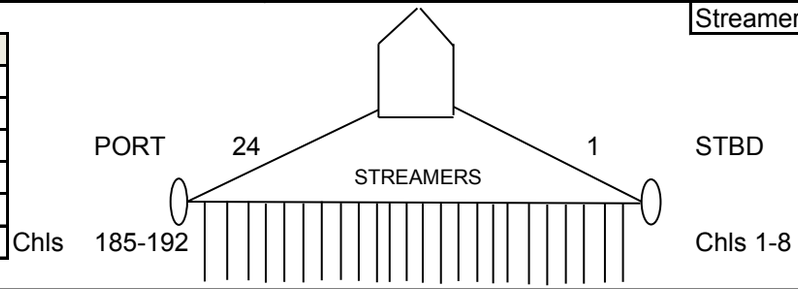
| | | |
|---|---|---|
| Date: 1-Jul-15 | Line Number: 1420R | Water Depth(m): 28.9 |
| Client: Columbia University | Line Azimuth: 124.4$^{0}$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 84 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curis | **Sea(m): 0.5 Wind (kts): SW 19.4** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 2-Jul-15 | Line Number: 2044 | Water Depth(m): 52.8 |
| Client: Columbia University | Line Azimuth: 304$^0$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 85 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 0.5 Wind (kts): NW 5.8** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1.0 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 02:55 | 06:55 | 865 | 1 | 3.1 | 3.3 | 2.1 | 52.8 | 302.4 | 0 | SOL/FGSP |
| 03:01 | 07:01 | 931 | 67 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP - GeoEel Restarted |
| 03:27 | 07:27 | 1209 | 1 | ----- | ----- | ----- | ----- | ----- | ----- | FGSP - After Troubleshootng Network Slow / Drop Sections (Random) - Started New Survey 2044_2 |
| 04:18 | 08:18 | 1727 | 519 | 2.7 | 3.4 | 2.4 | 30.31 | 303.98 | 0 | |
| 05:05 | 09:05 | 2210 | 1002 | 3.1 | 3.4 | 2.2 | 28.39 | 205.32 | 1 | |
| 06:09 | 10:09 | 2911 | 1703 | 3.3 | 3.7 | 2.4 | 28.86 | 303.77 | 0 | |
| 06:38 | 10:38 | 3210 | 2002 | 2.9 | 3.4 | 2.6 | 27.09 | 303.31 | -1 | |
| 07:37 | 11:37 | 3815 | 2607 | 2.8 | 3.3 | 2.2 | 31.51 | 304.62 | 0 | |
| 08:28 | 12:28 | 4286 | 3078 | 3.2 | 3.8 | 2.5 | 28.11 | 305.58 | 2 | |
| 09:29 | 13:29 | 4873 | 3665 | 3 | 3.1 | 2.3 | 29.05 | 303.92 | 1 | |
| 09:47 | 13:47 | 5041 | 3833 | 3.3 | 3.7 | 2.6 | 28.9 | 305.5 | 1 | LGSP / EOL (Wind: NE 7.7 / Seas: 0.5m) |
| | | | | | | | | | | Average RMS Noise: 35.83 µBar |
| | | | | | | | | | | Peak RMS Noise: 122.89 µBar |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

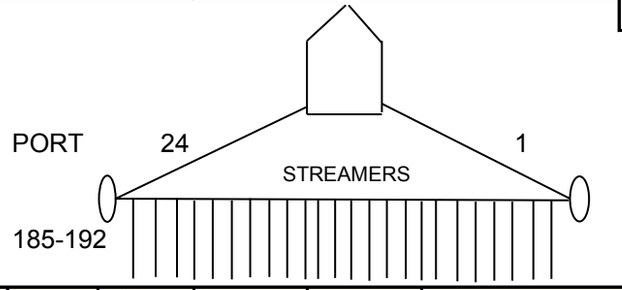
| | | |
|---|---|---|
| Date: 2-Jul-15 | Line Number: 2044 | Water Depth(m): 52.8 |
| Client: Columbia University | Line Azimuth: $304^0$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 85 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 0.5 Wind (kts): NW 5.8** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 2-Jul-15 | Line Number: 1948A | Water Depth(m): 22.6 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 86 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski / Ard / Curtis | **Sea(m): 0.5 Wind (kts): NE 9.1** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1.0 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | |
|---|---|
| Reference Point: | Stern |
| CRP to Stern: | -30.67 m |
| Stern to Stbd Paravane: | 325 m |
| Stern to Port Paravane: | 315 m |
| Spread (strmr 1 to 24): | 287.5 m |
| Stern to Source: | 275 m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:56 | 14:56 | 5137 | 1 | 3.4 | 3.6 | 2.6 | 22.6 | 124.7 | -1 | SOL/FGSP |
| 11:45 | 15:45 | 4627 | 511 | 3.5 | 3.8 | 2.5 | 25.66 | 121.6 | 1 | |
| 14:00 | 18:00 | 3208 | 1930 | 2.9 | 3.2 | 2.2 | 27.02 | 126.1 | 1 | |
| 14:47 | 18:47 | 2708 | 2430 | 3.1 | 3.1 | 2.4 | 28.53 | 126.4 | 0 | |
| 15:16 | 19:16 | 2404 | 2732 | 3 | 3 | 2.2 | 31.5 | 125.2 | 0 | LGSP / EOL |
| | | | | | | | | | | Average RMS Noise: 35.48 µBar |
| | | CH# 55 and 161 failed capacitance and leakage test | | | | | | | | Peak RMS Noise: 119.67 µBar |
| | | | | | | | | | | |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

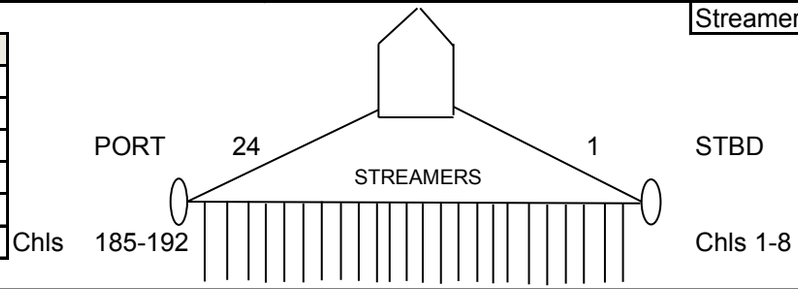
| | | |
|---|---|---|
| Date: 2-Jul-15 | Line Number: 1948A | Water Depth(m): 22.6 |
| Client: Columbia University | Line Azimuth: 124.4$^{o}$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 86 | Vessel Speed: 4.5 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski / Ard / Curtis | **Sea(m): 0.5 Wind (kts): NE 9.1** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 2-Jul-15 | Line Number: 1300R | Water Depth(m): 33.1 |
| Client: Columbia University | Line Azimuth: 304.4$^0$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 87 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 0.5 Wind (kts): ENE13.0** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 15:52 | 19:52 | 2385 | 1 | 4.4 | 5 | 3.2 | 33.1 | 272.38 | 0 | SOL/FGSP |
| 16:52 | 20:52 | 2999 | 615 | | | | | | | GPS to vanes and tri-points fail |
| 16:54 | 20:54 | 3021 | 637 | | | | | | | GPS Restored |
| 18:26 | 22:26 | 3972 | 1588 | 3.5 | 4.1 | 2.8 | 29.9 | 300.88 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 35.53 µBar |
| | | | | | | | | | | Peak RMS Noise: 91.46 µBar |
| | | | | | | | | | | |
| | | | CH# 55 and 161 failed capacitance and leakage test | | | | | | | |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

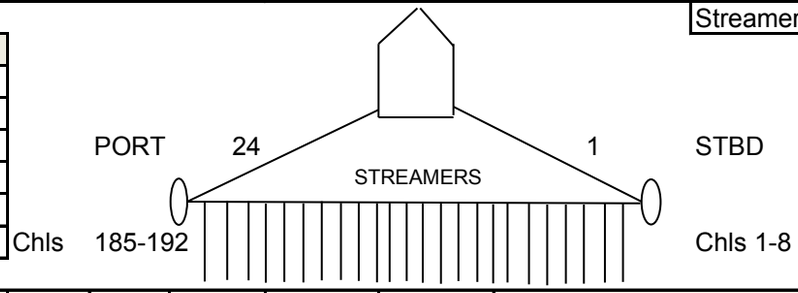
| | | |
|---|---|---|
| Date: 2-Jul-15 | Line Number: 1300R | Water Depth(m): 33.1 |
| Client: Columbia University | Line Azimuth: 304.4$^{0}$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 87 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 0.5 Wind (kts): ENE13.0** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 2-Jul-15 | Line Number: 1660R | Water Depth(m): 27.2 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 88 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0.5 Wind (kts): NE 13** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 19:51 | 23:51 | 4533 | 1 | 3 | 3.4 | 2.4 | 27.2 | 121.16 | 0 | SOL/FGSP |
| 20:08 | 00:08 | 4357 | 177 | ----- | ----- | ----- | ----- | ----- | ----- | Disarmed P-cable line |
| 20:09 | 00:09 | 4349 | 178 | ----- | ----- | ----- | ----- | ----- | ----- | Re-armed p-cable line |
| 20:42 | 0:42 | 4004 | 523 | 3.1 | 3.5 | 2.7 | 31.54 | 125.3 | 0 | |
| 22:30 | 2:30 | 2890 | 1637 | 3.8 | 4.6 | 2.9 | 292.73 | 123.08 | 0 | |
| 0:14 | 4:14 | 1853 | 2674 | 3.4 | 3.9 | 2.7 | 29.4 | 122.29 | -1 | |
| 1:29 | 5:29 | 1056 | 3471 | 3.3 | 3.8 | 2.6 | 52.24 | 117.93 | 0 | |
| 1:38 | 5:38 | 961 | 3566 | 3 | 3.5 | 2.7 | 52.5 | 106.3 | 1 | EOL/LGSP (Seas: 0.5m, Winds: N 15.7 kts) |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 33.67 µBar |
| | | | | | | | | | | Peak RMS Noise: 99.6 µBar |
| | | | | | | | | | | |
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| | | | CH# 55 and 161 failed capacitance and leakage test | | | | | | | |
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NCS SubSea
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 2-Jul-15 | Line Number: 1660R | Water Depth(m): 27.2 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 88 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Koprowski | **Sea(m): 0.5 Wind (kts): NE 13** |

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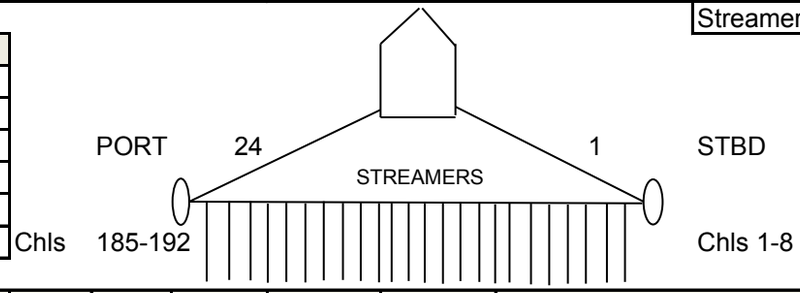
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 3-Jul-15 | Line Number: 2116R | Water Depth(m): 52.4 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 89 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 0.5 Wind (kts): N 12.6** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 02:13 | 06:13 | 988 | 1 | 2.7 | 2.9 | 2.3 | 52.4 | 310 | 1 | SOL/FGSP |
| 03:06 | 07:06 | 1545 | 558 | 2.8 | 2.9 | 2.2 | 32.53 | 310 | 1 | |
| 03:49 | 07:49 | 1998 | 1011 | 3 | 3.5 | 2.4 | 28.92 | 313.43 | 1 | |
| 4:06 | 8:06 | 2175 | 1188 | ----- | ----- | ----- | ----- | ----- | ----- | Moved Signal Cable in 4m |
| 5:01 | 9:01 | 2776 | 1789 | 3.2 | 3.6 | 2.6 | 28.53 | 311.13 | -1 | |
| 5:46 | 9:46 | 3261 | 2274 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP before GeoEel Software / SPSU lockup |
| 5:54 | 9:54 | 3344 | 2295 | ----- | ----- | ----- | ----- | ----- | ----- | FGSP After Power Cycling SPSU and Software |
| 6:04 | 10:04 | 3427 | 2378 | 3.5 | 4.0 | 2.8 | 29.55 | 312.99 | 1 | |
| 7:06 | 11:06 | 4112 | 3063 | 3.2 | 3.5 | 2.4 | 34.76 | 310.75 | -1 | |
| 8:16 | 12:16 | 4833 | 3784 | 3.3 | 3.7 | 2.7 | 29.16 | 308.68 | 0 | |
| | 12:37 | 5041 | 3992 | 3.1 | 3.6 | 2.6 | 31.0 | 308.0 | 1 | EOL/LGSP (Seas: 0.5m , Winds: NE 8.0 kts) |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 33.66 µBar |
| CH# 55 and 161 failed capacitance and leakage test | | | | | | | | | | Peak RMS Noise: 110.83 µBar |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 3-Jul-15 | Line Number: 2116R | Water Depth(m): 52.4 |
| Client: Columbia University | Line Azimuth: 304° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 89 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 0.5 Wind (kts): N 12.6** |

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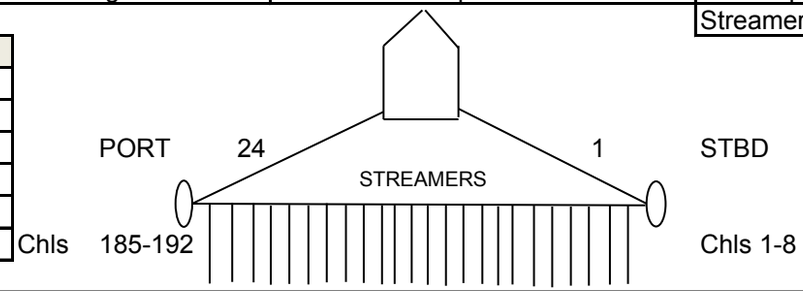
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 3-Jul-15 | Line Number: 1204A | Water Depth(m): 21.8 |
| Client: Columbia University | Line Azimuth: 124.4$^0$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 90 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski/Hackett | **Sea(m): 0.5 Wind (kts): NE 9.9** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 09:38 | 13:38 | 5079 | 1 | 3.8 | 4.3 | 3.1 | 21.8 | 131.6 | -1 | SOL/FGSP |
| 10:29 | 14:29 | 4535 | 545 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP - Turtle Power Down |
| 10:29 | 14:29 | 4530 | 555 | ----- | ----- | ----- | ----- | ----- | ----- | Mitigation Gun ON |
| 10:30 | 14:30 | 4521 | 559 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP w/ Mit Gun ON before GeoEel Crash |
| 10:34 | 14:34 | 4475 | 567 | ----- | ----- | ----- | ----- | ----- | ----- | Full volume (700in3) |
| 10:36 | 14:36 | 4460 | 582 | ----- | ----- | ----- | ----- | ----- | ----- | FGSP Restarted Software back up |
| 10:42 | 14:42 | 4410 | 632 | 3.8 | 4.5 | 2.9 | 28.55 | 119.84 | 0 | |
| 11:26 | 15:26 | 3926 | 1116 | 3.1 | 3.7 | 2.7 | 29.12 | 120.5 | 0 | |
| 13:37 | 17:37 | 2572 | 2470 | 3.5 | 3.6 | 2.7 | 30.45 | 120.27 | 1 | |
| 14:38 | 18:38 | 1938 | 3104 | 3.0 | 3.5 | 2.8 | 28.88 | 125.1 | 1 | |
| 16:18 | 20:18 | 961 | 4081 | 4.3 | 3.4 | 2.9 | 54.3 | 125.41 | 1 | EOL/LGSP (Seas:1 m , Winds: NNE 5.5 kts) |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 34.66 µBar |
| CH# 55 and 161 failed capacitance and leakage test | | | | | | | | | | Peak RMS Noise:108.56 µBar |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

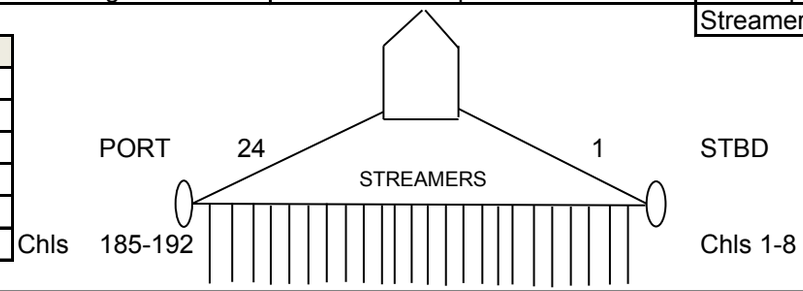
| | | |
|---|---|---|
| Date: 3-Jul-15 | Line Number: 1204A | Water Depth(m): 21.8 |
| Client: Columbia University | Line Azimuth: 124.4$^{0}$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 90 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski/Hackett | **Sea(m): 0.5 Wind (kts): NE 9.9** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 3-Jul-15 | Line Number: 2428R | Water Depth(m): 54 |
| Client: Columbia University | Line Azimuth: 304.4$^0$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 91 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Hackett | **Sea(m): 0.5 Wind (kts): NE 4** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17:35 | 21:35 | 962 | 1 | 3.2 | 3.4 | 2.9 | 53.8 | 302 | 0 | SOL/FGSP |
| 18:35 | 22:35 | 1662 | 701 | 3 | 3.5 | 2.8 | 32.79 | 302 | 0 | |
| 20:03 | 00:03 | 2615 | 1654 | 3.3 | 4 | 3 | 31.01 | 301.66 | 1 | |
| 20:57 | 00:57 | 3175 | 2214 | | | | | | | LGSP network slow |
| 21:03 | 01:03 | 3234 | 2249 | | | | 27.62 | 305.75 | 1 | FGSP after disarming and power cycling GeoEel 12 |
| 21:56 | 01:56 | 3772 | 2787 | 2.9 | 3.8 | 2.3 | 32.25 | 305.5 | 0 | |
| 22:27 | 02:27 | 4100 | 3115 | | | | | | | LGSP network slow |
| 22:33 | 02:33 | 4155 | 3143 | | | | | | | FGSP after disarming and power cycling GeoEel 12 |
| 23:30 | 03:30 | 4743 | 3731 | | | | | | | LGSP network slow |
| | | | | | | | | | | At file 3731, files reset to 3191 and will use axxxx |
| 23:36 | 03:36 | 4794 | a3191 | | | | | | | FGSP after disarming and power cycling GeoEel 12 |
| | | 4982-5004 | | | | | | | | Files Incomplete - Dropped Cable # 19 |
| 0:04 | 4:04 | 5041 | 3438 | 2.9 | 3.4 | 2.7 | 27.7 | 304.6 | 1 | EOL/LGSP (Seas: m , Winds: kts) |
| | | | | | | | | | | Average RMS Noise: 35.28 µBar |
| CH# 55 and 161 failed capacitance and leakage test | | | | | | | | | | Peak RMS Noise: 120.6 µBar |

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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

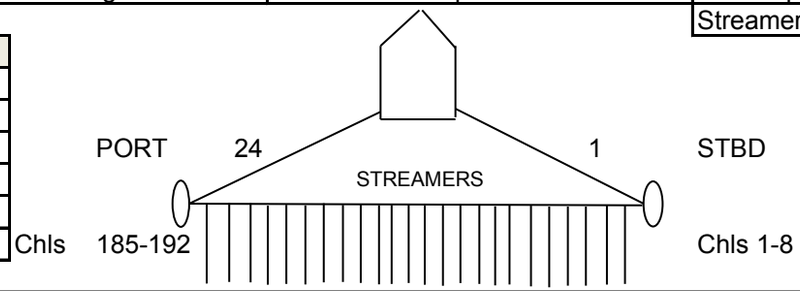
| | | |
|---|---|---|
| Date: 3-Jul-15 | Line Number: 2428R | Water Depth(m): 54 |
| Client: Columbia University | Line Azimuth: 304.4$^{0}$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 91 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Hackett | **Sea(m): 0.5 Wind (kts): NE 4** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 4-Jul-15 | Line Number: 1180 | Water Depth(m): 19.5 |
| Client: Columbia University | Line Azimuth: 124.4$^0$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 92 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 1.0 Wind (kts): ESE 7.3** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 01:12 | 05:12 | 5105 | 1 | 3.8 | 4.7 | 3.3 | 19.5 | 142.1 | 0 | SOL/FGSP |
| 02:02 | 06:02 | 4593 | 513 | 3.6 | 4.2 | 2.9 | 25.06 | 120.57 | 1 | |
| 02:59 | 06:59 | 3999 | 1107 | 3.2 | 3.7 | 2.6 | 31.06 | 121.14 | 0 | |
| 4:15 | 8:15 | 3229 | 1877 | 3 | 3.5 | 2.4 | 28.44 | 118.49 | 1 | |
| 5:13 | 9:13 | 2627 | 2479 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP - Incomplete Files (Buffer) |
| 5:16 | 9:16 | 2601 | 2506 | ----- | ----- | ----- | ----- | ----- | ----- | FGSP - After Incomplete Files (Buffer) Error |
| 5:21 | 9:21 | 2546 | 2561 | 3.1 | 3.4 | 2.4 | 30.02 | 121.66 | 0 | |
| 5:55 | 9:55 | 2209 | 2897 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP - Incomplete Files (Buffer), Gun Compressor Failure - Restart GeoEel |
| 6:07 | 10:07 | 2106 | 2936 | ----- | ----- | ----- | ----- | ----- | ----- | FGSP - After Errors and Source Compressor backup |
| 6:21 | 10:21 | 1979 | 3063 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP - Incomplete Files (Buffer) |
| 6:38 | 10:38 | 1812 | 3150 | ----- | ----- | ----- | ----- | ----- | ----- | FGSP - After Incomplete Files (Buffer) Error |
| 6:51 | 10:51 | 1708 | 3254 | 3.5 | 3.8 | 2.6 | 48.67 | 120.44 | 1 | |
| 7:17 | 11:17 | 1471 | 3491 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP - Incomplete Files (Buffer) |

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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | |
|---|---|---|---|---|
| Date: 4-Jul-15 | Line Number: 1180 | Water Depth(m): 19.5 |
| Client: Columbia University | Line Azimuth: 124.4$^{0}$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 92 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 1.0 Wind (kts): ESE 7.3** |

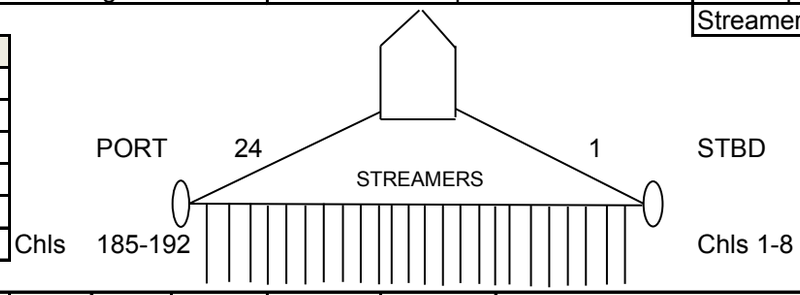
| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11:55 | 1108 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | EOL/LGSP (Seas: m , Winds: kts) |
| | | | | | | | | | | Average RMS Noise: µBar |
| CH# 55 and 161 failed capacitance and leakage test | | | | | | | | | | Peak RMS Noise: µBar |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 4-Jul-15 | Line Number: 1156 | Water Depth(m): 55.2 |
| Client: Columbia University | Line Azimuth: 304.4$^0$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 93 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1.0 Wind (kts): NE 18.1** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | |
|---|---|
| Reference Point: | Stern |
| CRP to Stern: | -30.67 m |
| Stern to Stbd Paravane: | 325 m |
| Stern to Port Paravane: | 315 m |
| Spread (strmr 1 to 24): | 287.5 m |
| Stern to Source: | 275 m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 14:39 | 18:39 | 953 | 1 | 3.2 | 3.7 | 2.5 | 55.2 | 315.26 | 0 | SOL/FGSP |
| 15:27 | 19:27 | 1453 | 501 | 2.8 | 2.8 | 2.1 | 49.95 | 313.56 | 1 | |
| 16:15 | 20:15 | 1953 | 1001 | 3.2 | 3.6 | 2.3 | 28.54 | 306.6 | 1 | |
| 17:03 | 21:03 | 2453 | 1501 | 3 | 3.4 | 2.4 | 28.37 | 305.1 | 1 | |
| 18:00 | 22:00 | 3053 | 2101 | 3.8 | 4.2 | 2.7 | 29.05 | 305.6 | 1 | |
| 19:27 | 23:27 | 3953 | 3001 | 3.6 | 3.8 | 2.5 | 28.66 | 304.6 | 1 | |
| 20:15 | 00:15 | 4453 | 3501 | 3.3 | 4.0 | 2.6 | 28.12 | 305.4 | 1 | |
| 21:12 | 01:12 | 5040 | 4088 | 3.3 | 3.8 | 2.6 | 25.2 | 305.8 | 1 | EOL/LGSP (Seas: 1 m , Winds: NE 8.6 kts) |
| | | | | | | | | | | Average RMS Noise: 38.27 µBar |
| CH# 55 and 161 failed capacitance and leakage test | | | | | | | | | | Peak RMS Noise: 119.80 µBar |
| | | | | | | | | | | |
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

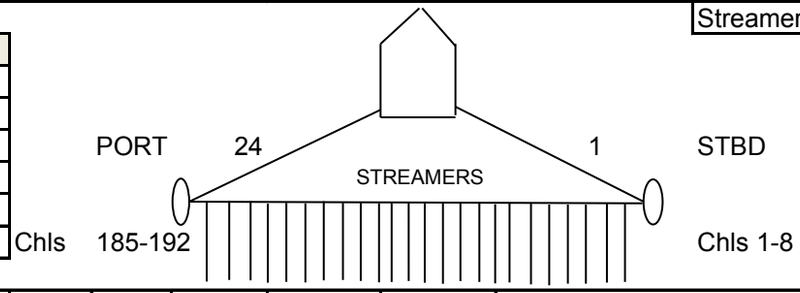
| | | |
|---|---|---|
| Date: 4-Jul-15 | Line Number: 1156 | Water Depth(m): 55.2 |
| Client: Columbia University | Line Azimuth: 304.4$^{0}$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 93 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1.0 Wind (kts): NE 18.1** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 5-Jul-15 | Line Number: 1132 | Water Depth(m): 24.5 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 94 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis/Hackett | **Sea(m): 0.5 Wind (kts): NE 7.1** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 22:43 | 02:43 | 5050 | 1 | 3.3 | 3.6 | 2.4 | 24.5 | 126.3 | 0 | SOL/FGSP |
| 23:31 | 03:31 | 4550 | 501 | 2.7 | 3.5 | 2.5 | 27.15 | 126.5 | 0 | |
| 00:50 | 04:50 | 3718 | 1333 | 3.5 | 3.9 | 2.6 | 30.22 | 123.02 | -2 | |
| 1:57 | 5:57 | 3026 | 2025 | 3.4 | 3.6 | 2.6 | 28.79 | 121.16 | 0 | |
| 2:56 | 6:56 | 2420 | 2631 | 3.1 | 3.3 | 2.5 | 29.5 | 121.9 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 36.34 µBar |
| | | | | | | | | | | Peak RMS Noise: 124.08 µBar |
| | | CH# 55 and 161 failed capacitance and leakage test | | | | | | | | |
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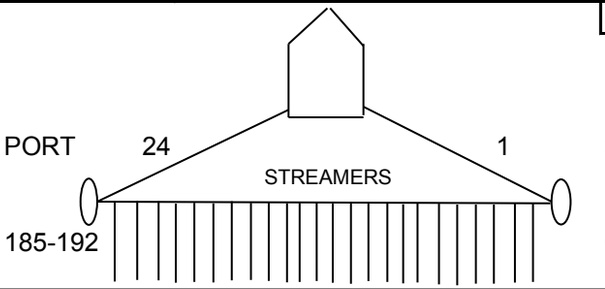
| NCS SubSea Navigating the Future | P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT | | |
|---|---|---|---|
| | Date: 5-Jul-15 | Line Number: 1132 | Water Depth(m): 24.5 |
| | Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| | Area: New Jersey | Sequence No 94 | Vessel Speed: 4.0 kt |
| | Vessel: R/V Marcus Langseth | Observers: Ard / Curtis/Hackett | **Sea(m): 0.5 Wind (kts): NE 7.1** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | | | |
|---|---|---|---|---|---|
| NCS SubSea Navigating the Future | Date: 5-Jul-15 | Line Number: | 1108 | Water Depth(m): | 27.9 |
| | Client: Columbia University | Line Azimuth: | 304.4° | Mean Velocity: | 1500m/s |
| | Area: New Jersey | Sequence No | 95 | Vessel Speed: 4.0 kt | |
| | Vessel: R/V Marcus Langseth | Observers: | Koprowski | **Sea(m): 1.0 Wind (kts): NE 4.5** | |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 04:15 | 08:15 | 2306 | 1 | 3.1 | 3.6 | 2.7 | 27.9 | 107.6 | 1 | SOL/FGSP |
| 05:36 | 09:36 | 3123 | 818 | 3.1 | 3.5 | 2.8 | 31.36 | 308.26 | 1 | |
| 06:38 | 10:38 | 3745 | 1440 | 3.6 | 4 | 2.5 | 31.19 | 309.77 | -1 | |
| 7:39 | 11:39 | 4392 | 2087 | 2.8 | 3.1 | 2.4 | 27.99 | 306.49 | 0 | |
| 8:38 | 12:38 | 5041 | 2736 | 3.2 | 3.7 | 3.0 | 25.5 | 306.9 | 2 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 37.85 µBar |
| | | | | | | | | | | Peak RMS Noise: 124.73 µBar |
| | | CH# 55 and 161 failed capacitance and leakage test | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

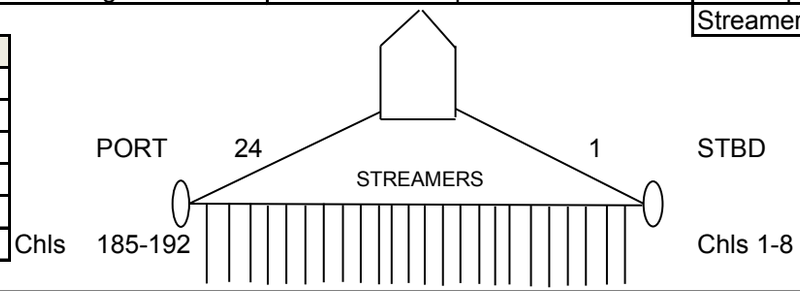
| | | |
|---|---|---|
| Date: 5-Jul-15 | Line Number: 1108 | Water Depth(m): 27.9 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 95 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 1.0 Wind (kts): NE 4.5** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | | |
|---|---|---|---|
| Date: 5-Jul-15 | Line Number: 1084 | Water Depth(m): 26.4 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 96 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 1.0 Wind (kts): NW 3.2** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 10:12 | 14:12 | 5045 | 1 | 3.4 | 3.4 | 2.7 | 26.4 | 123.3 | 3 | SOL/FGSP |
| 10:58 | 14:58 | 4565 | 481 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP - Power Down for a Turtle |
| 11:04 | 15:04 | 4495 | 551 | ----- | ----- | ----- | ----- | ----- | ----- | Full Source 700in3 after turle power down |
| 11:11 | 15:11 | 4425 | 580 | ----- | ----- | ----- | ----- | ----- | ----- | GeoEel Crash - System Restarted |
| 11:12 | 15:12 | 4409 | 555 | ----- | ----- | ----- | ----- | ----- | ----- | FGSP - After correcting Software Errors |
| 11:18 | 15:18 | 4349 | 656 | ----- | ----- | ----- | ----- | ----- | ----- | LGSP - GeoEel Lockup |
| 11:24 | 15:24 | 4291 | 659 | ----- | ----- | ----- | ----- | ----- | ----- | FGSP - After restarting Software / Changed PSU |
| 11:29 | 15:29 | 4228 | 722 | 2.9 | 3.3 | 2.2 | 29.36 | 125.17 | 1 | |
| 12:32 | 16:32 | 3535 | 1415 | | | | | | | LGSP - Power Down for a Turtle |
| 12:37 | 16:37 | 3480 | 1470 | | | | | | | Full Source 700in3 after turle power down |
| 13:37 | 17:37 | 2780 | 2170 | 3.5 | 3.6 | 2.7 | 27.17 | 125.0 | 1 | |
| 14:09 | 18:09 | 2420 | 2530 | 3.1 | 3.5 | 2.6 | 29.7 | 126.2 | 1 | EOL/LGSP |
| | | | | | | | | | | Average RMS Noise: 35.67 µBar |
| | | CH# 55 and 161 failed capacitance and leakage test | | | | | | | | Peak RMS Noise: 119.29 µBar |
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NCS SubSea
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 5-Jul-15 | Line Number: 1084 | Water Depth(m): 26.4 |
| Client: Columbia University | Line Azimuth: 124.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 96 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 1.0 Wind (kts): NW 3.2** |

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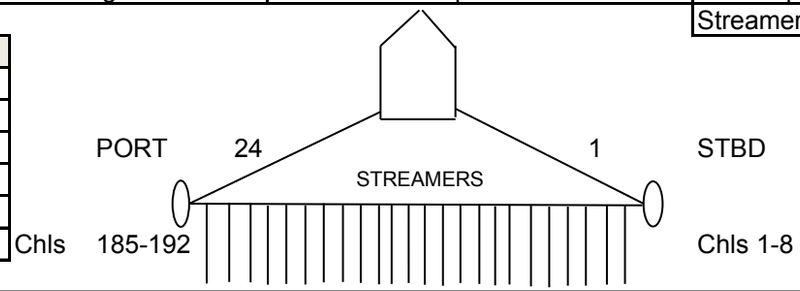
# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 5-Jul-15 | Line Number: 1348R | Water Depth(m): 27 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 97 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1 Wind (kts): Sw 4.5** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 15:21 | 19:21 | 1944 | 1 | 3.1 | 3.3 | 2.7 | 27 | 320.4 | 1 | SOL/FGSP |
| 16:13 | 20:13 | 2444 | 501 | 3.2 | 3.2 | 2.5 | 31.84 | 305.1 | 1 | |
| 16:20 | 20:20 | 2520 | 577 | 3.1 | 3.3 | 2.1 | 30.8 | 305.1 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 35.52 µBar |
| | | | | | | | | | | Peak RMS Noise: 122.14 µBar |
| | CH# 55 and 161 failed capacitance and leakage test | | | | | | | | | |
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NCS SubSea
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

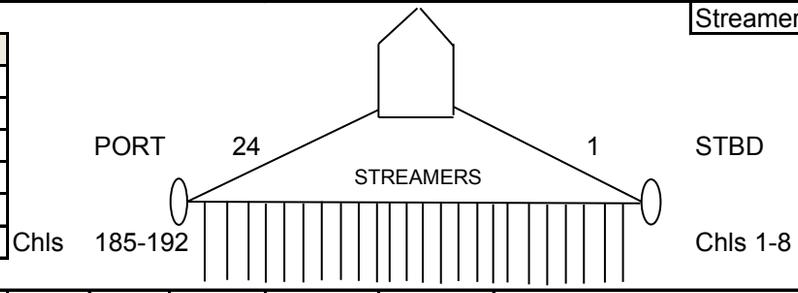
| | | |
|---|---|---|
| Date: 5-Jul-15 | Line Number: 1348R | Water Depth(m): 27 |
| Client: Columbia University | Line Azimuth: 304.4° | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 97 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis | **Sea(m): 1 Wind (kts): Sw 4.5** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 5-Jul-15 | Line Number: 2188R | Water Depth(m): 28.4 |
| Client: Columbia University | Line Azimuth: 304$^0$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 98 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Hackett | **Sea(m): 1 Wind (kts): S 12** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17:18 | 21:18 | 2778 | 1 | 2.9 | 2.9 | 2.1 | 28.4 | 308 | 1 | SOL/FGSP |
| 17:59 | 21:59 | 3233 | 456 | | | | | | | LGSP Power down for turtle |
| 18:04 | 22:04 | 3294 | 517 | | | | | | | FGSP Full power (700in3) |
| 18:47 | 22:47 | 3778 | 1001 | 3.4 | 3.8 | 2.8 | 29.15 | 305.4 | 1 | |
| 19:33 | 23:33 | 4278 | 1501 | 3.2 | 3.4 | 2.4 | 28.05 | 303.5 | 1 | |
| 20:17 | 00:17 | 4787 | 2010 | 3.3 | 3.2 | 2.4 | 29.1 | 305 | 1 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 35.61 µBar |
| | | | | | | | | | | Peak RMS Noise: 118.84 µBar |
| | CH# 55 and 161 failed capacitance and leakage test | | | | | | | | | |
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NCS SubSea
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# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

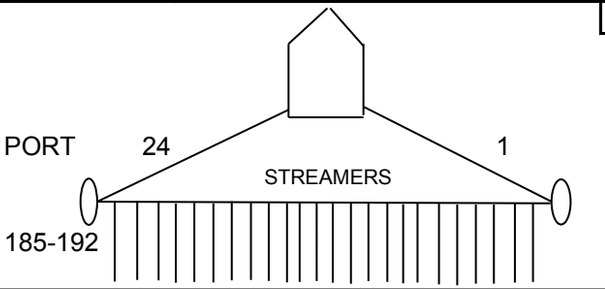
| | | |
|---|---|---|
| Date: 5-Jul-15 | Line Number: 2188R | Water Depth(m): 28.4 |
| Client: Columbia University | Line Azimuth: $304^0$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 98 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Hackett | **Sea(m): 1 Wind (kts): S 12** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 6-Jul-15 | Line Number: 1756R | Water Depth(m): 29.4 |
| Client: Columbia University | Line Azimuth: 124$^0$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 99 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Hackett | **Sea(m): 1 Wind (kts): S 8.2** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 21:20 | 01:20 | 4809 | 1 | 3.3 | 3.3 | 2.8 | 29.4 | 124.04 | 1 | SOL/FGSP |
| 22:09 | 02:09 | 4309 | 501 | 3.7 | 3.9 | 2.7 | 31.32 | 125.8 | 1 | |
| 22:58 | 02:58 | 3809 | 1001 | 3.1 | 3.7 | 2.7 | 34.58 | 125.5 | 1 | |
| 23:52 | 3:52 | 3245 | 1565 | 3.3 | 3.5 | 2.5 | 28.0 | 133.2 | 0 | EOL/LGSP |
| | | | | | | | | | | |
| | | | | | | | | | | Average RMS Noise: 35.78 µBar |
| | | | | | | | | | | Peak RMS Noise: 118.63 µBar |
| | CH# 55 and 161 failed capacitance and leakage test | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

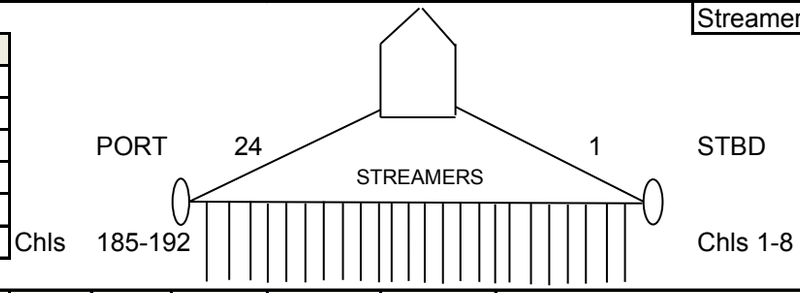
| | | |
|---|---|---|
| Date: 6-Jul-15 | Line Number: 1756R | Water Depth(m): 29.4 |
| Client: Columbia University | Line Azimuth: $124^0$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 99 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Ard / Curtis / Hackett | **Sea(m): 1 Wind (kts): S 8.2** |

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
|---|---|---|
| Date: 6-Jul-15 | Line Number: 2116S | Water Depth(m): 29.6 |
| Client: Columbia University | Line Azimuth: 304.4$^{0}$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 100 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 0.5 Wind (kts): S 6.8** |

| **Recording System:** | | **Source:** | **Streamers:** |
|---|---|---|---|
| Model: Geometrics CNT-2 | Low Cut Filter: NA | Type: Bolt | Type: GeoEel Solid |
| Recording Format: SEG-D | High Cut Filter: NA | Array Size: 4 Gun, 700 cu.in. | Sensitivity: 20 µv/µBar |
| Recording Media: Hard Disk | Aux Ch 1: Not used | Power(barM): NA | Streamers: 24 |
| Record Length: 4 sec | Aux Ch 2: Not used | Tow Depth:4.5 m | Chls/Streamer: 8 |
| Sample Rate: 1 msec | Aux Ch 3: Not used | | Total Chls: 192 |
| Preamp Gain: 0 dB | Aux Ch 4: Not used | Shot Interval: 12.5 m | Group Interval: 6.25 m |
| FTB Static: 160 ms | FTB Source: DigiShot | Pressure: 2000 psi | Tow Depth: 2.5m nominal |
| | | | Streamer Separation: 14m nom. |

| **Physical Offsets:** | | |
|---|---|---|
| Reference Point: | Stern | |
| CRP to Stern: | -30.67 | m |
| Stern to Stbd Paravane: | 325 | m |
| Stern to Port Paravane: | 315 | m |
| Spread (strmr 1 to 24): | 287.5 | m |
| Stern to Source: | 275 | m |




| Local Time | Time UTC | Shot Point Number | FFID Number | Depth Stbd (m) | Depth Center (m) | Depth Port (m) | Water Depth (m) | Azimuth | Streamer Leakage | Remarks (SOL, EOL, sea state, problems, etc) |
|---|---|---|---|---|---|---|---|---|---|---|
| 01:23 | 05:23 | 2806 | 1 | 2.9 | 3.5 | 2.4 | 29.6 | 302.7 | 1 | SOL/FGSP |
| 02:22 | 06:22 | 3405 | 600 | 3.3 | 3.3 | 2.2 | 31.02 | 399.75 | 1 | |
| 03:29 | 07:29 | 4042 | 1237 | 3.3 | 3.5 | 2.4 | 31.45 | 307.81 | 1 | |
| 4:24 | 8:24 | 4599 | 1794 | 3.1 | 3.3 | 2.4 | 27.47 | 299.14 | 1 | |
| 4:44 | 8:44 | 4803 | 1998 | 3.2 | 3.0 | 2.3 | 27.4 | 310.4 | -2 | EOL/LGSP |
| | | | | | | | | | | Average RMS Noise: 38.47 µBar |
| | | | | | | | | | | Peak RMS Noise: 134.22 µBar |
| | CH# 55 and 161 failed capacitance and leakage test | | | | | | | | | |
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NCS SubSea
Navigating the Future

# P-CABLE FIELD LOG / SEISMIC OBSERVERS REPORT

| | | |
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| Client: Columbia University | Line Azimuth: 304.4$^{0}$ | Mean Velocity: 1500m/s |
| Area: New Jersey | Sequence No 100 | Vessel Speed: 4.0 kt |
| Vessel: R/V Marcus Langseth | Observers: Koprowski | **Sea(m): 0.5 Wind (kts): S 6.8** |