

8/2/2022

Page 1

**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

### Daily Comment Summaries - Daily Summary

**Tue 02 Aug**

The gun mechanics worked most of the day on getting the overboarding sheave to work. A lot of blood, sweat and even a few manly tears went into the sheave today. The good news is we now have a fully working overboarding sheave with a swivel that we can hang tomorrow. The plan is to work on the sheave right after breakfast. Some spare guns were removed from the wet lab and loaded on to the pier. The hamboldt winch was loaded in to the container. The 322 winch was removed from the A-frame.

We now have a full Science and PSO crew onboard. The majority of the science team went through the vessel orientation today. The remaining sci team member along with the PSO team will complete the orientation tomorrow.

The deck was busy today with shipments coming in, scaffolding going up, lifts slinging onboard, new crew member covid tests, staging of gear and provisions arriving. The sci team did a ton of work in the stbd dry and wet lab getting gear secured, organized and ready to go.

Configurations are 90% done in the main lab, just a few items to tweak and we should be ready to go. The gun strings are ready to click test the guns and this will be done tomorrow. 12 digibirds and 2 acoustics were checked and batteries installed. A few monitors were installed in the main lab, along with plenty of places to secure.

A meeting was held to discuss the best place to setup the USBL interface along with the WHOI traducer interface. The wetlab was decided on as being the best spot. There was discussion for a transmitter to be installed on to the heat probe and how this will communicate to the vessel. This is ongoing but a solution is potentially in the works.

### Daily Comment Summaries - Plan for Tomorrow

**Tue 02 Aug**

After breakfast the overboard sheave will be lifted to the A-Frame, tested and hopefully installed for the last time.

The marine crew will continue to work on the pinger pole. The traducer cable will be run to the wetlab.

Run deck cable for WHOI traducer. Continue work on using the Chirp in passive mode to receive the pings from the transmitter on the Heat Probe.

Meeting with PIs and Captain to discuss the first couple of days at sea and any procedures/best practices with the heat probe.

One more orientation for 4 crew members who could not make it this morning.

### Timing Diary (Marcus G Langseth)

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| Category | Code | Start | End | Duration |
|----------|------|-------|-----|----------|
|----------|------|-------|-----|----------|

### Timing Day By Day (Marcus G Langseth)

Cascadia (MGL2208) (no data for period)

| 2-Aug              | Hours        | % Percent    |
|--------------------|--------------|--------------|
| <b>Day's Total</b> | <b>0.000</b> | <b>0.000</b> |

### Timing Breakdown Summary (Marcus G Langseth)

Cascadia (MGL2208) (no data for period)

| Category     | Hours        | % Percent |
|--------------|--------------|-----------|
| <b>Total</b> | <b>0.000</b> |           |

### Basic Project Details

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

Basic Project Details

| OBS_Deployment   |     |                |     |                 |   |
|------------------|-----|----------------|-----|-----------------|---|
| General Details  |     |                |     |                 |   |
| Rcvr Separation: | 0 m | Rcvr Interval: | 0 m | Rcvr Increment: | 1 |

Production Listing (Accpt km) - Prime: Full Fold, Infill: Unknown

Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)

| Seq   | Line | FGSP | LGSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|------|------|------|-----------|------------|-----------|------------|-------------|
| Total |      |      |      |           | 0.00       |           |            |             |

Production Totals (Accpt km) - Prime: Full Fold, Infill: Unknown

Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)

| Accepted km | Day  | Week | Month | Project |
|-------------|------|------|-------|---------|
| Prime       | 0.00 | 0.00 | 0.00  | 0.00    |
| Combined    | 0.00 | 0.00 | 0.00  | 0.00    |

Cascadia: Accpt  
8/2/2022 - 8/2/2022  
OBS\_Deployment, Hi-Rez



Easting

8/2/2022

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## Daily Comment Summaries - Daily Comments On Status of Equipment

Tue 02 Aug

## Navigation:

No Major Issues to Report  
Configuration ongoing

## Information Technology (IT):

No Major Issues to Report

## Acquisition (MCS):

No Major Issues to Report  
Configuration ongoing

## Towing and Handling (Source):

No Major Issues to Report

## Heat Probe:

Pinger pole 40% installed

Overboarding sheave working, needs to be installed tomorrow

## General Purpose Science:

No Major issues to Report.

## Daily Comment Summaries - Personnel Onboard

Tue 02 Aug

## Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski - Contract Navigator  
Mark Walker - Contract Compressor Mech

## PSO Staff On-board the Langseth

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

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Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU  
Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyrirtz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin ## - Engineer - OSU

## HSE Events Diary (Marcus G Langseth, )

| Category   | Code      | Start            | End              |
|--|-----------|------------------|------------------|
|  Start-up Meeting | Mtgs_StUp | Tue 2. Aug 10:20 | Tue 2. Aug 11:20 |
| HSE - Orientation  |           |                  |                  |

8/3/2022

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**Client:** Lamont-Doherty Earth Observatory  
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**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

**Daily Comment Summaries - Daily Summary****Wed 03 Aug**

Another busy but productive day. The good news is the bow thrusters were tested and we are ready to sail!

Over boarding sheave was hung, tested, calibrated and is ready to go. The scaffolding was de rigged and a bulkhead reinstalled under the A-frame for safety.

Two operations meetings were held today to discuss the operations. The first was in the main lab to discuss the overall plan moving forward and the second was on the main deck to discuss heat probe ops along with the equipment deployment/recovery procedure. The Sci team provided a work procedure after the good discussion on deck.

The heat probe was moved in to place and the Sci team have been working to get it ready to go, adjusted lab spaces, securing gear, running cables, installing tables etc. The installation on the pinger pole finished around noon. There was one issue with mounting the traducer to the pinger pole, however the langseth machine shop was put to good use and an adapter plate was fabricated.

The Main lab configs are just about ready to go. The guns were clicked tested and both the generator and injector were coming in good. Both GPS pods were tested good as well. The arrays are just about as tested as good as they can before getting wet, for the true test....

The work boat was launched and we ran the river for 30-45 minutes. We did a full function test in anticipation for the upcoming crew change. We drove out to the bar and had a look at the seas. On a calm day it will certainly be doable, however if the weather is marginal it will be a safety call. The good news is the boat ran like a Ferrari.

The PSO's have been busy going over all the equipment, testing their PAM cable, reviewing the permits and updating the crew on the procedures. There was one issue with a lack of batteries for the NVG's. A quick trip to walgreens sorted this out.

**Daily Comment Summaries - Plan for Tomorrow****Wed 03 Aug**

Anchors away and over the bar at 6 am.

The decision was made to not do the casius calibration but head directly to our first drop location and start our first heat flow campaign.

**Timing Diary (Marcus G Langseth)**

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| Category | Code | Start | End | Duration |
|----------|------|-------|-----|----------|
|----------|------|-------|-----|----------|

**Timing Day By Day (Marcus G Langseth)**

Cascadia (MGL2208) (no data for period)

| 3-Aug       | Hours | % Percent |
|-------------|-------|-----------|
| Day's Total | 0.000 | 0.000     |

**Timing Breakdown Summary - Project (Marcus G Langseth)**

Cascadia (MGL2208) (no data for period)

| Category | Hours | % Percent |
|----------|-------|-----------|
| Total    | 0.000 |           |

**Basic Project Details**

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

Basic Project Details

| OBS_Deployment   |     |                |     |                 |   |
|------------------|-----|----------------|-----|-----------------|---|
| General Details  |     |                |     |                 |   |
| Rcvr Separation: | 0 m | Rcvr Interval: | 0 m | Rcvr Increment: | 1 |

Production Listing (Accpt km) - Prime: Full Fold, Infill: Unknown

Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)

| Seq   | Line | FGSP | LGSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|------|------|------|-----------|------------|-----------|------------|-------------|
| Total |      |      |      |           | 0.00       |           |            |             |

Production Totals (Accpt km) - Prime: Full Fold, Infill: Unknown

Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)

| Accepted km | Day  | Week | Month | Project |
|-------------|------|------|-------|---------|
| Prime       | 0.00 | 0.00 | 0.00  | 0.00    |
| Combined    | 0.00 | 0.00 | 0.00  | 0.00    |

Cascadia: Accpt  
8/2/2022 - 8/3/2022  
OBS\_Deployment, Hi-Rez



8/3/2022

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## Daily Comment Summaries - Daily Comments On Status of Equipment

Wed 03 Aug

### Navigation:

No Major Issues to Report

### Information Technology (IT):

No Major Issues to Report

### Acquisition (MCS):

No Major Issues to Report

### Towing and Handling (Source):

No Major Issues to Report

### Heat Probe:

No Major issues to Report

### General Purpose Science:

No Major issues to Report.

## Daily Comment Summaries - Personnel Onboard

Wed 03 Aug

### Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer

Josh Kasinger L-DEO OMO Chief Source Mechanic

Brian Agee L-DEO OMO Source Mechanic

Paul Parolski - Contract Navigator

Mark Walker - Contract Compressor Mech

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Glenn Spinelli - PI NMT

Anne Trehu - Co-PI OSU

Robert Harris - Co-PI OSU

Mandy Kiger - Heat Flow Tech - OSU

Thomas Kyrirtz - Graduate Research asst. - NMT

Benjamin Norvell - Graduate Research asst. - NMT

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Danqi Jian - Graduate Research asst. - UTIG

Robert Perrin - Graduate Research asst. - U.Calgary

Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers

Matt Perry - Research asst. - Planetary Science Inst.

Ariful Islam - Graduate Research asst. - U. Nebraska

Clara Stanbury - Research asst. - Los Alamos National Lab

Ben Russel - Machinist - OSU

Justin ## - Engineer - OSU

## HSE Events Diary (Marcus G Langseth, )

Category

Code

Start

End

8/4/2022

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**Client:** Lamont-Doherty Earth Observatory  
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**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

**Daily Comment Summaries - Daily Summary****Thu 04 Aug**

The vessel threw lines at ~6 am local and set sail for... a last minute change of plans. The OSU techs put in a long night of hard work but could not get the heat probe quite ready for deployment. It was decided to head for NUBBIN and acquire seismic data over that area to give a bit more time for trouble shooting the heat probe.

Quite a few last minute tweaks and trouble shooting were needed for the tech department to get ready to deploy the tailbuoy in 8 hours instead of 3 days. The vessel arrived onsite and it was decided to wait another hour before the seismic gear was ready to go in the water. A good tool box talk was done in the main lab to stress there is no rush and the priority is safety.

At midnight the streamer was deployed and the team was working on guns.

**Daily Comment Summaries - Plan for Tomorrow****Thu 04 Aug**

Continue Seismic Acquisition.

**Timing Diary (Marcus G Langseth, MCS 6000m)**

| Category                                 | Code  | Start            | End              | Duration |
|--|-------|------------------|------------------|----------|
| Mob Ashore                               | MB_MA | Thu 4. Aug 00:00 | Thu 4. Aug 13:30 | 13.500   |
| Mobilising Ashore.                       |       |                  |                  |          |
| Mob Offshore                             | MB_MO | Thu 4. Aug 13:30 | Thu 4. Aug 22:46 | 9.267    |
| Mobilising Offshore - Transity to NUBBIN |       |                  |                  |          |
| Mob Offshore                             | MB_MO | Thu 4. Aug 22:46 | Thu 4. Aug 23:54 | 1.133    |
| Mobilising Offshore - Deploying Streamer |       |                  |                  |          |
| Mob Offshore                             | MB_MO | Thu 4. Aug 23:54 | Thu 4. Aug 24:00 | 0.100    |
| Mobilising Offshore - Deploying Guns     |       |                  |                  |          |

**Timing Day By Day (Marcus G Langseth, MCS 6000m)**

Cascadia (MGL2208)

| 4-Aug               | Hours         | % Percent      |
|---------------------|---------------|----------------|
| <b>Mobilisation</b> | <b>24.000</b> | <b>100.000</b> |
| Mob Ashore          | 13.500        | 56.250         |
| Mob Offshore        | 10.500        | 43.750         |
| <b>Day's Total</b>  | <b>24.000</b> | <b>100.000</b> |

**Timing Breakdown Summary - Project (Marcus G Langseth, MCS 6000m)**

Cascadia (MGL2208)

| Category            | Hours         | % Percent      |
|---------------------|---------------|----------------|
| <b>Mobilisation</b> | <b>72.000</b> | <b>100.000</b> |
| Mob Ashore          | 61.500        | 85.417         |
| Mob Offshore        | 10.500        | 14.583         |
| <b>Total</b>        | <b>72.000</b> |                |

**Basic Project Details**

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

Basic Project Details

| OBS_Deployment   |     |                |     |                 |   |
|------------------|-----|----------------|-----|-----------------|---|
| General Details  |     |                |     |                 |   |
| Rcvr Separation: | 0 m | Rcvr Interval: | 0 m | Rcvr Increment: | 1 |

Production Listing (Accpt km) - Prime: Full Fold, Infill: Unknown

Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)

| Seq   | Line | FGSP | LGSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|------|------|------|-----------|------------|-----------|------------|-------------|
| Total |      |      |      |           | 0.00       |           |            |             |

Production Totals (Accpt km) - Prime: Full Fold, Infill: Unknown

Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)

| Accepted km | Day  | Week | Month | Project |
|-------------|------|------|-------|---------|
| Prime       | 0.00 | 0.00 | 0.00  | 0.00    |
| Combined    | 0.00 | 0.00 | 0.00  | 0.00    |

Cascadia: Accpt  
8/2/2022 - 8/4/2022  
OBS\_Deployment, Hi-Rez





8/4/2022

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## Daily Comment Summaries - Daily Comments On Status of Equipment

Thu 04 Aug

### Navigation:

No Major Issues to Report  
Tailbuoy GPS not working

### Information Technology (IT):

No Major Issues to Report

### Acquisition (MCS):

No Major Issues to Report

### Towing and Handling (Source):

No Major Issues to Report

### Heat Probe:

No Major issues to Report

### General Purpose Science:

No Major issues to Report.

## Daily Comment Summaries - Personnel Onboard

Thu 04 Aug

### Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski - Contract Navigator  
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Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin McLeod - Engineer - OSU

## HSE Events Diary (Marcus G Langseth, )

Category

Code

Start

End

8/5/2022

Page 1

**Client:** Lamont-Doherty Earth Observatory  
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**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

**Daily Comment Summaries - Daily Summary****Fri 05 Aug**

The day started with finishing deploying the guns and streamer. After a short sail to start of line acquisition was started, unfortunately however the 2 GI guns were not working. After some onboard trouble shooting it was decided to pick the guns up and inspect them. On recovery it was noticed that the guns were flooded. The team cleaned them out, deployed them, tested and started line, on preplot N02,




After the recovery it was down to seismic data. Great cooperation between the science team, tech and bridge on planning lines, shooting speeds etc. Seismic was acquired all day and early indication hints at a great data set. The last line was acquired just before midnight. The students were doing a great job online, a few teething problems initially with the logs, but that has been sorted out and the team is really starting to warm up.

At the end of the day gear recovery was started

**Daily Comment Summaries - Plan for Tomorrow****Fri 05 Aug**

Just after midnight we were informed that the heat probe is working and we will be transiting to the Marginal site for heat probe ops.

**Timing Diary (Marcus G Langseth, Hi-Rez)**

| Category  | Code   | Start            | End              | Duration |
|---|--------|------------------|------------------|----------|
|  Mob Offshore      | MB_MO  | Fri 5. Aug 00:00 | Fri 5. Aug 03:26 | 3.433    |
| Mobilising Offshore - Deploying guns and running in to line   |        |                  |                  |          |
|  Source            | DT_SC  | Fri 5. Aug 03:26 | Fri 5. Aug 07:15 | 3.817    |
| Downtime due to source.<br>GI Guns Flooded  |        |                  |                  |          |
|  Production Prime  | AC_PP  | Fri 5. Aug 07:15 | Fri 5. Aug 08:43 | 1.467    |
| Seq: 0<br>MGL2208002N02   |        |                  |                  |          |
|  Prime Line Change | AC_PLC | Fri 5. Aug 08:43 | Fri 5. Aug 09:00 | 0.283    |
| Seq: 0<br>Nominal Prime line change.  |        |                  |                  |          |
|  Production Prime  | AC_PP  | Fri 5. Aug 09:00 | Fri 5. Aug 11:19 | 2.317    |
| Seq: 0<br>MGL2208003N03   |        |                  |                  |          |
|  Prime Line Change | AC_PLC | Fri 5. Aug 11:19 | Fri 5. Aug 12:41 | 1.367    |
| Seq: 0<br>Nominal Prime line change.  |        |                  |                  |          |
|  Production Prime  | AC_PP  | Fri 5. Aug 12:41 | Fri 5. Aug 15:06 | 2.417    |
| Seq: 0<br>MGL2208004N05   |        |                  |                  |          |
|  Prime Line Change | AC_PLC | Fri 5. Aug 15:06 | Fri 5. Aug 15:43 | 0.617    |
| Seq: 0<br>Nominal Prime line change.  |        |                  |                  |          |
|  Production Prime  | AC_PP  | Fri 5. Aug 15:43 | Fri 5. Aug 16:55 | 1.200    |
| Seq: 0  |        |                  |                  |          |

8/5/2022

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| Category  | Code   | Start            | End              | Duration |
|---|--------|------------------|------------------|----------|
| MGL2208005N06   |        |                  |                  |          |
|  Prime Line Change | AC_PLC | Fri 5. Aug 16:55 | Fri 5. Aug 17:33 | 0.633    |
| Seq: 0<br>Nominal Prime line change.  |        |                  |                  |          |
|  Production Prime  | AC_PP  | Fri 5. Aug 17:33 | Fri 5. Aug 19:51 | 2.300    |
| Seq: 0<br>MGL2208006N07   |        |                  |                  |          |
|  Prime Line Change | AC_PLC | Fri 5. Aug 19:51 | Fri 5. Aug 21:07 | 1.267    |
| Seq: 0<br>Nominal Prime line change.  |        |                  |                  |          |
|  Production Prime  | AC_PP  | Fri 5. Aug 21:07 | Fri 5. Aug 23:33 | 2.433    |
| Seq: 0<br>MGL2208007N01a  |        |                  |                  |          |
|  Recovery          | DM_RC  | Fri 5. Aug 23:33 | Fri 5. Aug 24:00 | 0.450    |
| Recovering outboard equipment.  |        |                  |                  |          |

## Timing Day By Day (Marcus G Langseth, Hi-Rez)

Cascadia (MGL2208)

| 5-Aug                 | Hours         | % Percent      |
|-----------------------|---------------|----------------|
| <b>Acquisition</b>    | <b>16.300</b> | <b>67.917</b>  |
| Prime Line Change     | 4.167         | 17.361         |
| Production Prime      | 12.133        | 50.556         |
| <b>Demobilisation</b> | <b>0.450</b>  | <b>1.875</b>   |
| Recovery              | 0.450         | 1.875          |
| <b>DownTime</b>       | <b>3.817</b>  | <b>15.903</b>  |
| Source                | 3.817         | 15.903         |
| <b>Mobilisation</b>   | <b>3.433</b>  | <b>14.306</b>  |
| Mob Offshore          | 3.433         | 14.306         |
| <b>Day's Total</b>    | <b>24.000</b> | <b>100.000</b> |

## Timing Breakdown Summary - Project (Marcus G Langseth, Hi-Rez)

Cascadia (MGL2208)

| Category              | Hours         | % Percent     |
|-----------------------|---------------|---------------|
| <b>Mobilisation</b>   | <b>3.433</b>  | <b>14.306</b> |
| Mob Offshore          | 3.433         | 14.306        |
| <b>Acquisition</b>    | <b>16.300</b> | <b>67.917</b> |
| Prime Line Change     | 4.167         | 17.361        |
| Production Prime      | 12.133        | 50.556        |
| <b>Demobilisation</b> | <b>0.450</b>  | <b>1.875</b>  |
| Recovery              | 0.450         | 1.875         |
| <b>DownTime</b>       | <b>3.817</b>  | <b>15.903</b> |
| Source                | 3.817         | 15.903        |
| <b>Total</b>          | <b>24.000</b> |               |

## Basic Project Details

| Hi-Rez          |         |              |        |                     |      |
|-----------------|---------|--------------|--------|---------------------|------|
| General Details |         |              |        |                     |      |
| Record length:  | 8000 ms | Sample rate: | 0.5 ms | Shotpoint interval: | 25 m |

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| Hi-Rez        |       |                  |       |                 |        |
|---------------|-------|------------------|-------|-----------------|--------|
| CoS to CNG:   | 100 m | Fold Coverage:   | 0     |                 |        |
| Cable Details |       |                  |       |                 |        |
| No of Cables: | 1     | Chans Per Cable: | 144   | Front Depth:    | 4 m    |
| Tail Depth:   | 4 m   | Length:          | 900 m | Group interval: | 6.25 m |

## Basic Project Details

| OBS_Deployment   |     |                |     |                 |   |
|------------------|-----|----------------|-----|-----------------|---|
| General Details  |     |                |     |                 |   |
| Rcvr Separation: | 0 m | Rcvr Interval: | 0 m | Rcvr Increment: | 1 |

## Production Listing (Chgd km by Shotpoint) - Full Fold

## MCS 6000m, Hi-Rez, OBS\_Deployment

Cascadia (MGL2208)

| Seq   | Line    | Heading | FCSP | LCSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|---------|---------|------|------|-----------|------------|-----------|------------|-------------|
| 1     | 001N01  | 279.9   | N/A  | N/A  | Prime     | 0.00       | N/A       | NTBP       | NTBP        |
| 2     | 002N02  | 137.7   | 1071 | 1547 | Prime     | 11.93      | 4.431     | Complete   | Complete    |
| 3     | 003N03  | 9.9     | 1001 | 1782 | Prime     | 19.55      | 4.813     | Complete   | Complete    |
| 4     | 004N05  | 144.0   | 1001 | 1795 | Prime     | 19.88      | 4.631     | Complete   | Complete    |
| 5     | 005N06  | 9.7     | 1060 | 1517 | Prime     | 11.45      | 5.141     | Complete   | Complete    |
| 6     | 006N07  | 233.6   | 1013 | 1769 | Prime     | 18.93      | 4.813     | Complete   | Complete    |
| 7     | 007N01a | 99.9    | 1001 | 1780 | Prime     | 19.50      | 4.893     | Complete   | Complete    |
| Total |         |         |      |      |           | 101.23     |           |            |             |

## Production Totals (Acpt km by Shotpoint) - Prime: Sail Line, Infill: Full Fold

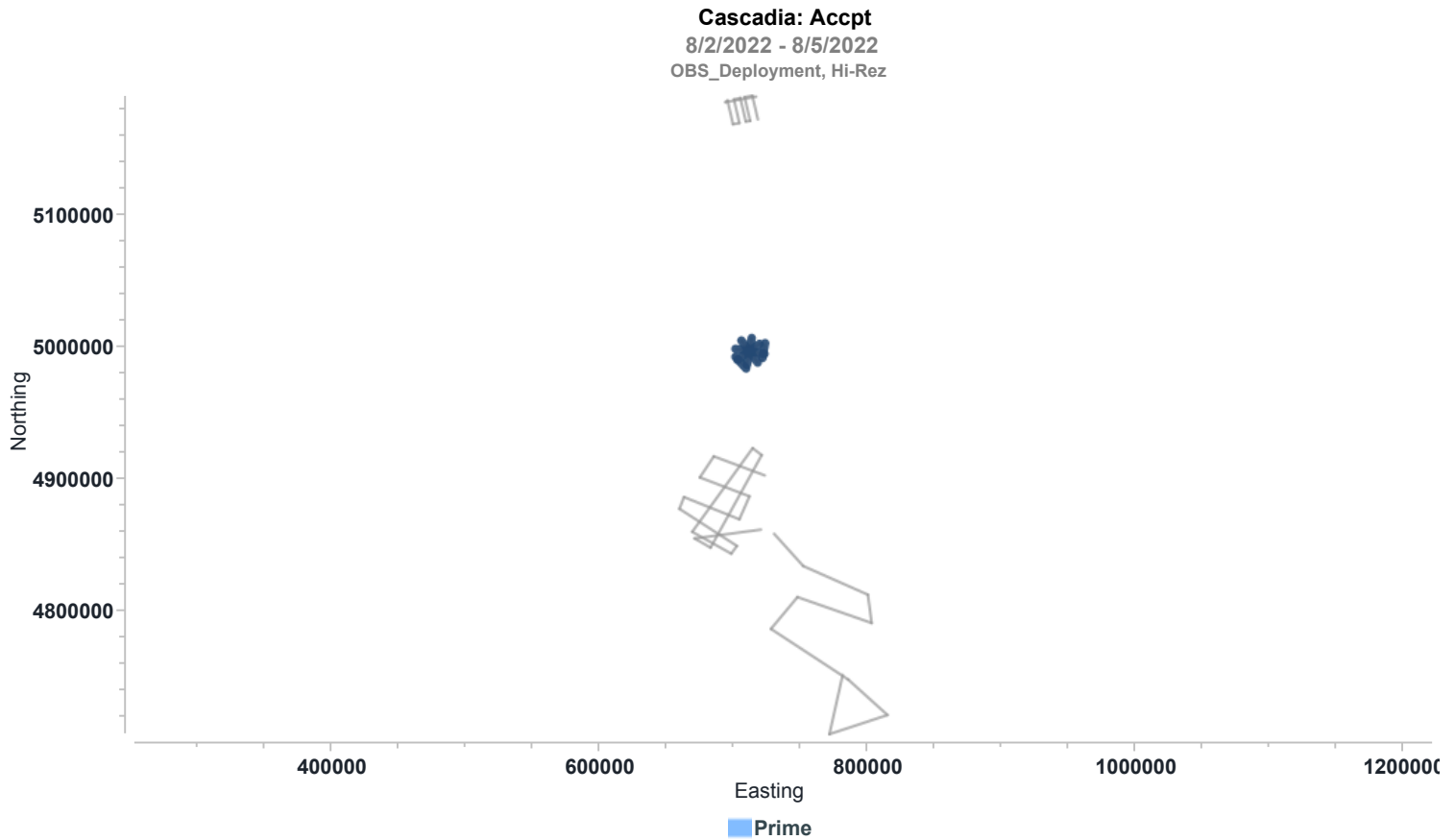
## MCS 6000m, Hi-Rez, OBS\_Deployment

Cascadia (MGL2208)

| Accepted km | Day    | Week   | Month  | Project |
|-------------|--------|--------|--------|---------|
| Prime       | 107.40 | 107.40 | 107.40 | 107.40  |
| Combined    | 107.40 | 107.40 | 107.40 | 107.40  |

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## Daily Comment Summaries - Daily Comments On Status of Equipment

**Fri 05 Aug**

### Navigation:

No Major Issues to Report

### Information Technology (IT):

No Major Issues to Report

### Acquisition (MCS):

No Major Issues to Report

### Towing and Handling (Source):

No Major Issues to Report

### Heat Probe:

No Major issues to Report

### General Purpose Science:

No Major issues to Report.

## Daily Comment Summaries - Personnel Onboard

**Fri 05 Aug**

### Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski - Contract Navigator  
Mark Walker - Contract Compressor Mech

### PSO Staff On-board the Langseth

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

### Science Party On-board the Langseth


Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU

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Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyrirtz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin McLeod - Engineer - OSU

## HSE Events Diary (Marcus G Langseth, )

| Category   | Code      | Start | End   |
|--|-----------|-------|-------|
| Daily Total Category   |           | Code  | Count |
|  Toolbox Meetings | Mtgs_Tbox |       | 1     |
| 8/5/2022   |           |       |       |
| Ops Meeting  |           |       |       |

8/6/2022

Page 1

**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

**Daily Comment Summaries - Daily Summary**

Sat 06 Aug

The day started with streamer and gun recovery from the Nubbin area. The heat probe was not working in the morning so the decision was made to continue with seismic acquisition over the PF area, farther to the south. About an hour in to transit we got the great news that the Heat Probe was fixed and we the plans changed. The PI's decided to go to Marginal and start heat probe measurements there.

We arrived onsite and took our time readying the gear and people, with a do it once and do it right mentality. A good long tool box was had to discuss the flow of operations, highlight associated risks, assigned crew duties and discuss communications. The first deployment went well, with a few lessons learned for the next operations.

After deployment it was discovered that there was not a subsea acoustic pinger onboard. The descision was made to continue down to take measurements. In the meantime emails were sent to try and locate a pinger on shore for our early week port call. As of this daily, things look promising that the Tommy Thompson might have 2 for us to use.

After penetrating the first site, the heat flow team discovered that there was communications problems between the probe and the WHOI dunker. The decision was made to continue with operations while monitoring the winch tension only. The days of hardwork that the team put in to get this working has really paid off!






Heat flow operations continued for the rest of the day. Slow is steady and steady is fast has been the mantra today. At midnight UTC the probe was inserted at station 7.

**Daily Comment Summaries - Plan for Tomorrow**

Sat 06 Aug

The probe was recovered after site 7 for planned battery maintenance, to check the data logger and to try and trouble shoot the communication problem. When the probe was recovered onboard a kink was noticed a couple of feet above the termination point. It was decided that the wire would be re-terminated while the heat probe team trouble shot the unit. The wire loaded tested good and the team managed to fix the communication problem and change out a thermometer. Around 10:30 local the unit was deployed again. The lessons learned from the first deployment were done and it was a nice smooth deployment.

**Timing Diary (Marcus G Langseth, OBS\_Deployment, Hi-Rez)**

| Category  | Code     | Start            | End              | Duration |
|---|----------|------------------|------------------|----------|
|  Recovery  | DM_RC    | Sat 6. Aug 00:00 | Sat 6. Aug 02:00 | 2.000    |
| Recovery of Streamer and Guns   |          |                  |                  |          |
|  Transit   | SB_TRT   | Sat 6. Aug 02:00 | Sat 6. Aug 09:47 | 7.783    |
| Transit to Marginal Working Area  |          |                  |                  |          |
|  Deployment  | MB_DP    | Sat 6. Aug 09:47 | Sat 6. Aug 11:00 | 1.217    |
| Deploy Heat Probe   |          |                  |                  |          |
|  Deploy  | AC_SM_De | Sat 6. Aug 11:00 | Sat 6. Aug 23:39 | 12.650   |
| Node operation 1 S/N: Line:MGL2208Line HF1 Block:Cascadia SP:1 Deployment<br>Node operation 1 S/N: Line:MGL2208Line HF1 Block:Cascadia SP:2 Deployment<br>Node operation 1 S/N: Line:MGL2208Line HF1 Block:Cascadia SP:3 Deployment<br>Node operation 1 S/N: Line:MGL2208Line HF1 Block:Cascadia SP:4 Deployment<br>Node operation 1 S/N: Line:MGL2208Line HF1 Block:Cascadia SP:5 Deployment<br>Node operation 1 S/N: Line:MGL2208Line HF1 Block:Cascadia SP:6 Deployment<br>Node operation 1 S/N: Line:MGL2208Line HF1 Block:Cascadia SP:7 Deployment |          |                  |                  |          |
|  Recovery  | DM_RC    | Sat 6. Aug 23:40 | Sat 6. Aug 24:00 | 0.333    |

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| Category           | Code | Start | End | Duration |
|--------------------|------|-------|-----|----------|
| Recover Heat Probe |      |       |     |          |

Timing Day By Day (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| 6-Aug              | Hours  | % Percent |
|--------------------|--------|-----------|
| Acquisition        | 12.650 | 52.708    |
| Swath Move         | 12.650 | 52.708    |
| Deploy             | 12.650 | 52.708    |
| Chargeable Standby | 7.783  | 32.431    |
| Transit            | 7.783  | 32.431    |
| Demobilisation     | 2.333  | 9.722     |
| Recovery           | 2.333  | 9.722     |
| Mobilisation       | 1.217  | 5.069     |
| Deployment         | 1.217  | 5.069     |
| Day's Total        | 23.983 | 99.931    |

Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category           | Hours  | % Percent |
|--------------------|--------|-----------|
| Acquisition        | 28.950 | 60.333    |
| Prime Line Change  | 4.167  | 8.684     |
| Production Prime   | 12.133 | 25.287    |
| Swath Move         | 12.650 | 26.363    |
| Deploy             | 12.650 | 26.363    |
| Mobilisation       | 4.650  | 9.691     |
| Deployment         | 1.217  | 2.536     |
| Mob Offshore       | 3.433  | 7.155     |
| Demobilisation     | 2.783  | 5.801     |
| Recovery           | 2.783  | 5.801     |
| DownTime           | 3.817  | 7.954     |
| Source             | 3.817  | 7.954     |
| Chargeable Standby | 7.783  | 16.221    |
| Transit            | 7.783  | 16.221    |
| Total              | 47.983 |           |

Basic Project Details

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

Basic Project Details

| OBS_Deployment  |
|-----------------|
| General Details |



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## OBS\_Deployment

|                  |     |                |     |                 |   |
|------------------|-----|----------------|-----|-----------------|---|
| Rcvr Separation: | 0 m | Rcvr Interval: | 0 m | Rcvr Increment: | 1 |
|------------------|-----|----------------|-----|-----------------|---|

**Production Listing** (Accpt km) - Prime: Full Fold, Infill: Unknown**Hi-Rez, OBS\_Deployment**

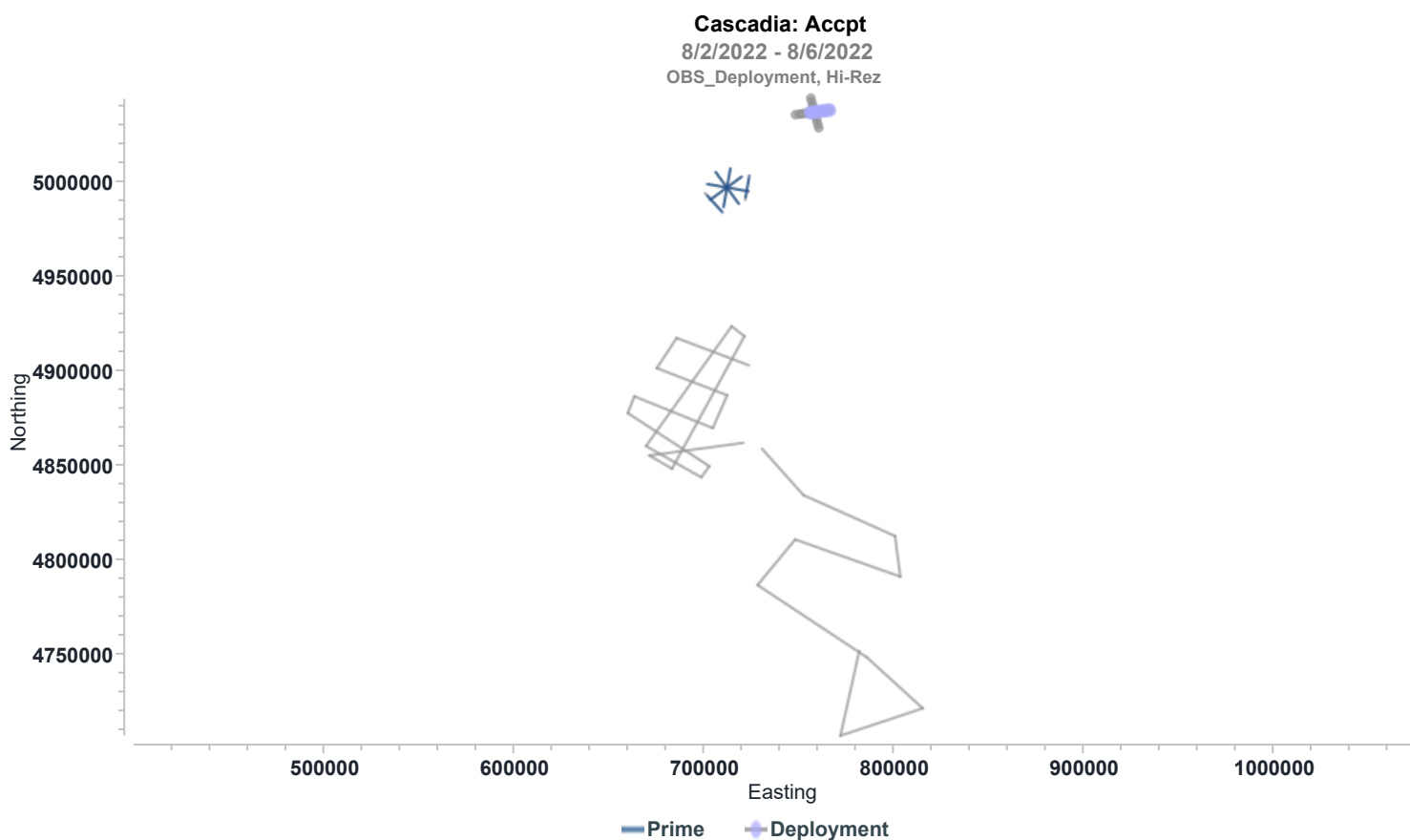
Cascadia (MGL2208) (no data for period)

| Seq   | Line | FGSP | LGSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|------|------|------|-----------|------------|-----------|------------|-------------|
| Total |      |      |      |           | 0.00       |           |            |             |

**Production Totals** (Accpt km by Shotpoint) - Full Fold**Hi-Rez, OBS\_Deployment**

Cascadia (MGL2208) (no data for period)

| Accepted km | Day  | Week   | Month  | Project |
|-------------|------|--------|--------|---------|
| Prime       | 0.00 | 107.40 | 107.40 | 107.40  |
| Combined    | 0.00 | 107.40 | 107.40 | 107.40  |

**Daily Comment Summaries - Daily Comments On Status of Equipment**

## Sat 06 Aug

**Navigation:**  
No Major Issues to Report**Information Technology (IT):**  
No Major Issues to Report**Acquisition (MCS):**  
No Major Issues to Report**Towing and Handling (Source):**  
No Major Issues to Report**General Purpose Science:**  
No Major issues to Report.

Heat Probe:

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No Major issues to Report.

## Daily Comment Summaries - Personnel Onboard

Sat 06 Aug

### Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
- Contract Navigator  
Mark Walker - Contract Compressor Mech

### PSO Staff On-board the Langseth

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

### Science Party On-board the Langseth

Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU  
Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyritz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin McCloud - Engineer - OSU

## HSE Events Diary (Marcus G Langseth, )

Category

Code

Start

End

8/7/2022

Page 1

**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

**Daily Comment Summaries - Daily Summary****Sun 07 Aug**

At the start of the day the heat probe was recovered for battery checks and trouble shooting. During recovery it was noticed that the cable had a severe kink 1-2 feet up from the termination. The team re-terminated and load tested it good. Meanwhile the Heat probe team were downloading data, troubleshooting the acoustic unit, checking data and preparing the probe for another deployment. Upon inspection something did not look 100% with the recorded data so the team change out the temperature probe.

The probe was lowered on to station HF2-1. Once past 300 meters the team could not longer communicate with the heat probe using the WHOI dunker. The station was completed and it was decided to bring the probe to surface to check the data and try one more time to get the acoustic working. The good news is the data on HF2-1 looked great and the probe was deployed to finish the line, HF2-2 to HF2-7.

Towards the end of the day the probe was recovered again. The teams are really getting in to a rhythm now with deployment and recoveries. We've tweaked how it's done several times, with great feedback from the different team members. I think we have a safe and efficient recipe now.

Due to the invalid data on Stations HF1-1 to HF1-7 there has been a change to the plans. The vessel will return to require those stations before starting the North South Line ( Starting in the South). This will of course change our time plan. A good estimate is the vessel will arrive in Newport around noon on Tuesday the 9th, local time. The weather and fog report look favorable for that time.

**Daily Comment Summaries - Plan for Tomorrow****Sun 07 Aug****Timing Diary (Marcus G Langseth, OBS\_Deployment)**

| Category   | Code     | Start            | End              | Duration |
|--|----------|------------------|------------------|----------|
| Recovery   | DM_RC    | Sun 7. Aug 00:00 | Sun 7. Aug 01:40 | 1.667    |
| Heat Probe Recovery  |          |                  |                  |          |
| Deployment   | MB_DP    | Sun 7. Aug 01:40 | Sun 7. Aug 06:57 | 5.283    |
| Heat Probe Deployment  |          |                  |                  |          |
| Deploy   | AC_SM_De | Sun 7. Aug 06:57 | Sun 7. Aug 07:41 | 0.733    |
| Heat Probe Op 2 S/N: HF2-1   |          |                  |                  |          |
| Recovery   | DM_RC    | Sun 7. Aug 07:41 | Sun 7. Aug 08:17 | 0.600    |
| Heat Probe Recovery  |          |                  |                  |          |
| Deployment   | MB_DP    | Sun 7. Aug 08:17 | Sun 7. Aug 10:46 | 2.483    |
| Heat Probe Deployment  |          |                  |                  |          |
| Deploy   | AC_SM_De | Sun 7. Aug 10:46 | Sun 7. Aug 18:46 | 8.000    |
| Heat Probe Op 3 S/N: HF2-2<br>Heat Probe Op 3 S/N: HF2-3<br>Heat Probe Op 3 S/N: HF2-4<br>Heat Probe Op 3 S/N: HF2-5<br>Heat Probe Op 3 S/N: HF2-6<br>Heat Probe Op 3 S/N: HF2-7 |          |                  |                  |          |
| Recovery   | DM_RC    | Sun 7. Aug 18:46 | Sun 7. Aug 20:12 | 1.433    |
| Heat Probe Recovery  |          |                  |                  |          |

| Category   | Code     | Start            | End              | Duration |
|--|----------|------------------|------------------|----------|
|  Deployment | MB_DP    | Sun 7. Aug 20:12 | Sun 7. Aug 22:59 | 2.783    |
| Heat Probe Deployment  |          |                  |                  |          |
|  Deploy     | AC_SM_De | Sun 7. Aug 22:59 | Sun 7. Aug 24:00 | 1.017    |
| Heat Probe Op 4 S/N: Reacquire station 1-3   |          |                  |                  |          |

Timing Day By Day (Marcus G Langseth, OBS\_Deployment)

Cascadia (MGL2208)

| 7-Aug                 | Hours         | % Percent      |
|-----------------------|---------------|----------------|
| <b>Acquisition</b>    | <b>9.750</b>  | <b>40.625</b>  |
| Swath Move            | 9.750         | 40.625         |
| Deploy                | 9.750         | 40.625         |
| <b>Demobilisation</b> | <b>3.700</b>  | <b>15.417</b>  |
| Recovery              | 3.700         | 15.417         |
| <b>Mobilisation</b>   | <b>10.550</b> | <b>43.958</b>  |
| Deployment            | 10.550        | 43.958         |
| <b>Day's Total</b>    | <b>24.000</b> | <b>100.000</b> |

Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category                  | Hours         | % Percent     |
|---------------------------|---------------|---------------|
| <b>Acquisition</b>        | <b>38.700</b> | <b>53.762</b> |
| Prime Line Change         | 4.167         | 5.788         |
| Production Prime          | 12.133        | 16.856        |
| Swath Move                | 22.400        | 31.118        |
| Deploy                    | 22.400        | 31.118        |
| <b>Mobilisation</b>       | <b>15.200</b> | <b>21.116</b> |
| Deployment                | 11.767        | 16.346        |
| Mob Offshore              | 3.433         | 4.770         |
| <b>Demobilisation</b>     | <b>6.483</b>  | <b>9.007</b>  |
| Recovery                  | 6.483         | 9.007         |
| <b>DownTime</b>           | <b>3.817</b>  | <b>5.302</b>  |
| Source                    | 3.817         | 5.302         |
| <b>Chargeable Standby</b> | <b>7.783</b>  | <b>10.813</b> |
| Transit                   | 7.783         | 10.813        |
| <b>Total</b>              | <b>71.983</b> |               |

Basic Project Details

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

Basic Project Details

8/7/2022

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## OBS\_Deployment

## General Details

|                  |     |                |     |                 |   |
|------------------|-----|----------------|-----|-----------------|---|
| Rcvr Separation: | 0 m | Rcvr Interval: | 0 m | Rcvr Increment: | 1 |
|------------------|-----|----------------|-----|-----------------|---|

**Production Listing** (Accpt km) - Prime: Full Fold, Infill: Unknown**Hi-Rez, OBS\_Deployment**

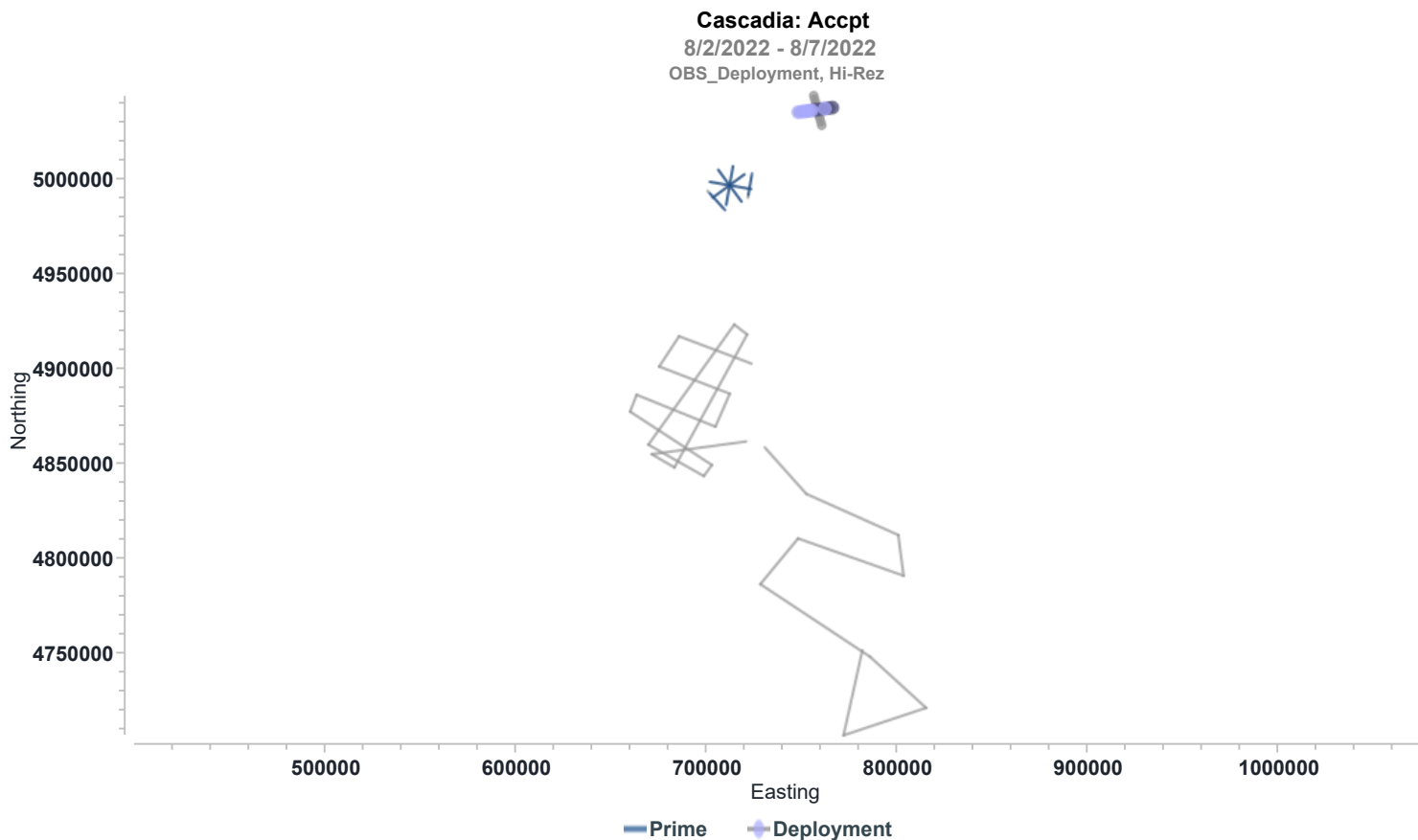
Cascadia (MGL2208) (no data for period)

| Seq   | Line | FGSP | LGSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|------|------|------|-----------|------------|-----------|------------|-------------|
| Total |      |      |      |           | 0.00       |           |            |             |

**Production Totals** (Accpt km by Shotpoint) - Full Fold**Hi-Rez, OBS\_Deployment**

Cascadia (MGL2208) (no data for period)

| Accepted km | Day  | Week   | Month  | Project |
|-------------|------|--------|--------|---------|
| Prime       | 0.00 | 107.40 | 107.40 | 107.40  |
| Combined    | 0.00 | 107.40 | 107.40 | 107.40  |

**Daily Comment Summaries - Daily Comments On Status of Equipment****Sun 07 Aug****Navigation:**

No Major Issues to Report

**Information Technology (IT):**

No Major Issues to Report

**Acquisition (MCS):**

No Major Issues to Report

**Towing and Handling (Source):**

No Major Issues to Report

**General Purpose Science:**

No Major issues to Report.

Daily Comment Summaries - Personnel Onboard

Sun 07 Aug

Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski Jr.- Contract Navigator  
Mark Walker - Contract Compressor Mech

PSO Staff On-board the Langseth

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

Science Party On-board the Langseth

Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU  
Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyritz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
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Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin Mcleod- Engineer - OSU

HSE Events Diary (Marcus G Langseth, )

Category

Code

Start

End

8/8/2022

Page 1

**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

Daily Comment Summaries - Daily Summary

Mon 08 Aug

At the start of the day the vessel was on station of original HF1-4. The remaining sites were required, the probe was recovered and the vessel transited to the southern portion of the North South Line. While on deck the probe was serviced, data confirmed, batteries changed and made ready to go. After another good tool box talk the probe was deployed over the side, re-zeroed and sent down deep.

Operations have continued all day moving to the North, at the close of day the vessel was transiting to the 9th station (out of 11) on the North South Line.

A safety meeting was held today between the Captain and technical crew to discuss the upcoming small boat operations. A good discussion was had with suggestions, and improvements which will make this a good, safe and efficient operation. As part of our preventive measures the mechanics tested both engines on the workboat, checked all the instrumentation, the VHF radio and the emergency/safety gear onboard. The crew members who will be leaving us tomorrow were also briefed on what to expect, what PPE will be needed, where to put their luggage and where they will board the boat. It should be a fun and exciting run in to port tomorrow.

Daily Comment Summaries - Plan for Tomorrow





Mon 08 Aug

The time plan looks to be spot on for finishing up this line of stations. The probe should be on deck around 23:00 local. The vessel will then transit in and will be near the jetty on the 9th at around 8-9 am local.

There are a couple of shipments to pick up along with the pingers. If all the plans materialize we should be coming back with 4. Both OSU and UW have been a great help in making this come together!

After the crew change operations the vessel will head back to NUBBIN where Heat flow operations will commence. The crew have been working 24hrs to merge, process and choose potential sights on these brand new seismic lines.

Timing Diary (Marcus G Langseth, OBS\_Deployment)

| Category  | Code     | Start            | End              | Duration |
|---|----------|------------------|------------------|----------|
|  Deploy  | AC_SM_De | Mon 8. Aug 00:00 | Mon 8. Aug 05:34 | 5.567    |
| Heat Probe Op 5 S/N: HF3-2<br>Heat Probe Op 5 S/N: HF3-2<br>Heat Probe Op 5 S/N: HF3-2<br>Heat Probe Op 5 S/N: HF3-2  |          |                  |                  |          |
|  Recovery  | DM_RC    | Mon 8. Aug 05:34 | Mon 8. Aug 07:59 | 2.417    |
| Heat Probe Recovery   |          |                  |                  |          |
|  Deployment  | MB_DP    | Mon 8. Aug 07:59 | Mon 8. Aug 09:26 | 1.450    |
| Heat Probe Deployment   |          |                  |                  |          |
|  Deploy  | AC_SM_De | Mon 8. Aug 09:26 | Mon 8. Aug 24:00 | 14.567   |
| Heat Probe 6 S/N: HF4-1<br>Heat Probe 6 S/N: HF4-2<br>Heat Probe 6 S/N: HF4-3<br>Heat Probe 6 S/N: HF4-4<br>Heat Probe 6 S/N: HF4-5<br>Heat Probe 6 S/N: HF4-6<br>Heat Probe 6 S/N: HF4-7<br>Heat Probe 6 S/N: HF4-8<br>Heat Probe 6 S/N: HF4-9 |          |                  |                  |          |

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Timing Day By Day (Marcus G Langseth, OBS\_Deployment)

Cascadia (MGL2208)

| 8-Aug                 | Hours         | % Percent      |
|-----------------------|---------------|----------------|
| <b>Acquisition</b>    | <b>20.133</b> | <b>83.889</b>  |
| Swath Move            | 20.133        | 83.889         |
| Deploy                | 20.133        | 83.889         |
| <b>Demobilisation</b> | <b>2.417</b>  | <b>10.069</b>  |
| Recovery              | 2.417         | 10.069         |
| <b>Mobilisation</b>   | <b>1.450</b>  | <b>6.042</b>   |
| Deployment            | 1.450         | 6.042          |
| <b>Day's Total</b>    | <b>24.000</b> | <b>100.000</b> |

Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category                  | Hours         | % Percent     |
|---------------------------|---------------|---------------|
| <b>Acquisition</b>        | <b>58.833</b> | <b>61.295</b> |
| Prime Line Change         | 4.167         | 4.341         |
| Production Prime          | 12.133        | 12.641        |
| Swath Move                | 42.533        | 44.313        |
| Deploy                    | 42.533        | 44.313        |
| <b>Mobilisation</b>       | <b>16.650</b> | <b>17.347</b> |
| Deployment                | 13.217        | 13.770        |
| Mob Offshore              | 3.433         | 3.577         |
| <b>Demobilisation</b>     | <b>8.900</b>  | <b>9.272</b>  |
| Recovery                  | 8.900         | 9.272         |
| <b>DownTime</b>           | <b>3.817</b>  | <b>3.976</b>  |
| Source                    | 3.817         | 3.976         |
| <b>Chargeable Standby</b> | <b>7.783</b>  | <b>8.109</b>  |
| Transit                   | 7.783         | 8.109         |
| <b>Total</b>              | <b>95.983</b> |               |

Basic Project Details

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

Basic Project Details

| OBS_Deployment   |     |                |     |                 |   |
|------------------|-----|----------------|-----|-----------------|---|
| General Details  |     |                |     |                 |   |
| Rcvr Separation: | 0 m | Rcvr Interval: | 0 m | Rcvr Increment: | 1 |

Production Listing (Accpt km) - Prime: Full Fold, Infill: Unknown

Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)



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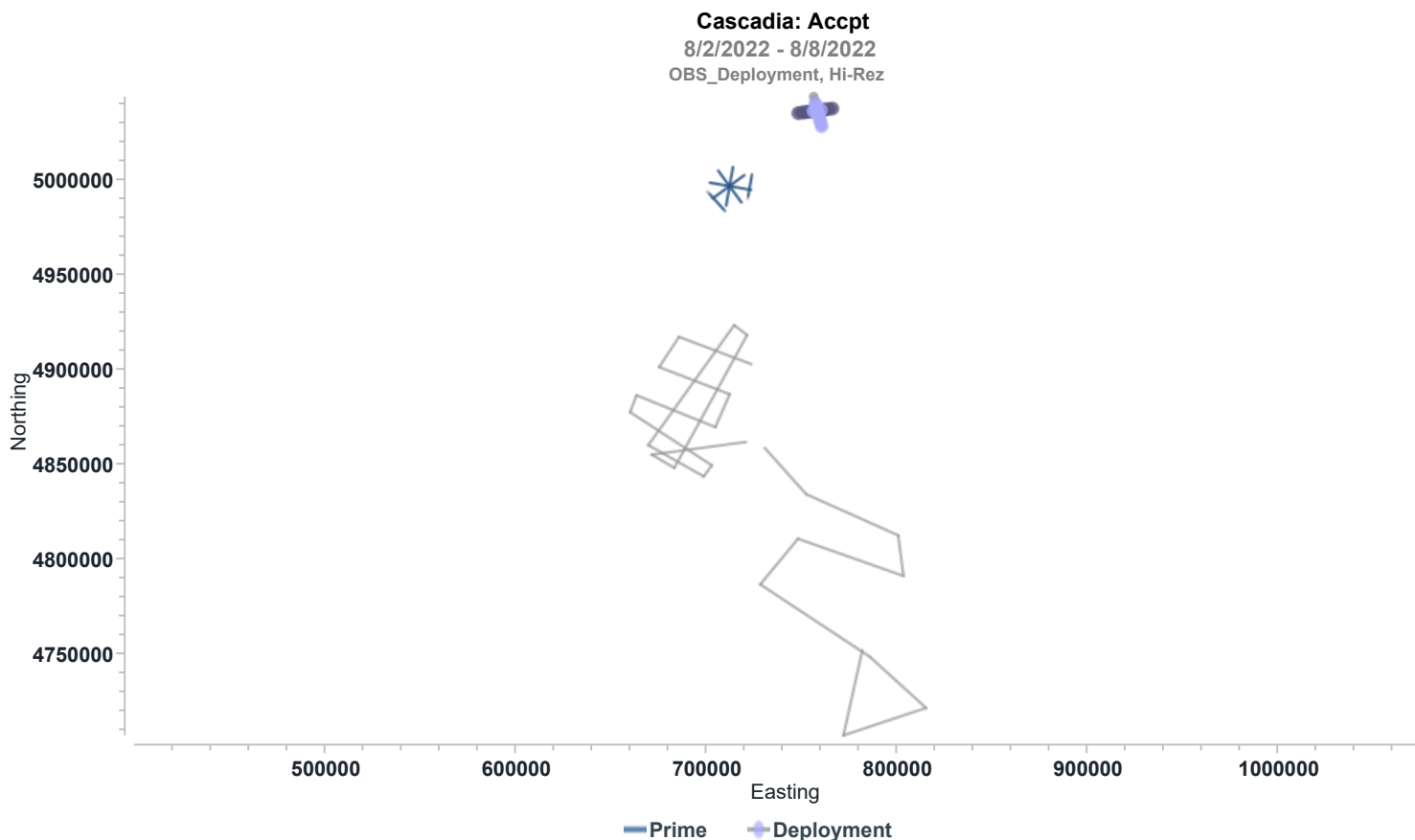
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| Seq   | Line | FGSP | LGSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|------|------|------|-----------|------------|-----------|------------|-------------|
| Total |      |      |      |           | 0.00       |           |            |             |

**Production Totals** (Accpt km by Shotpoint) - Full Fold**Hi-Rez, OBS\_Deployment**

Cascadia (MGL2208) (no data for period)

| Accepted km | Day  | Week | Month  | Project |
|-------------|------|------|--------|---------|
| Prime       | 0.00 | 0.00 | 107.40 | 107.40  |
| Combined    | 0.00 | 0.00 | 107.40 | 107.40  |

**Daily Comment Summaries - Daily Comments On Status of Equipment****Mon 08 Aug****Navigation:**  
No Major Issues to Report**Information Technology (IT):**  
No Major Issues to Report**Acquisition (MCS):**  
No Major Issues to Report**Towing and Handling (Source):**  
No Major Issues to Report**General Purpose Science:**  
No Major issues to Report.**Heat Probe:**  
No Major issues to Report.**Daily Comment Summaries - Personnel Onboard****Mon 08 Aug****Technical Staff On-board the Langseth**  
Cody Bahlau L-DEO OMO Chief Science Officer

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Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski Jr.- Contract Navigator  
Mark Walker - Contract Compressor Mech

**PSO Staff On-board the Langseth**

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

**Science Party On-board the Langseth**

Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU  
Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyritz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin McCloud- Engineer - OSU

**HSE Events Diary (Marcus G Langseth, )**

| Category | Code | Start | End |
|----------|------|-------|-----|
|----------|------|-------|-----|

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**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

Daily Comment Summaries - Daily Summary

Tue 09 Aug

The remaining station on the North south line were completed. The heat probe was recovered, and secured for transit.

When the MGL arrived at newport, the small boat was launched, crew members loaded and the small boat left for the OSU dock. The operation went very well in the morning, there were no last minute surprises, it was done safe and efficient. At the OSU dock the small boat unloaded the crew for a well earned break. While a walmart run was started the remained crew started to load supplies, the acoustic pingers and had a tutorial from the OSU crew. After a burger king lunch, which always tastes better wearing life jackets sitting in the boat, the crew drove the boat over to Elgund marine to pick up the boat hooks. Once all supplies were safely secured the small boat headed back to the mother ship.

The science team were burning the midnight oil looking at seismic data and picking the best points for our next heat flow campaign. The captain has the waypoints and we are full steam ahead for NUBBIN and our first drop which should be around midnight local.

Daily Comment Summaries - Plan for Tomorrow

Tue 09 Aug

Continue with Heat Flow ops on NUBBIN

Timing Diary (Marcus G Langseth, OBS\_Deployment)



| Category   | Code     | Start            | End              | Duration |
|--|----------|------------------|------------------|----------|
| Deploy   | AC_SM_De | Tue 9. Aug 00:00 | Tue 9. Aug 05:50 | 5.833    |
| Heat Probe Op 7 S/N: HF4-10<br>Heat Probe Op 7 S/N: HF4-11 |          |                  |                  |          |
| Recovery   | DM_RC    | Tue 9. Aug 05:50 | Tue 9. Aug 07:45 | 1.917    |
| Demobilising offshore, recovering outboard equipment.      |          |                  |                  |          |
| Transit  | SB_TRT   | Tue 9. Aug 07:45 | Tue 9. Aug 17:00 | 9.250    |
| Transit to Newport   |          |                  |                  |          |
| Field Operations   | NC_FO    | Tue 9. Aug 17:00 | Tue 9. Aug 21:00 | 4.000    |
| Crew Change and Supplie run                                |          |                  |                  |          |
| Transit  | SB_TRT   | Tue 9. Aug 21:00 | Tue 9. Aug 24:00 | 3.000    |
| Transit from Newport to NUBBIN                             |          |                  |                  |          |

Timing Day By Day (Marcus G Langseth, OBS\_Deployment)

Cascadia (MGL2208)

| 9-Aug              | Hours  | % Percent |
|--------------------|--------|-----------|
| Acquisition        | 5.833  | 24.306    |
| Swath Move         | 5.833  | 24.306    |
| Deploy             | 5.833  | 24.306    |
| Chargeable Standby | 12.250 | 51.042    |
| Transit            | 12.250 | 51.042    |
| Demobilisation     | 1.917  | 7.986     |
| Recovery           | 1.917  | 7.986     |

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| 9-Aug                  | Hours  | % Percent |
|------------------------|--------|-----------|
| Non-Chargeable StandBy | 4.000  | 16.667    |
| Field Operations       | 4.000  | 16.667    |
| Day's Total            | 24.000 | 100.000   |

## Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category               | Hours   | % Percent |
|------------------------|---------|-----------|
| Acquisition            | 64.667  | 53.896    |
| Prime Line Change      | 4.167   | 3.473     |
| Production Prime       | 12.133  | 10.113    |
| Swath Move             | 48.367  | 40.311    |
| Deploy                 | 48.367  | 40.311    |
| Mobilisation           | 16.650  | 13.877    |
| Deployment             | 13.217  | 11.015    |
| Mob Offshore           | 3.433   | 2.862     |
| Non-Chargeable StandBy | 4.000   | 3.334     |
| Field Operations       | 4.000   | 3.334     |
| Demobilisation         | 10.817  | 9.015     |
| Recovery               | 10.817  | 9.015     |
| DownTime               | 3.817   | 3.181     |
| Source                 | 3.817   | 3.181     |
| Chargeable Standby     | 20.033  | 16.697    |
| Transit                | 20.033  | 16.697    |
| Total                  | 119.983 |           |

## Basic Project Details

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

## Basic Project Details

| OBS_Deployment   |     |                |     |                 |   |
|------------------|-----|----------------|-----|-----------------|---|
| General Details  |     |                |     |                 |   |
| Rcvr Separation: | 0 m | Rcvr Interval: | 0 m | Rcvr Increment: | 1 |

## Production Listing (Accpt km) - Prime: Full Fold, Infill: Unknown

## Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)

| Seq   | Line | FGSP | LGSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|------|------|------|-----------|------------|-----------|------------|-------------|
| Total |      |      |      |           | 0.00       |           |            |             |

## Production Totals (Accpt km by Shotpoint) - Full Fold

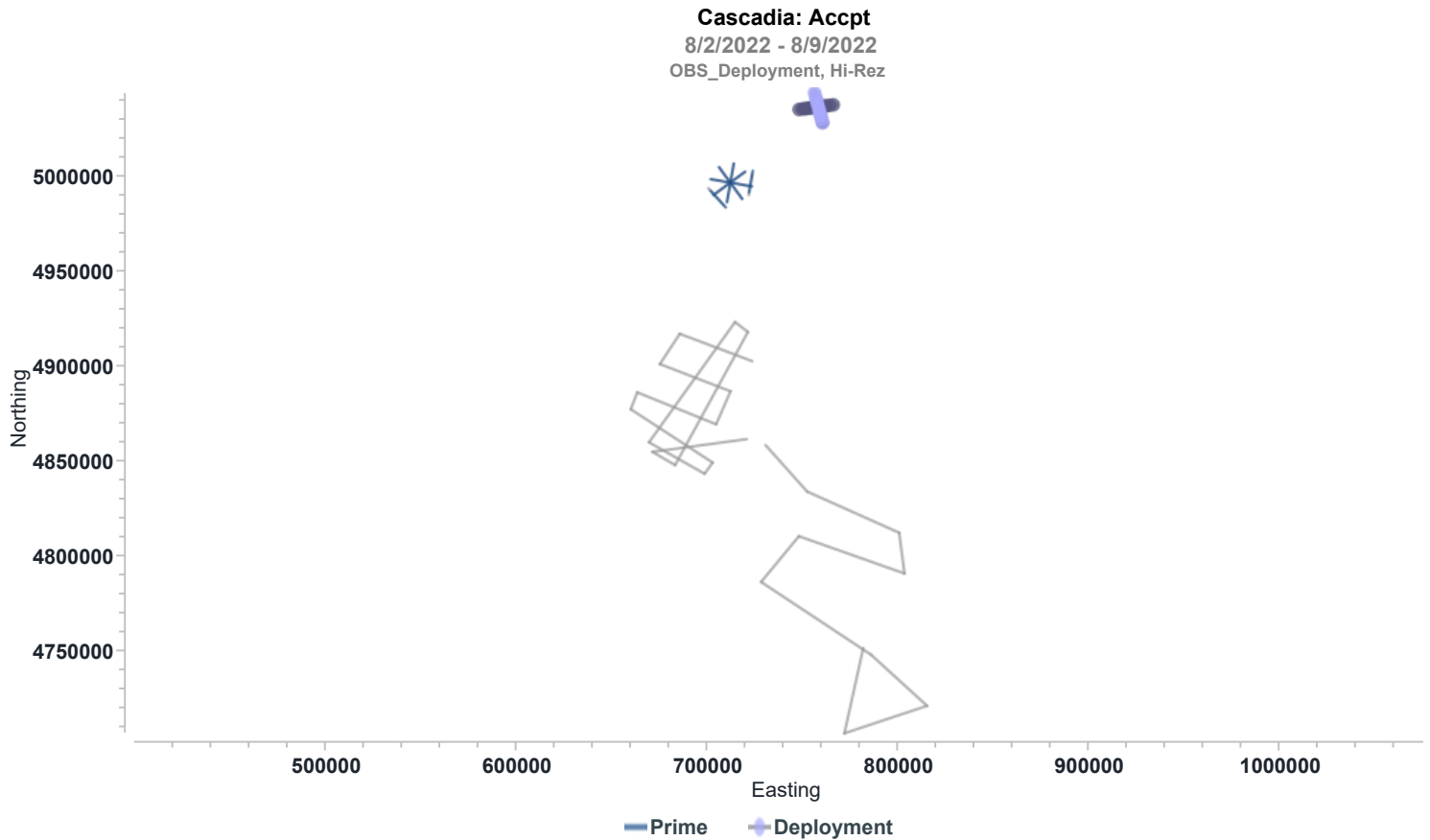
## Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)

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| Accepted km | Day  | Week | Month  | Project |
|-------------|------|------|--------|---------|
| Prime       | 0.00 | 0.00 | 107.40 | 107.40  |
| Combined    | 0.00 | 0.00 | 107.40 | 107.40  |



## Daily Comment Summaries - Daily Comments On Status of Equipment

**Tue 09 Aug**

**Navigation:**  
No Major Issues to Report

**Information Technology (IT):**  
No Major Issues to Report

**Acquisition (MCS):**  
No Major Issues to Report

**Towing and Handling (Source):**  
No Major Issues to Report

**General Purpose Science:**  
No Major issues to Report.

**Heat Probe:**  
No Major issues to Report.

## Daily Comment Summaries - Personnel Onboard

**Tue 09 Aug**

### Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski Jr.- Contract Navigator  
Mark Walker - Contract Compressor Mech

### PSO Staff On-board the Langseth

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO

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Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

Science Party On-board the Langseth

Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU  
Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyritz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin McCloud- Engineer - OSU

HSE Events Diary (Marcus G Langseth, )

| Category | Code | Start | End |
|----------|------|-------|-----|
|----------|------|-------|-----|

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**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

## Daily Comment Summaries - Daily Summary

Wed 10 Aug

Transit from Newport after a safe and efficient crew change and supply run. The vessel was on station at ~7:00 UTC. A tool box talk was held and the probe was deployed. The probe was stopped at 50 meters and the OSU acoustic pinger was installed. A few settings needed to be tweaked, and then the two arrivals were coming in strong and solid. After a training session by the PIs we were off the races, deploying the probe and watching the returns. Six stations were acquired on line 1a, the probe was recovered for a longer transit to check batteries and data. Once on deck the cable needed to be re terminated. It was kinked in several spots 2-3 feet up from the termination. The team found some fibre hose to put over the first 2 meters of cable to hopefully reduce the wear and tear the 680 cable is seeing. This is our first prevention/mitigation tactic, we have a few more options up our sleeve if this still is an issue.

The probe was redeployed for the 7th and 8th station on line 1a. Before heading past the sea mount the decision was made to pull the probe to surface download the data and then once on station to deploy it again.

At the end of day the probe was being deployed back down for station 9 on Line 1a.

Ongoing maintenance and preparations:

Re-rigged shackles on tailbuoy lifting harness

Bolted on light on tail buoy

Put new parts onto GI Gun. Still no changes.

Inspected aft tail buoy door on main deck and came up plan with Mark to get it repaired

As discussed the second GI gun has an air leak that has been trouble shot for the last several days. It appears to be wear in the main housing, while it can't be fixed it should not get any worse.

The team used up the last new termination kit today. They will clean and refurbish the used parts, this is what we will use moving forward. All the procedures will be followed along with the pull test specifications.



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## Daily Comment Summaries - Plan for Tomorrow

## Wed 10 Aug

Continue to acquire Heat Flow Station on Nubbin

| Action                     | # of Stations | Heading | Nautical Miles | Duration | Stat Date & Time | End Date & Time | Speed   |
|----------------------------|---------------|---------|----------------|----------|------------------|-----------------|---------|
| NUBBIN Heat Flow           | 24            |         |                | 50:00:00 | 8/10/2022 0:04   | 8/12/2022 2:04  |         |
| Transit to PF              |               |         |                | 6:00:00  | 8/12/2022 2:04   | 8/12/2022 8:04  | 8.5     |
| Deploy Gear                |               |         |                | 3:00:00  | 8/12/2022 8:04   | 8/12/2022 11:04 |         |
| Acquire Seismic Lines - PF |               |         |                |          |                  |                 |         |
| 1 P05                      |               | 219.7°  |                |          | 8/12/2022 11:45  | 8/12/2022 21:07 | 5.00 kt |
| 2 P03                      |               | 32.8°   |                |          | 8/12/2022 23:45  | 8/13/2022 9:22  | 5.00 kt |

## Timing Diary (Marcus G Langseth, OBS\_Deployment)



| Category   | Code     | Start             | End               | Duration |
|--|----------|-------------------|-------------------|----------|
| Transit  | SB_TRT   | Wed 10. Aug 00:00 | Wed 10. Aug 07:04 | 7.067    |
| Transit from Newport to NUBBIN   |          |                   |                   |          |
| Deployment   | MB_DP    | Wed 10. Aug 07:04 | Wed 10. Aug 09:02 | 1.967    |
| Heat Probe Deployment  |          |                   |                   |          |
| Deploy   | AC_SM_De | Wed 10. Aug 09:02 | Wed 10. Aug 17:35 | 8.550    |
| Heat Probe Op 8 S/N: HF5-1<br>Heat Probe Op 8 S/N: HF5-2<br>Heat Probe Op 8 S/N: HF5-3<br>Heat Probe Op 8 S/N: HF5-4<br>Heat Probe Op 8 S/N: HF5-5<br>Heat Probe Op 8 S/N: HF5-6 |          |                   |                   |          |
| Recovery   | DM_RC    | Wed 10. Aug 17:35 | Wed 10. Aug 18:47 | 1.200    |
| Heat Probe Recovery  |          |                   |                   |          |



| Category   | Code     | Start             | End               | Duration |
|--|----------|-------------------|-------------------|----------|
|  Deployment | MB_DP    | Wed 10. Aug 18:47 | Wed 10. Aug 22:13 | 3.433    |
| Heat Probe Deployment  |          |                   |                   |          |
|  Deploy     | AC_SM_De | Wed 10. Aug 22:13 | Wed 10. Aug 24:00 | 1.783    |
| Heat Probe Op 9 S/N: HF6-1   |          |                   |                   |          |

Timing Day By Day (Marcus G Langseth, OBS\_Deployment)

Cascadia (MGL2208)

| 10-Aug                    | Hours         | % Percent      |
|---------------------------|---------------|----------------|
| <b>Acquisition</b>        | <b>10.333</b> | <b>43.056</b>  |
| Swath Move                | 10.333        | 43.056         |
| Deploy                    | 10.333        | 43.056         |
| <b>Chargeable Standby</b> | <b>7.067</b>  | <b>29.444</b>  |
| Transit                   | 7.067         | 29.444         |
| <b>Demobilisation</b>     | <b>1.200</b>  | <b>5.000</b>   |
| Recovery                  | 1.200         | 5.000          |
| <b>Mobilisation</b>       | <b>5.400</b>  | <b>22.500</b>  |
| Deployment                | 5.400         | 22.500         |
| <b>Day's Total</b>        | <b>24.000</b> | <b>100.000</b> |

Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category                      | Hours          | % Percent     |
|-------------------------------|----------------|---------------|
| <b>Acquisition</b>            | <b>75.000</b>  | <b>52.089</b> |
| Prime Line Change             | 4.167          | 2.894         |
| Production Prime              | 12.133         | 8.427         |
| Swath Move                    | 58.700         | 40.769        |
| Deploy                        | 58.700         | 40.769        |
| <b>Mobilisation</b>           | <b>22.050</b>  | <b>15.314</b> |
| Deployment                    | 18.617         | 12.930        |
| Mob Offshore                  | 3.433          | 2.385         |
| <b>Non-Chargeable StandBy</b> | <b>4.000</b>   | <b>2.778</b>  |
| Field Operations              | 4.000          | 2.778         |
| <b>Demobilisation</b>         | <b>12.017</b>  | <b>8.346</b>  |
| Recovery                      | 12.017         | 8.346         |
| <b>DownTime</b>               | <b>3.817</b>   | <b>2.651</b>  |
| Source                        | 3.817          | 2.651         |
| <b>Chargeable Standby</b>     | <b>27.100</b>  | <b>18.822</b> |
| Transit                       | 27.100         | 18.822        |
| <b>Total</b>                  | <b>143.983</b> |               |

Basic Project Details

| Hi-Rez          |         |                  |        |                     |      |
|-----------------|---------|------------------|--------|---------------------|------|
| General Details |         |                  |        |                     |      |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |      |
| Cable Details   |         |                  |        |                     |      |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m  |

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## Hi-Rez

|             |     |         |       |                 |        |
|-------------|-----|---------|-------|-----------------|--------|
| Tail Depth: | 4 m | Length: | 900 m | Group interval: | 6.25 m |
|-------------|-----|---------|-------|-----------------|--------|

## Production Totals (Chgd km by Shotpoint) - Full Fold

## Hi-Rez

Cascadia (MGL2208) (no data for period)

| Charged km | Day  | Week | Month  | Project |
|------------|------|------|--------|---------|
| Prime      | 0.00 | 0.00 | 101.23 | 101.23  |
| Combined   | 0.00 | 0.00 | 101.23 | 101.23  |

## Production Listing (Chgd km) - Prime: Full Fold, Infill: Unknown

## Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)

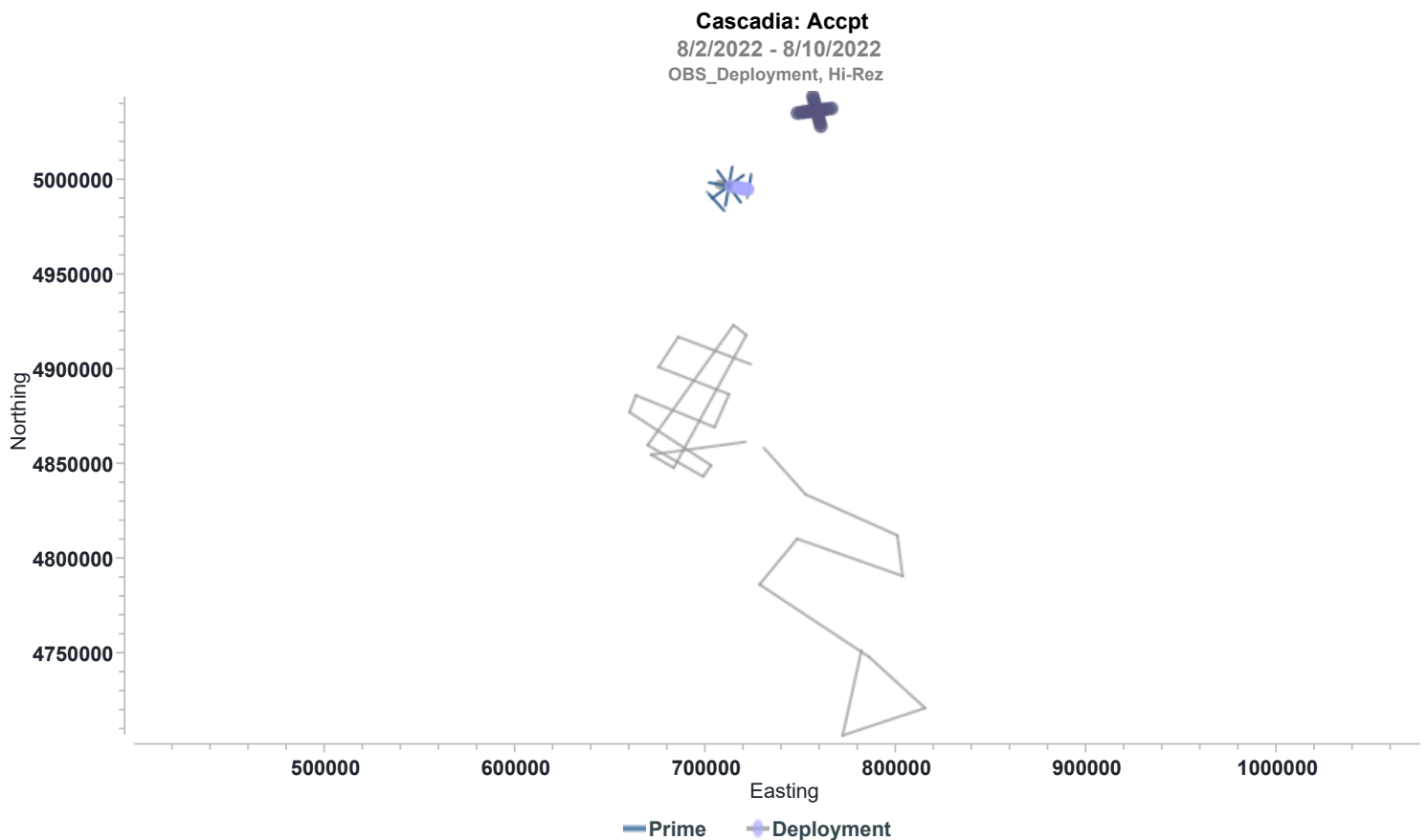
| Seq   | Line | FCSP | LCSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|------|------|------|-----------|------------|-----------|------------|-------------|
| Total |      |      |      |           | 0.00       |           |            |             |

## Production Totals (Accpt km by Shotpoint) - Full Fold

## Hi-Rez

Cascadia (MGL2208) (no data for period)

| Accepted km | Day  | Week | Month  | Project |
|-------------|------|------|--------|---------|
| Prime       | 0.00 | 0.00 | 107.40 | 107.40  |
| Combined    | 0.00 | 0.00 | 107.40 | 107.40  |



## Daily Comment Summaries - Daily Comments On Status of Equipment

## Wed 10 Aug

Navigation:  
No Major Issues to Report

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Information Technology (IT):  
No Major Issues to Report

Acquisition (MCS):  
No Major Issues to Report

Towing and Handling (Source):  
No Major Issues to Report

General Purpose Science:  
No Major issues to Report.

Heat Probe:  
No Major issues to Report.

Daily Comment Summaries - Personnel Onboard

Wed 10 Aug

Technical Staff On-board the Langseth  
Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski Jr.- Contract Navigator  
Mark Walker - Contract Compressor Mech

PSO Staff On-board the Langseth  
Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

Science Party On-board the Langseth  
Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU  
Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyritz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin McCloud- Engineer - OSU

HSE Events Diary (Marcus G Langseth, )

| Category                                    | Code       | Start | End   |
|---|------------|-------|-------|
| Daily Total Category                        |            | Code  | Count |
| <div><div></div>Task, Hazard, Control</div> | Re_Con_THC |       | 1     |
| 8/10/2022                                   |            |       |       |
| Positive - Recognition to the Galley        |            |       |       |
| <div><div></div>Toolbox Meetings</div>      | Mtgs_Tbox  |       | 3     |
| 8/10/2022                                   |            |       |       |
| Tool Box Meeting To discuss Recovery        |            |       |       |
| 8/10/2022                                   |            |       |       |
| Too Box Meeting to Discuss Deployment       |            |       |       |
| 8/10/2022                                   |            |       |       |
| Tool Box Meeting to discuss Deployment      |            |       |       |

HSE Event Period Totals - Project (Marcus G Langseth)

| Category                         | Code | Day | Week | Month | Project | Proj Hours | Man Hours |
|----------------------------------|------|-----|------|-------|---------|------------|-----------|
| <div>Meetings</div>              | Mtgs | 3   | 8    | 18    | 18      | 1.000      |           |
| <div>Start-up Meeting</div>      | StUp | 0   | 0    | 1     | 1       | 1.000      |           |
| <div>Toolbox Meetings</div>      | Tbox | 3   | 8    | 17    | 17      |            |           |
| <div>Reports</div>               | Re   | 1   | 1    | 1     | 1       |            |           |
| <div>Contractor</div>            | Con  | 1   | 1    | 1     | 1       |            |           |
| <div>Task, Hazard, Control</div> | THC  | 1   | 1    | 1     | 1       |            |           |

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**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

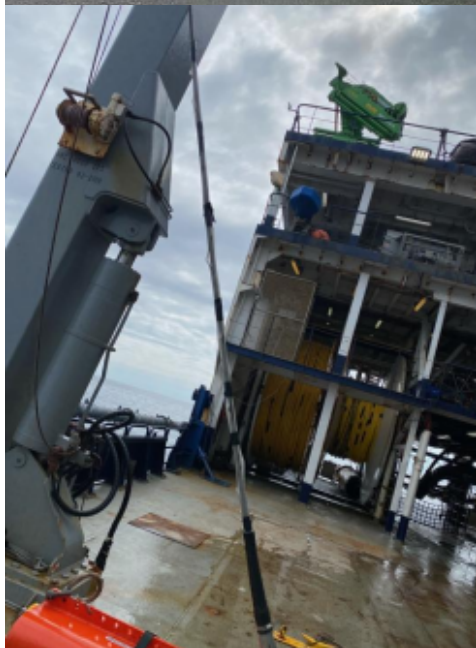
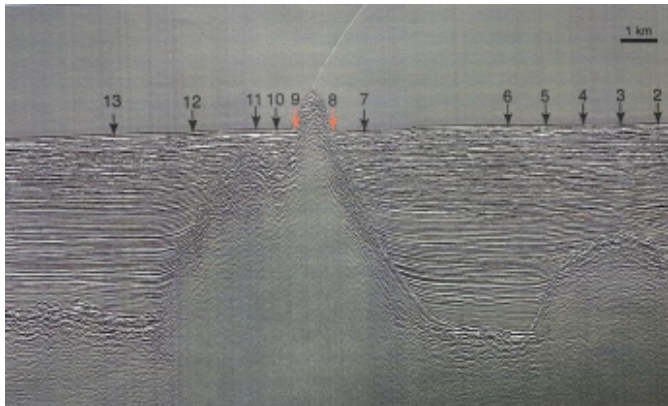
## Daily Comment Summaries - Daily Summary

Thu 11 Aug

A busy day of deployments, recoveries and data acquisition! Four probe recoveries today, a small tool box talk was held either as a group or individually to discuss each crew members role in the recovery/deployment. The seas are calm but we should not get lulled in to complacency, the heat probe is 1000 plus pounds and every recovery/deployment must be respected. As mentioned in yesterdays daily report, the cable was re-terminated right at the end of yesterday and the start of today. That is two mechanical re-terminations for this project. The team put some bend restriction/chafing gear on the wire, from the termination 5-6 feet up. After a busy day of probe insertions and recoveries everything so far looks good with the wire. Hopefully this will mitigate the problem.

As the probe was recovered the data was inspected, it appears that there was a problem in the probe with sites HF5-1 to HF5-6. Those sites are located on the Eastern Edge of line 1a. To prevent further problems the probe was recovered to just download and check the data. At one point when on deck the cable connectors were disconnected and cleaned. This appears to have fixed the problem of possible water intrusion when the pressures increased. The remaining sites on line 1a look better, while the sites on lines 3,5 and 7 look very good. The plan therefore is to go back and reacquire the first 6 stations on line 1a. These are particularly important because the hirez seismic uncovered a smaller sea mount that is completely covered in sediment, baby nubbin...

After completion of NUBBIN the plan is to head south, deploy the streamer and acquire seismic data over PF. There may be a slight change in plans as the Team onboard is discussing the best strategy. The current plan is to acquire the high priority lines first. Recovery the gear and transit to Diebold for heat probe ops. This will give the onboard team plenty of time to analyse the seismic data and choose good stations for PF.



Fixed starboard aft tailbuoy door. Welded tabs in proper locations so the cross bar will actually work. It is better than it was before  
Mounted quick links on P-links for ease of connections while deploying head float on streamer

## Thu 11 Aug





## Continue with Heat Flow Ops

# MGL 2208 Time Plan

Purple are actual numbers ( ALL TIMES ARE LOCAL)


| Action                          | # of Stations | Heading | Nautical Miles | Duration  | Stat Date & Time | End Data & Time | Speed   |
|---------------------------------|---------------|---------|----------------|-----------|------------------|-----------------|---------|
| Margin HF - East West           | 5             |         |                |           | 8/7/2022 14:27   | 8/8/2022 0:59   |         |
| Margin Transit to North Line    |               |         |                |           | 8/8/2022 0:59    | 8/8/2022 1:06   |         |
| Margin HF - North South         | 11            |         |                |           | 8/8/2022 1:06    | 8/9/2022 0:30   |         |
| Transit to Newport              |               |         |                |           | 8/9/2022 0:30    | 8/9/2022 10:30  |         |
| Crew Change and Supplies        |               |         |                |           | 8/9/2022 10:30   | 8/9/2022 14:00  |         |
| Transit to Nubbin               |               |         |                |           | 8/9/2022 14:00   | 8/10/2022 0:04  | 8.5     |
| NUBBIN Heat Flow ( 11 Stations) | 11            |         |                | 23:00:00  | 8/11/2022 18:00  | 8/12/2022 17:00 |         |
| Transit to PF                   |               |         |                | 6:00:00   | 8/12/2022 17:00  | 8/12/2022 23:00 | 8.5     |
| Deploy Gear                     |               |         |                | 3:00:00   | 8/12/2022 23:00  | 8/13/2022 2:00  |         |
| Acquire Seismic Lines - PF      |               |         |                |           |                  |                 |         |
| 1 P05                           |               | 219.7°  |                |           | 8/13/2022 2:45   | 8/13/2022 12:07 | 5.00 kt |
| 2 P03                           |               | 32.8°   |                |           | 8/13/2022 14:45  | 8/14/2022 0:22  | 5.00 kt |
| 3 P14                           |               | 294.9°  |                |           | 8/14/2022 3:11   | 8/14/2022 8:06  | 5.00 kt |
| 4 P13                           |               | 217.4°  |                |           | 8/14/2022 9:36   | 8/14/2022 11:56 | 5.00 kt |
| 5 P12                           |               | 115.3°  |                |           | 8/14/2022 13:29  | 8/14/2022 18:18 | 5.00 kt |
| 6 P11                           |               | 207.7°  |                |           | 8/14/2022 19:49  | 8/14/2022 22:08 | 5.00 kt |
| 7 P10                           |               | 296.3°  |                |           | 8/14/2022 23:40  | 8/15/2022 5:04  | 5.00 kt |
| 8 P09                           |               | 205.3°  |                |           | 8/15/2022 6:35   | 8/15/2022 7:47  | 5.00 kt |
| 9 P08                           |               | 127.4°  |                |           | 8/15/2022 9:17   | 8/15/2022 15:29 | 5.00 kt |
| 10 P07                          |               | 220.0°  |                |           | 8/15/2022 17:01  | 8/15/2022 17:56 | 5.00 kt |
| 11 P06                          |               | 303.8°  |                |           | 8/15/2022 19:26  | 8/15/2022 23:30 | 5.00 kt |
| 12 P01                          |               | 86.5°   |                |           | 8/16/2022 0:50   | 8/16/2022 6:52  | 5.00 kt |
| Recover Gear                    |               |         |                | 3:00:00   | 8/16/2022 6:52   | 8/16/2022 9:52  |         |
| PSEUDFAULT Heat Flow            | 70            |         |                | 140:00:00 | 8/16/2022 9:52   | 8/22/2022 5:52  |         |
| Transit to DIEBOLD              |               |         |                | 2:00:00   | 8/22/2022 5:52   | 8/22/2022 7:52  |         |
| DIEBOLD Heat Flow               | 32            |         |                | 64:00:00  | 8/22/2022 7:52   | 8/24/2022 23:52 |         |
| Transit to Newport              |               |         | 105            | 12:30     | 8/24/2022 23:52  | 8/25/2022 12:22 | 8.5     |

### Timing Diary (Marcus G Langseth, OBS Deployment)

| Category   | Code     | Start             | End               | Duration |
|--|----------|-------------------|-------------------|----------|
|  Deploy     | AC_SM_De | Thu 11. Aug 00:00 | Thu 11. Aug 01:11 | 1.183    |
| Heat Probe Op 10 S/N: HF6-2  |          |                   |                   |          |
|  Recovery   | DM_RC    | Thu 11. Aug 01:11 | Thu 11. Aug 01:40 | 0.483    |
| Heat Probe Recovery  |          |                   |                   |          |
|  Deployment | MB_DP    | Thu 11. Aug 01:40 | Thu 11. Aug 02:16 | 0.600    |
| Heat Probe Deployment  |          |                   |                   |          |
|  Deploy     | AC_SM_De | Thu 11. Aug 02:16 | Thu 11. Aug 08:50 | 6.567    |
| Heat Probe Op 11 S/N: HF6-3  |          |                   |                   |          |
| Heat Probe Op 11 S/N: HF6-4  |          |                   |                   |          |
| Heat Probe Op 11 S/N: HF6-5  |          |                   |                   |          |

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| Category   | Code     | Start             | End               | Duration |
|--|----------|-------------------|-------------------|----------|
| Heat Probe Op 11 S/N: HF6-6<br>Heat Probe Op 11 S/N: HF6-7   |          |                   |                   |          |
|  Recovery                                 | DM_RC    | Thu 11. Aug 08:50 | Thu 11. Aug 10:00 | 1.167    |
| Heat Probe Recovery  |          |                   |                   |          |
|  Deployment                               | MB_DP    | Thu 11. Aug 10:00 | Thu 11. Aug 12:56 | 2.933    |
| Heat Probe Deployment  |          |                   |                   |          |
|  Deploy                                   | AC_SM_De | Thu 11. Aug 12:56 | Thu 11. Aug 14:32 | 1.600    |
| Heat Probe Op 12 S/N: HF7-1  |          |                   |                   |          |
|  Recovery                                 | DM_RC    | Thu 11. Aug 14:32 | Thu 11. Aug 15:11 | 0.650    |
| Heat Probe Recovery  |          |                   |                   |          |
|  Deployment                               | MB_DP    | Thu 11. Aug 15:11 | Thu 11. Aug 16:51 | 1.667    |
| Heat Probe Deployment  |          |                   |                   |          |
|  Deploy                                   | AC_SM_De | Thu 11. Aug 16:51 | Thu 11. Aug 21:41 | 4.833    |
| Heat Probe Op 13 S/N: HF8-1<br>Heat Probe Op 13 S/N: HF8-2<br>Heat Probe Op 13 S/N: HF8-3<br>Heat Probe Op 13 S/N: HF8-4 |          |                   |                   |          |
|  Recovery                                 | DM_RC    | Thu 11. Aug 21:41 | Thu 11. Aug 22:30 | 0.817    |
| Heat Probe Recovery  |          |                   |                   |          |
|  Deployment                               | MB_DP    | Thu 11. Aug 22:30 | Thu 11. Aug 24:00 | 1.500    |
| Heat Probe Deployment  |          |                   |                   |          |

## Timing Day By Day (Marcus G Langseth, OBS\_Deployment)

Cascadia (MGL2208)

| 11-Aug                | Hours         | % Percent      |
|-----------------------|---------------|----------------|
| <b>Acquisition</b>    | <b>14.183</b> | <b>59.097</b>  |
| Swath Move            | 14.183        | 59.097         |
| Deploy                | 14.183        | 59.097         |
| <b>Demobilisation</b> | <b>3.117</b>  | <b>12.986</b>  |
| Recovery              | 3.117         | 12.986         |
| <b>Mobilisation</b>   | <b>6.700</b>  | <b>27.917</b>  |
| Deployment            | 6.700         | 27.917         |
| <b>Day's Total</b>    | <b>24.000</b> | <b>100.000</b> |

## Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category                      | Hours         | % Percent     |
|-------------------------------|---------------|---------------|
| <b>Acquisition</b>            | <b>89.183</b> | <b>53.085</b> |
| Prime Line Change             | 4.167         | 2.480         |
| Production Prime              | 12.133        | 7.222         |
| Swath Move                    | 72.883        | 43.383        |
| Deploy                        | 72.883        | 43.383        |
| <b>Mobilisation</b>           | <b>28.750</b> | <b>17.113</b> |
| Deployment                    | 25.317        | 15.069        |
| Mob Offshore                  | 3.433         | 2.044         |
| <b>Non-Chargeable StandBy</b> | <b>4.000</b>  | <b>2.381</b>  |
| Field Operations              | 4.000         | 2.381         |



| Category           | Hours   | % Percent |
|--------------------|---------|-----------|
| Demobilisation     | 15.150  | 9.018     |
| Recovery           | 15.150  | 9.018     |
| DownTime           | 3.817   | 2.272     |
| Source             | 3.817   | 2.272     |
| Chargeable Standby | 27.100  | 16.131    |
| Transit            | 27.100  | 16.131    |
| Total              | 168.000 |           |

Basic Project Details

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

Production Totals (Chgd km by Shotpoint) - Full Fold

Hi-Rez

Cascadia (MGL2208) (no data for period)

| Charged km | Day  | Week | Month  | Project |
|------------|------|------|--------|---------|
| Prime      | 0.00 | 0.00 | 101.23 | 101.23  |
| Combined   | 0.00 | 0.00 | 101.23 | 101.23  |

Production Listing (Chgd km) - Prime: Full Fold, Infill: Unknown

Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)

| Seq   | Line | FCSP | LCSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|------|------|------|-----------|------------|-----------|------------|-------------|
| Total |      |      |      |           | 0.00       |           |            |             |

Production Totals (Accpt km by Shotpoint) - Full Fold

Hi-Rez

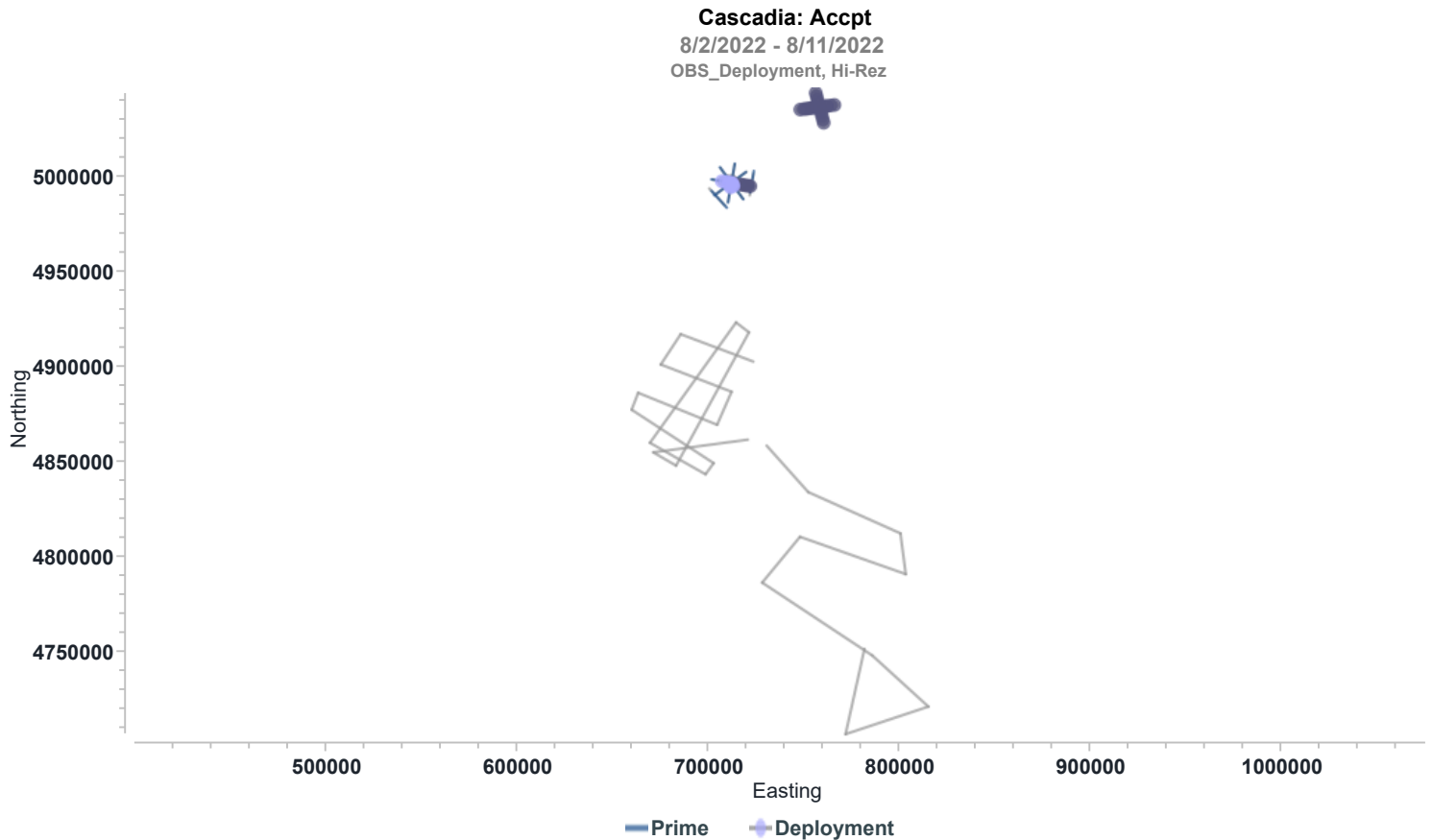
Cascadia (MGL2208) (no data for period)

| Accepted km | Day  | Week | Month  | Project |
|-------------|------|------|--------|---------|
| Prime       | 0.00 | 0.00 | 107.40 | 107.40  |
| Combined    | 0.00 | 0.00 | 107.40 | 107.40  |



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## Daily Comment Summaries - Daily Comments On Status of Equipment

Thu 11 Aug

### Navigation:

No Major Issues to Report

### Information Technology (IT):

No Major Issues to Report

### Acquisition (MCS):

No Major Issues to Report

### Towing and Handling (Source):

No Major Issues to Report

### General Purpose Science:

No Major issues to Report.

### Heat Probe:

No Major issues to Report.

## Daily Comment Summaries - Personnel Onboard

Thu 11 Aug

### Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski Jr.- Contract Navigator  
Mark Walker - Contract Compressor Mech

### PSO Staff On-board the Langseth

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

### Science Party On-board the Langseth

Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU

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Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyrirtz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin Mcloud- Engineer - OSU

## HSE Events Diary (Marcus G Langseth, )

| Category   | Code      | Start | End   |
|--|-----------|-------|-------|
| Daily Total Category   |           | Code  | Count |
|  Toolbox Meetings | Mtgs_Tbox |       | 8     |
| 8/11/2022  |           |       |       |
| TBT - Heat Probe Deployment  |           |       |       |
| 8/11/2022  |           |       |       |
| TBT - Heat Probe Recovery  |           |       |       |

## HSE Event Period Totals - Project (Marcus G Langseth)

| Category  | Code | Day | Week | Month | Project | Proj Hours | Man Hours |
|---|------|-----|------|-------|---------|------------|-----------|
|  Meetings                | Mtgs | 8   | 16   | 26    | 26      | 1.000      |           |
|  Start-up Meeting        | StUp | 0   | 0    | 1     | 1       | 1.000      |           |
|  Toolbox Meetings      | Tbox | 8   | 16   | 25    | 25      |            |           |
|  Reports               | Re   | 0   | 1    | 1     | 1       |            |           |
|  Contractor            | Con  | 0   | 1    | 1     | 1       |            |           |
|  Task, Hazard, Control | THC  | 0   | 1    | 1     | 1       |            |           |

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**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

## Daily Comment Summaries - Daily Summary

Fri 12 Aug

A steady day of heat Probe ops. Several cycles of recoveries and deployments followed by some good data acquisition. Based on the brand new data acquired, the seismic along with the heat probe, there appears to be some exciting things heating up near NUBBIN... The Science Team decided on 3 new locations on the South West side. At the end of the day the vessel was just finishing up points 1-6 that needed to be reacquired and will transit to the new points 25, 26 and 27. After those points the vessel will sail south for seismic.

The seismic lines were slightly altered to give all teams onboard the best use of time. The high priority seismic lines with the potential heat flow stations will be acquired. The gear will then be recovered and the vessel will go to Diebold for heat flow ops. This will give the processing team plenty of time to analyze the data and select some high value points.

On the last recovery of the day, once onboard the cable had very slight damage. The fibre hose/chafing guard really seems to be paying off. It was not enough to want to re-terminate but all agreed that without the hose we would most likely would have needed to. A few more wraps of black seismic magic tape was applied and the probe was sent down deep again.

## Daily Comment Summaries - Plan for Tomorrow

Fri 12 Aug

Heat flow ops until early morning local, transit and start Seismic around noon local.

## MGL 2208 Time Plan

Purple are actual numbers ( ALL TIMES ARE LOCAL)










| Action                        | # of Stations | Heading | Nautical Miles | Duration  | Stat Date & Time | End Date & Time | Speed   |
|-------------------------------|---------------|---------|----------------|-----------|------------------|-----------------|---------|
| NUBBIN Heat Flow ( 5 Remain ) | 5             |         |                | 10:00:00  | 8/12/2022 16:19  | 8/13/2022 2:19  |         |
| Transit to PF                 |               |         |                | 6:00:00   | 8/13/2022 2:19   | 8/13/2022 8:19  | 8.5     |
| Deploy Gear                   |               |         |                | 3:00:00   | 8/13/2022 8:19   | 8/13/2022 11:19 |         |
| Acquire Seismic Lines - PF    |               |         |                |           |                  |                 |         |
| 1 P01                         |               | 290.7°  |                |           | 8/13/2022 11:21  | 8/13/2022 15:46 | 5.00 kt |
| 2 P02                         |               | 213.2°  |                |           | 8/13/2022 17:07  | 8/13/2022 19:13 | 5.00 kt |
| 3 P03                         |               | 111.1°  |                |           | 8/13/2022 20:37  | 8/14/2022 0:57  | 5.00 kt |
| 4 P04                         |               | 203.5°  |                |           | 8/14/2022 2:19   | 8/14/2022 4:24  | 5.00 kt |
| 5 P05                         |               | 292.1°  |                |           | 8/14/2022 5:46   | 8/14/2022 10:38 | 5.00 kt |
| 6 P06                         |               | 201.1°  |                |           | 8/14/2022 12:00  | 8/14/2022 13:05 | 5.00 kt |
| 7 P07                         |               | 123.2°  |                |           | 8/14/2022 14:25  | 8/14/2022 20:00 | 5.00 kt |
| 8 P08                         |               | 358.3°  |                |           | 8/14/2022 21:22  | 8/14/2022 21:44 | 5.00 kt |
| 9 P09                         |               | 270.4°  |                |           | 8/14/2022 23:04  | 8/15/2022 2:30  | 5.00 kt |
| 10 P10                        |               | 358.5°  |                |           | 8/15/2022 3:52   | 8/15/2022 4:50  | 5.00 kt |
| 11 P11                        |               | 82.3°   |                |           | 8/15/2022 6:11   | 8/15/2022 11:37 | 5.00 kt |
| Recover Gear                  |               |         |                | 3:00:00   | 8/15/2022 11:37  | 8/15/2022 14:37 |         |
| Transit to DIEBOLD            |               |         |                | 1:00:00   | 8/15/2022 14:37  | 8/15/2022 15:37 | ~8.5    |
| DIEBOLD Heat Flow             | 32            |         |                | 64:00:00  | 8/15/2022 15:37  | 8/18/2022 7:37  |         |
| Transit to PSEUDFAULT         |               |         |                | 2:00:00   | 8/18/2022 7:37   | 8/18/2022 9:37  | ~8.5    |
| PSEUDFAULT Heat Flow          | 70            |         |                | 140:00:00 | 8/18/2022 9:37   | 8/24/2022 5:37  |         |
| Transit to Newport            |               |         | 105            | 12:30     | 8/24/2022 5:37   | 8/24/2022 18:07 | 8.5     |

## Timing Diary (Marcus G Langseth, OBS\_Deployment)



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| Category   | Code     | Start             | End               | Duration |
|--|----------|-------------------|-------------------|----------|
|  Deploy                                       | AC_SM_De | Fri 12. Aug 00:00 | Fri 12. Aug 05:22 | 5.367    |
| Heat Probe Op 14 S/N: HF9-1<br>Heat Probe Op 14 S/N: HF9-2<br>Heat Probe Op 14 S/N: HF9-3<br>Heat Probe Op 14 S/N: HF9-4     |          |                   |                   |          |
|  Recovery                                     | DM_RC    | Fri 12. Aug 05:22 | Fri 12. Aug 06:39 | 1.283    |
| Heat Probe Recovery  |          |                   |                   |          |
|  Deployment                                   | MB_DP    | Fri 12. Aug 06:39 | Fri 12. Aug 09:07 | 2.467    |
| Heat Probe Deployment  |          |                   |                   |          |
|  Deploy                                       | AC_SM_De | Fri 12. Aug 09:07 | Fri 12. Aug 11:19 | 2.200    |
| Heat Probe Op 15 S/N: HF10-1<br>Heat Probe Op 15 S/N: HF10-2   |          |                   |                   |          |
|  Recovery                                     | DM_RC    | Fri 12. Aug 11:19 | Fri 12. Aug 12:34 | 1.250    |
| Heat Probe Recovery  |          |                   |                   |          |
|  Deployment                                   | MB_DP    | Fri 12. Aug 12:34 | Fri 12. Aug 14:58 | 2.400    |
| Heat Probe Deployment  |          |                   |                   |          |
|  Deploy                                       | AC_SM_De | Fri 12. Aug 14:58 | Fri 12. Aug 20:38 | 5.667    |
| Heat Probe Op 16 S/N: HF11-1<br>Heat Probe Op 16 S/N: HF11-2<br>Heat Probe Op 16 S/N: HF11-3<br>Heat Probe Op 16 S/N: HF11-4 |          |                   |                   |          |
|  Recovery                                     | DM_RC    | Fri 12. Aug 20:38 | Fri 12. Aug 22:28 | 1.833    |
| Heat Probe Recovery  |          |                   |                   |          |
|  Deployment                                 | MB_DP    | Fri 12. Aug 22:28 | Fri 12. Aug 24:00 | 1.533    |
| Heat Probe Deployment  |          |                   |                   |          |

## Timing Day By Day (Marcus G Langseth, OBS\_Deployment)

Cascadia (MGL2208)

| 12-Aug                | Hours         | % Percent      |
|-----------------------|---------------|----------------|
| <b>Acquisition</b>    | <b>13.233</b> | <b>55.139</b>  |
| Swath Move            | 13.233        | 55.139         |
| Deploy                | 13.233        | 55.139         |
| <b>Demobilisation</b> | <b>4.367</b>  | <b>18.194</b>  |
| Recovery              | 4.367         | 18.194         |
| <b>Mobilisation</b>   | <b>6.400</b>  | <b>26.667</b>  |
| Deployment            | 6.400         | 26.667         |
| <b>Day's Total</b>    | <b>24.000</b> | <b>100.000</b> |

## Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category            | Hours          | % Percent     |
|---------------------|----------------|---------------|
| <b>Acquisition</b>  | <b>102.417</b> | <b>53.342</b> |
| Prime Line Change   | 4.167          | 2.170         |
| Production Prime    | 12.133         | 6.319         |
| Swath Move          | 86.117         | 44.852        |
| Deploy              | 86.117         | 44.852        |
| <b>Mobilisation</b> | <b>35.150</b>  | <b>18.307</b> |
| Deployment          | 31.717         | 16.519        |

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| Category               | Hours   | % Percent |
|------------------------|---------|-----------|
| Mob Offshore           | 3.433   | 1.788     |
| Non-Chargeable StandBy | 4.000   | 2.083     |
| Field Operations       | 4.000   | 2.083     |
| Demobilisation         | 19.517  | 10.165    |
| Recovery               | 19.517  | 10.165    |
| DownTime               | 3.817   | 1.988     |
| Source                 | 3.817   | 1.988     |
| Chargeable Standby     | 27.100  | 14.115    |
| Transit                | 27.100  | 14.115    |
| Total                  | 192.000 |           |

## Basic Project Details

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

## Production Totals (Chgd km by Shotpoint) - Full Fold

## Hi-Rez

Cascadia (MGL2208) (no data for period)

| Charged km | Day  | Week | Month  | Project |
|------------|------|------|--------|---------|
| Prime      | 0.00 | 0.00 | 101.23 | 101.23  |
| Combined   | 0.00 | 0.00 | 101.23 | 101.23  |

## Production Listing (Chgd km) - Prime: Full Fold, Infill: Unknown

## Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)

| Seq   | Line | FCSP | LCSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|------|------|------|-----------|------------|-----------|------------|-------------|
| Total |      |      |      |           | 0.00       |           |            |             |

## Production Totals (Accpt km by Shotpoint) - Full Fold

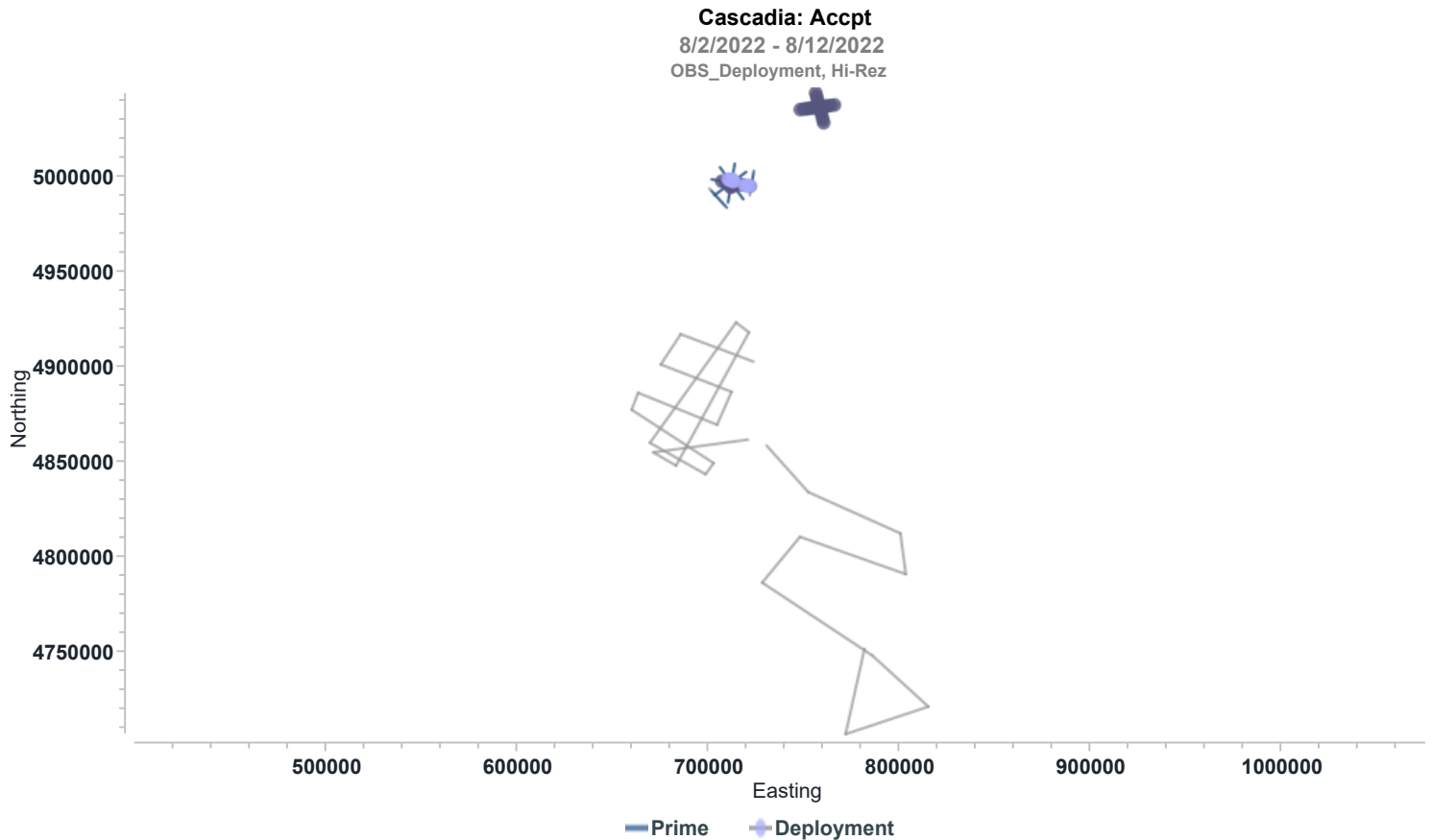
## Hi-Rez

Cascadia (MGL2208) (no data for period)

| Accepted km | Day  | Week | Month  | Project |
|-------------|------|------|--------|---------|
| Prime       | 0.00 | 0.00 | 107.40 | 107.40  |
| Combined    | 0.00 | 0.00 | 107.40 | 107.40  |

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## Daily Comment Summaries - Daily Comments On Status of Equipment

**Fri 12 Aug**

### Navigation:

No Major Issues to Report

### Information Technology (IT):

No Major Issues to Report

### Acquisition (MCS):

No Major Issues to Report

### Towing and Handling (Source):

No Major Issues to Report

### General Purpose Science:

No Major issues to Report.

### Heat Probe:

No Major issues to Report.

## Daily Comment Summaries - Personnel Onboard

**Fri 12 Aug**

### Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski Jr.- Contract Navigator  
Mark Walker - Contract Compressor Mech

### PSO Staff On-board the Langseth

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

### Science Party On-board the Langseth



Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU

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Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyritz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin Mcloud- Engineer - OSU

## HSE Events Diary (Marcus G Langseth, )

| Category  | Code       | Start | End   |
|---|------------|-------|-------|
| Daily Total Category  |            | Code  | Count |
|  Task, Hazard, Control | Re_Con_THC |       | 3     |
| 8/12/2022   |            |       |       |
| THC - Multiple items. Noise is mentioned several times.   |            |       |       |
|  Toolbox Meetings      | Mtgs_Tbox  |       | 6     |
| 8/12/2022   |            |       |       |
| TBT - Recovery  |            |       |       |
| 8/12/2022   |            |       |       |
| TBT - Deployment  |            |       |       |

## HSE Event Period Totals - Project (Marcus G Langseth)

| Category  | Code | Day | Week | Month | Project | Proj Hours | Man Hours |
|---|------|-----|------|-------|---------|------------|-----------|
|  Meetings              | Mtgs | 6   | 22   | 32    | 32      | 1.000      |           |
|  Start-up Meeting      | StUp | 0   | 0    | 1     | 1       | 1.000      |           |
|  Toolbox Meetings      | Tbox | 6   | 22   | 31    | 31      |            |           |
|  Reports               | Re   | 3   | 4    | 4     | 4       |            |           |
|  Contractor            | Con  | 3   | 4    | 4     | 4       |            |           |
|  Task, Hazard, Control | THC  | 3   | 4    | 4     | 4       |            |           |



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**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

## Daily Comment Summaries - Daily Summary

Sat 13 Aug

Early in the morning the Heat Flow operation on NUBBIN was wrapped up. The team acquired some very exciting data, the extra time taken has paid off in the end. After the heat probe was secured on deck the vessel transited south to Pseudofault. After a tool box talk in the main lab the tail buoy was soon in the water. Just under 2 hours for full deployment, a great job on the back deck! The gear was tested on the run in to line and SOL was 16:01 UTC ( 09:01 Local). Based on the initial data that the team was seeing the decision was made to extend the PF lines to the maximum amount allowed by the restraints of the box. PF version 3 lines were created on the fly and sent up to the Captain and crew for the navigation system. At the end of day the vessel had finished lines P01 and P02.

Ongoing maintenance and preparation:

Re-mounted two lights on main deck. These two make the third light that has fell. A THC card was entered.

Pressure washed the main deck to remove all of the slippery mud.

Cleaned up paravane deck and put out XBT Tube

Removed winch from port side aft main deck. Cleaned up to paint and rebuild.

## Daily Comment Summaries - Plan for Tomorrow

Sat 13 Aug

Continue with seismic Ops

## MGL 2208 Time Plan

Purple are actual numbers ( ALL TIMES ARE LOCAL)

| Action                | # of Stations | Heading | Nautical Miles | Duration  | Stat Date & Time | End Date & Time | Speed   |
|-----------------------|---------------|---------|----------------|-----------|------------------|-----------------|---------|
| 3 P03                 |               | 111.1°  |                |           | 8/13/2022 18:33  | 8/14/2022 0:02  |         |
| 4 P04                 |               | 203.5°  |                |           | 8/14/2022 1:23   | 8/14/2022 4:30  | 5.00 kt |
| 5 P05                 |               | 292.1°  |                |           | 8/14/2022 5:54   | 8/14/2022 12:41 | 5.00 kt |
| 6 P06                 |               | 201.1°  |                |           | 8/14/2022 14:04  | 8/14/2022 15:08 | 5.00 kt |
| 7 P07                 |               | 123.2°  |                |           | 8/14/2022 16:30  | 8/15/2022 0:11  | 5.00 kt |
| 8 P08                 |               | 358.3°  |                |           | 8/15/2022 1:44   | 8/15/2022 8:02  | 5.00 kt |
| 9 P09                 |               | 270.4°  |                |           | 8/15/2022 9:24   | 8/15/2022 10:16 | 5.00 kt |
| 10 P10                |               | 358.5°  |                |           | 8/15/2022 11:37  | 8/15/2022 17:43 | 5.00 kt |
| Recover Gear          |               |         |                | 3:00:00   | 8/15/2022 17:43  | 8/15/2022 20:43 |         |
| Transit to DIEBOLD    |               |         |                | 1:00:00   | 8/15/2022 20:43  | 8/15/2022 21:43 | ~8.5    |
| DIEBOLD Heat Flow     | 32            |         |                | 64:00:00  | 8/15/2022 21:43  | 8/18/2022 13:43 |         |
| Transit to PSEUDFAULT |               |         |                | 2:00:00   | 8/18/2022 13:43  | 8/18/2022 15:43 | ~8.5    |
| PSEUDFAULT Heat Flow  | 70            |         |                | 140:00:00 | 8/18/2022 15:43  | 8/24/2022 11:43 |         |
| Transit to Newport    |               |         | 105            | 12:30     | 8/24/2022 11:43  | 8/25/2022 0:13  | 8.5     |

## Timing Diary (Marcus G Langseth, OBS\_Deployment, Hi-Rez)











| Category   | Code     | Start             | End               | Duration |
|--|----------|-------------------|-------------------|----------|
| Deploy   | AC_SM_De | Sat 13. Aug 00:00 | Sat 13. Aug 01:47 | 1.783    |
| Heat Probe Op 17 S/N: HF12-1<br>Heat Probe Op 17 S/N: HF12-2 |          |                   |                   |          |
| Recovery   | DM_RC    | Sat 13. Aug 01:47 | Sat 13. Aug 02:55 | 1.133    |
| Heat Probe Recovery  |          |                   |                   |          |



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| Category   | Code     | Start             | End               | Duration |
|--|----------|-------------------|-------------------|----------|
|  Deployment   | MB_DP    | Sat 13. Aug 02:55 | Sat 13. Aug 05:18 | 2.383    |
| Heat Probe Deployment  |          |                   |                   |          |
|  Deploy   | AC_SM_De | Sat 13. Aug 05:18 | Sat 13. Aug 07:38 | 2.333    |
| Heat Probe Op 18 S/N: HF13-1<br>Heat Probe Op 18 S/N: HF13-2<br>Heat Probe Op 18 S/N: HF13-3   |          |                   |                   |          |
|  Recovery   | DM_RC    | Sat 13. Aug 07:38 | Sat 13. Aug 09:15 | 1.617    |
| Demobilising offshore, recovering outboard equipment.  |          |                   |                   |          |
|  Transit  | SB_TRT   | Sat 13. Aug 09:15 | Sat 13. Aug 13:07 | 3.867    |
| Transit to Pseudofault   |          |                   |                   |          |
|  Deployment   | MB_DP    | Sat 13. Aug 13:07 | Sat 13. Aug 16:01 | 2.900    |
| Deploy Streamer, Guns, PAM and Maggy   |          |                   |                   |          |
|  Production Prime   | AC_PP    | Sat 13. Aug 16:01 | Sat 13. Aug 22:12 | 6.183    |
| Seq: 8<br>SOL Seq 8 Line:MGL2208008P01 Preplot:P01 Block:Cascadia FGSP:920 FCSP:1001 Hdg:262.3° Prime<br>EOL Seq 8 Line:MGL2208008P01 Preplot:P01 Block:Cascadia LGSP:3260 LCSP:3260 Complete  |          |                   |                   |          |
|  Prime Line Change  | AC_PLC   | Sat 13. Aug 22:12 | Sat 13. Aug 22:37 | 0.417    |
| Seq: 8<br>Line: 008P01<br>Nominal Prime line change.   |          |                   |                   |          |
|  Production Prime   | AC_PP    | Sat 13. Aug 22:37 | Sat 13. Aug 24:00 | 1.383    |
| Seq: 9<br>SOL Seq 9 Line:MGL2208009P02 Preplot:P02 Block:Cascadia FGSP:1059 FCSP:1059 Hdg:120.4° Prime<br>MSP Seq 9 Line:MGL2208009P02 Preplot:P02 Block:Cascadia LGSP:1620 LCSP:1620 Midnight |          |                   |                   |          |

## Timing Day By Day (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| 13-Aug                    | Hours         | % Percent      |
|---------------------------|---------------|----------------|
| <b>Acquisition</b>        | <b>12.100</b> | <b>50.417</b>  |
| Prime Line Change         | 0.417         | 1.736          |
| Production Prime          | 7.567         | 31.528         |
| Swath Move                | 4.117         | 17.153         |
| Deploy                    | 4.117         | 17.153         |
| <b>Chargeable Standby</b> | <b>3.867</b>  | <b>16.111</b>  |
| Transit                   | 3.867         | 16.111         |
| <b>Demobilisation</b>     | <b>2.750</b>  | <b>11.458</b>  |
| Recovery                  | 2.750         | 11.458         |
| <b>Mobilisation</b>       | <b>5.283</b>  | <b>22.014</b>  |
| Deployment                | 5.283         | 22.014         |
| <b>Day's Total</b>        | <b>24.000</b> | <b>100.000</b> |

## Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category           | Hours          | % Percent     |
|--------------------|----------------|---------------|
| <b>Acquisition</b> | <b>114.517</b> | <b>53.017</b> |
| Prime Line Change  | 4.583          | 2.122         |
| Production Prime   | 19.700         | 9.120         |
| Swath Move         | 90.233         | 41.775        |
| Deploy             | 90.233         | 41.775        |

| Category               | Hours   | % Percent |
|------------------------|---------|-----------|
| Mobilisation           | 40.433  | 18.719    |
| Deployment             | 37.000  | 17.130    |
| Mob Offshore           | 3.433   | 1.590     |
| Non-Chargeable StandBy | 4.000   | 1.852     |
| Field Operations       | 4.000   | 1.852     |
| Demobilisation         | 22.267  | 10.309    |
| Recovery               | 22.267  | 10.309    |
| DownTime               | 3.817   | 1.767     |
| Source                 | 3.817   | 1.767     |
| Chargeable Standby     | 30.967  | 14.336    |
| Transit                | 30.967  | 14.336    |
| Total                  | 216.000 |           |

Basic Project Details

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

Production Totals (Chgd km by Shotpoint) - Full Fold

Hi-Rez

Cascadia (MGL2208)

| Charged km | Day   | Week  | Month  | Project |
|------------|-------|-------|--------|---------|
| Prime      | 70.55 | 70.55 | 171.78 | 171.78  |
| Combined   | 70.55 | 70.55 | 171.78 | 171.78  |

Production Listing (Chgd km by Shotpoint) - Full Fold

Hi-Rez, OBS\_Deployment

Cascadia (MGL2208)

| Seq   | Line   | Heading | FCSP | LCSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|--------|---------|------|------|-----------|------------|-----------|------------|-------------|
| 8     | 008P01 | 290.7   | 1001 | 3260 | Prime     | 56.50      | 5.108     | Complete   | Complete    |
| 9     | 009P02 | 187.5   | 1059 | 1620 | Prime     | 14.05      | 5.474     | Midnight   | Part        |
| Total |        |         |      |      |           | 70.55      |           |            |             |

Production Totals (Acpt km by Shotpoint) - Full Fold

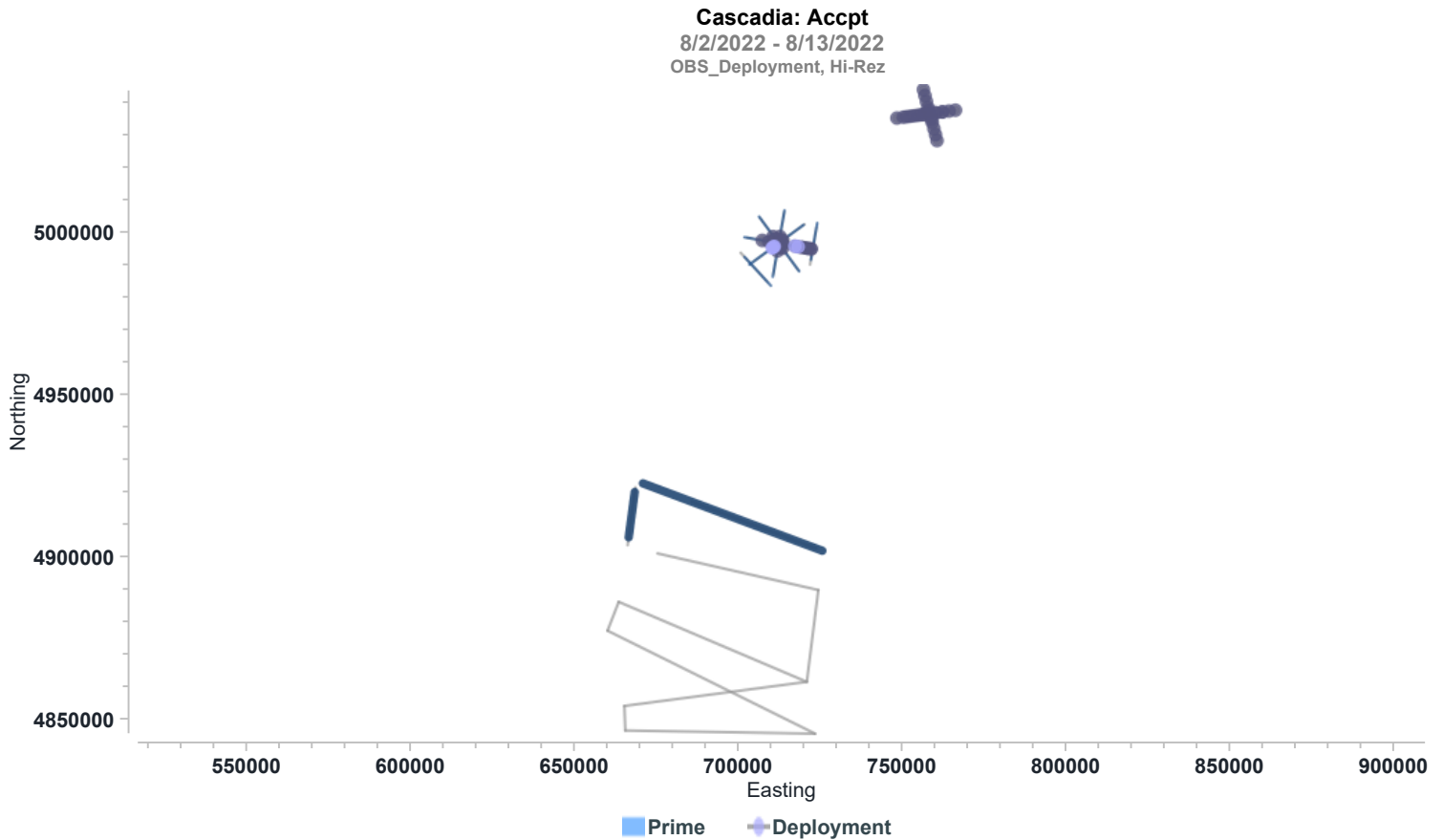
Hi-Rez

Cascadia (MGL2208)

| Accepted km | Day   | Week  | Month  | Project |
|-------------|-------|-------|--------|---------|
| Prime       | 72.58 | 72.58 | 179.98 | 179.98  |
| Combined    | 72.58 | 72.58 | 179.98 | 179.98  |

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## Daily Comment Summaries - Daily Comments On Status of Equipment

Sat 13 Aug

### Navigation:

No Major Issues to Report

### Information Technology (IT):

No Major Issues to Report

### Acquisition (MCS):

No Major Issues to Report

### Towing and Handling (Source):

No Major Issues to Report

### General Purpose Science:

No Major issues to Report.

### Heat Probe:

No Major issues to Report.

## Daily Comment Summaries - Personnel Onboard

Sat 13 Aug

### Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski Jr.- Contract Navigator  
Mark Walker - Contract Compressor Mech

### PSO Staff On-board the Langseth

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

### Science Party On-board the Langseth



Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU

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Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyritz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin Mcloud- Engineer - OSU

## HSE Events Diary (Marcus G Langseth, )

| Category  | Code       | Start | End   |
|---|------------|-------|-------|
| Daily Total Category  |            | Code  | Count |
|  Task, Hazard, Control | Re_Con_THC |       | 3     |
| 8/13/2022   |            |       |       |
| THC x 3   |            |       |       |
|  Toolbox Meetings      | Mtgs_Tbox  |       | 2     |
| 8/13/2022   |            |       |       |
| TBT - Heat Flow Recovery  |            |       |       |
| 8/13/2022   |            |       |       |
| TBT - Streamer Deployment   |            |       |       |

## HSE Event Period Totals - Project (Marcus G Langseth)

| Category  | Code | Day | Week | Month | Project | Proj Hours | Man Hours |
|---|------|-----|------|-------|---------|------------|-----------|
|  Meetings              | Mtgs | 2   | 24   | 34    | 34      | 1.000      |           |
|  Start-up Meeting      | StUp | 0   | 0    | 1     | 1       | 1.000      |           |
|  Toolbox Meetings      | Tbox | 2   | 24   | 33    | 33      |            |           |
|  Reports               | Re   | 3   | 7    | 7     | 7       |            |           |
|  Contractor            | Con  | 3   | 7    | 7     | 7       |            |           |
|  Task, Hazard, Control | THC  | 3   | 7    | 7     | 7       |            |           |

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**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

## Daily Comment Summaries - Daily Summary

Sun 14 Aug

A good day of seismic Acquisition. The vessel was just finishing up Seq 009, line P02 at the start of the day. The science team is settling in to the online desk, updating logs, doing XBTs, sharpening pencils and filling out the Elog. They are coming to understand the old doodlebugger saying, "Boring Seismic is Good Seismic". The onshore team has been hard at work providing support and processing lines. There are quite a few eager team members ready to start merging data and picking the Heat Probe stations for our pseudofault heat flow campaign. The PSO team did a great job today spotting a fastly approaching fog bank, they radioed down and we were able to get ramped up before visibility was 100-200 meters. This would have been a significant delay.

Thanksgiving came early, August 14th to be precise. The galley out did themselves tonight; Turkey, Stuffing, Mashed Potatoes, Green Beans, Gravy, and Cranberry Sauce. It was a great meal, as the talk of naps in the main lab can attest to....

The multibeam displayed some CPU over heating errors.

- The fans are on high
- The engineers looked at the AC, nothing else can be done right now.
- Door, top vent and back panel are off
- Cage is cleared of the stacked cabin AC units
- Filters have been cleaned

At end of day the vessel was on Seq 013, Line P07.

Ongoing maintenance and preparation:

Painted utility winch from port side aft that was removed yesterday. Changed out oil seals in the drum.

Removed winch from Port slipway.

Put winch from port side aft onto port slipway. Installed new rope and tested

Removed starboard slipway winch, changed oil seals, re-mounted and tested. Ensured both winches, port and starboard, were full of gear oil

Cleaned and painted winch that was removed from port slipway. Changed O-ring in brake and oil seals in the drum.

## Daily Comment Summaries - Plan for Tomorrow

Sun 14 Aug

Continue with Seismic ops. Will recover gear around 13:00 local if all goes to plan. The vessel will then transit to Diebold to start heat flow ops.






# MGL 2208 Time Plan





Purple are actual numbers ( ALL TIMES ARE LOCAL)

| Action                        | # of Stations | Heading | Nautical Miles | Duration  | Stat Date & Time            | End Data & Time | Speed   |
|-------------------------------|---------------|---------|----------------|-----------|-----------------------------|-----------------|---------|
| Margin HF - East West         | 5             |         |                |           | 8/7/2022 14:27              | 8/8/2022 0:59   |         |
| Margin Transit to North Line  |               |         |                |           | 8/8/2022 0:59               | 8/8/2022 1:06   |         |
| Margin HF - North South       | 11            |         |                |           | 8/8/2022 1:06               | 8/9/2022 0:30   |         |
| Transit to Newport            |               |         |                |           | 8/9/2022 0:30               | 8/9/2022 10:30  |         |
| Crew Change and Supplies      |               |         |                |           | 8/9/2022 10:30              | 8/9/2022 14:00  |         |
| Transit to Nubbin             |               |         |                |           | 8/9/2022 14:00              | 8/10/2022 0:04  |         |
| NUBBIN Heat Flow ( 5 Remain ) | 5             |         |                |           | 8/12/2022 16:19             | 8/13/2022 2:15  |         |
| Transit to PF                 |               |         |                |           | 8/13/2022 2:15              | 8/13/2022 6:07  |         |
| Deploy Gear                   |               |         |                |           | 8/13/2022 6:07              | 8/13/2022 7:57  |         |
| Acquire Seismic Lines - PF    |               |         |                |           |                             |                 |         |
| 1 P01                         |               | 290.7°  |                |           | 8/13/2022 9:01              | 8/13/2022 15:16 |         |
| 2 P02                         |               | 213.2°  |                |           | 8/13/2022 15:41             | 8/13/2022 17:05 |         |
| 3 P03                         |               | 111.1°  |                |           | 8/13/2022 17:24             | 8/13/2022 23:59 |         |
| 4 P04                         |               | 203.5°  |                |           | 8/14/2022 0:37              | 8/14/2022 3:17  |         |
| 5 P05                         |               | 292.1°  |                |           | 8/14/2022 3:45              | 8/14/2022 11:01 |         |
| 6 P06                         |               |         |                |           | Did not Acquire - Turn Line |                 |         |
| 7 P07                         |               | 123.2°  |                |           | 8/14/2022 11:59             | 8/14/2022 19:55 | 5.00 kt |
| 8 P08                         |               | 358.3°  |                |           | 8/14/2022 21:28             | 8/15/2022 3:46  | 5.00 kt |
| 9 P09                         |               | 270.4°  |                |           | 8/15/2022 5:08              | 8/15/2022 6:00  | 5.00 kt |
| 10 P10                        |               | 358.5°  |                |           | 8/15/2022 7:21              | 8/15/2022 13:27 | 5.00 kt |
|                               |               |         |                |           |                             |                 |         |
| Recover Gear                  |               |         |                | 3:00:00   | 8/15/2022 13:27             | 8/15/2022 16:27 |         |
| Transit to DIEBOLD            |               |         |                | 1:00:00   | 8/15/2022 16:27             | 8/15/2022 17:27 | ~8.5    |
| DIEBOLD Heat Flow             | 32            |         |                | 64:00:00  | 8/15/2022 17:27             | 8/18/2022 9:27  |         |
| Transit to PSEUDFAULT         |               |         |                | 2:00:00   | 8/18/2022 9:27              | 8/18/2022 11:27 | ~8.5    |
| PSEUDFAULT Heat Flow          | 70            |         |                | 140:00:00 | 8/18/2022 11:27             | 8/24/2022 7:27  |         |
| Transit to Newport            |               |         | 105            | 12:30     | 8/24/2022 7:27              | 8/24/2022 19:57 | 8.5     |

The Transit to Newport Date/Time does not take in to consideration any seismic contingency lines. Arrival to port will be the 26th time TBD.

### Timing Diary (Marcus G Langseth, Hi-Rez)

| Category  | Code   | Start             | End               | Duration |
|---|--------|-------------------|-------------------|----------|
|  Production Prime  | AC_PP  | Sun 14. Aug 00:00 | Sun 14. Aug 00:01 | 0.017    |
| Seq: 9<br>SOL Seq 9 Line:MGL2208009P02 Preplot:P02 Block:Cascadia FGSP:1621 FCSP:1621 Hdg:187.5° Prime<br>EOL Seq 9 Line:MGL2208009P02 Preplot:P02 Block:Cascadia LGSP:1623 LCSP:1623 Complete    |        |                   |                   |          |
|  Prime Line Change   | AC_PLC | Sun 14. Aug 00:01 | Sun 14. Aug 00:22 | 0.350    |
| Seq: 9<br>Line: 009P02<br>Nominal Prime line change.  |        |                   |                   |          |
|  Production Prime  | AC_PP  | Sun 14. Aug 00:22 | Sun 14. Aug 06:51 | 6.483    |
| Seq: 10<br>SOL Seq 10 Line:MGL2208010P03 Preplot:P03 Block:Cascadia FGSP:571 FCSP:571 Hdg:102.9° Prime<br>EOL Seq 10 Line:MGL2208010P03 Preplot:P03 Block:Cascadia LGSP:3045 LCSP:3031 Complete   |        |                   |                   |          |
|  Prime Line Change   | AC_PLC | Sun 14. Aug 06:51 | Sun 14. Aug 07:14 | 0.383    |
| Seq: 10<br>Line: 010P03<br>Nominal Prime line change.   |        |                   |                   |          |
|  Production Prime  | AC_PP  | Sun 14. Aug 07:14 | Sun 14. Aug 10:17 | 3.050    |
| Seq: 11<br>SOL Seq 11 Line:MGL2208011P04 Preplot:P04 Block:Cascadia FGSP:1021 FCSP:1021 Hdg:187.1° Prime<br>EOL Seq 11 Line:MGL2208011P04 Preplot:P04 Block:Cascadia LGSP:2018 LCSP:2018 Complete |        |                   |                   |          |

| Category  | Code   | Start             | End               | Duration |
|---|--------|-------------------|-------------------|----------|
|  Prime Line Change   | AC_PLC | Sun 14. Aug 10:17 | Sun 14. Aug 10:45 | 0.467    |
| Seq: 11<br>Line: 011P04<br>Nominal Prime line change.   |        |                   |                   |          |
|  Production Prime  | AC_PP  | Sun 14. Aug 10:45 | Sun 14. Aug 18:01 | 7.267    |
| Seq: 12<br>SOL Seq 12 Line:MGL2208012P05 Preplot:P05 Block:Cascadia FGSP:1022 FCSP:1022 Hdg:293.2° Prime<br>EOL Seq 12 Line:MGL2208012P05 Preplot:P05 Block:Cascadia LGSP:3465 LCSP:3465 Complete |        |                   |                   |          |
|  Prime Line Change   | AC_PLC | Sun 14. Aug 18:01 | Sun 14. Aug 18:59 | 0.967    |
| Seq: 12<br>Line: 012P05<br>Nominal Prime line change.   |        |                   |                   |          |
|  Production Prime  | AC_PP  | Sun 14. Aug 18:59 | Sun 14. Aug 24:00 | 5.017    |
| Seq: 13<br>SOL Seq 13 Line:MGL2208013P07 Preplot:P07 Block:Cascadia FGSP:1030 FCSP:1030 Hdg:116.6° Prime<br>MSP Seq 13 Line:MGL2208013P07 Preplot:P07 Block:Cascadia LGSP:3032 LCSP:3032 Midnight |        |                   |                   |          |

Timing Day By Day (Marcus G Langseth, Hi-Rez)

Cascadia (MGL2208)

| 14-Aug             | Hours         | % Percent      |
|--------------------|---------------|----------------|
| <b>Acquisition</b> | <b>24.000</b> | <b>100.000</b> |
| Prime Line Change  | 2.167         | 9.028          |
| Production Prime   | 21.833        | 90.972         |
| <b>Day's Total</b> | <b>24.000</b> | <b>100.000</b> |

Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category                      | Hours          | % Percent     |
|-------------------------------|----------------|---------------|
| <b>Acquisition</b>            | <b>138.517</b> | <b>57.715</b> |
| Prime Line Change             | 6.750          | 2.813         |
| Production Prime              | 41.533         | 17.306        |
| Swath Move                    | 90.233         | 37.597        |
| Deploy                        | 90.233         | 37.597        |
| <b>Mobilisation</b>           | <b>40.433</b>  | <b>16.847</b> |
| Deployment                    | 37.000         | 15.417        |
| Mob Offshore                  | 3.433          | 1.431         |
| <b>Non-Chargeable StandBy</b> | <b>4.000</b>   | <b>1.667</b>  |
| Field Operations              | 4.000          | 1.667         |
| <b>Demobilisation</b>         | <b>22.267</b>  | <b>9.278</b>  |
| Recovery                      | 22.267         | 9.278         |
| <b>DownTime</b>               | <b>3.817</b>   | <b>1.590</b>  |
| Source                        | 3.817          | 1.590         |
| <b>Chargeable Standby</b>     | <b>30.967</b>  | <b>12.903</b> |
| Transit                       | 30.967         | 12.903        |
| <b>Total</b>                  | <b>240.000</b> |               |

Basic Project Details

| Hi-Rez                 |
|------------------------|
| <b>General Details</b> |

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| Hi-Rez         |         |                  |        |                     |        |
|----------------|---------|------------------|--------|---------------------|--------|
| Record length: | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:    | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details  |         |                  |        |                     |        |
| No of Cables:  | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:    | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

**Production Totals** (Chgd km by Shotpoint) - Full Fold**Hi-Rez**

Cascadia (MGL2208)

| Charged km      | Day           | Week          | Month         | Project       |
|-----------------|---------------|---------------|---------------|---------------|
| Prime           | 197.73        | 268.28        | 369.50        | 369.50        |
| <b>Combined</b> | <b>197.73</b> | <b>268.28</b> | <b>369.50</b> | <b>369.50</b> |

**Production Listing** (Chgd km by Shotpoint) - Full Fold**Hi-Rez, OBS\_Deployment**

Cascadia (MGL2208)

| Seq          | Line   | Heading | FCSP | LCSP | Prod Type | Production    | Ave Knots | Seq Status | Line Status |
|--------------|--------|---------|------|------|-----------|---------------|-----------|------------|-------------|
| 9            | 009P02 | 187.5   | 1621 | 1623 | Prime     | 0.08          | 5.438     | Complete   | Complete    |
| 10           | 010P03 | 102.9   | 571  | 3031 | Prime     | 61.53         | 5.151     | Complete   | Complete    |
| 11           | 011P04 | 183.8   | 1021 | 2018 | Prime     | 24.95         | 4.413     | Complete   | Complete    |
| 12           | 012P05 | 293.2   | 1022 | 3465 | Prime     | 61.10         | 4.538     | Complete   | Complete    |
| 13           | 013P07 | 116.6   | 1030 | 3032 | Prime     | 50.08         | 5.387     | Midnight   | Part        |
| <b>Total</b> |        |         |      |      |           | <b>197.73</b> |           |            |             |

**Production Totals** (Acpt km by Shotpoint) - Full Fold**Hi-Rez**

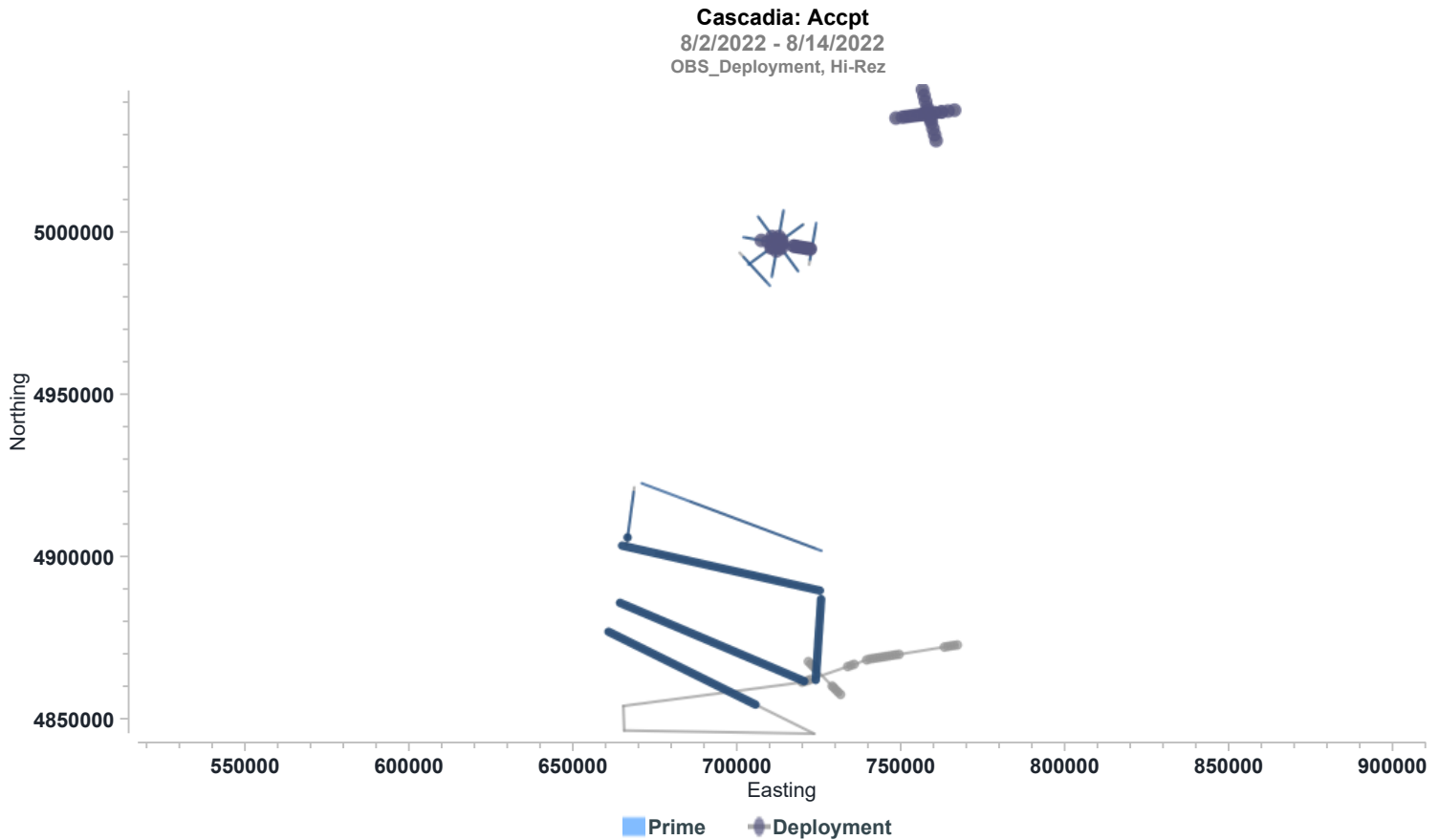
Cascadia (MGL2208)

| Accepted km     | Day           | Week          | Month         | Project       |
|-----------------|---------------|---------------|---------------|---------------|
| Prime           | 198.07        | 270.65        | 378.05        | 378.05        |
| <b>Combined</b> | <b>198.07</b> | <b>270.65</b> | <b>378.05</b> | <b>378.05</b> |



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## Daily Comment Summaries - Daily Comments On Status of Equipment

Sun 14 Aug

### Navigation:

No Major Issues to Report

### Information Technology (IT):

No Major Issues to Report

### Acquisition (MCS):

No Major Issues to Report

### Towing and Handling (Source):

No Major Issues to Report

### General Purpose Science:

Multibeam over heating error

### Heat Probe:

No Major issues to Report.

## Daily Comment Summaries - Personnel Onboard

Sun 14 Aug

### Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski Jr.- Contract Navigator  
Mark Walker - Contract Compressor Mech

### PSO Staff On-board the Langseth

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

### Science Party On-board the Langseth


Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU

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Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyrirtz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin Mcloud- Engineer - OSU

## HSE Events Diary (Marcus G Langseth, )

| Category  | Code       | Start | End   |
|---|------------|-------|-------|
| Daily Total Category  |            | Code  | Count |
|  Task, Hazard, Control | Re_Con_THC |       | 1     |
| 8/14/2022   |            |       |       |
| THC - Ladder with loose bracing on the main deck.   |            |       |       |

## HSE Event Period Totals - Project (Marcus G Langseth)

| Category   | Code | Day | Week | Month | Project | Proj Hours | Man Hours |
|--|------|-----|------|-------|---------|------------|-----------|
|  Meetings                 | Mtgs | 0   | 24   | 34    | 34      | 1.000      |           |
|  Start-up Meeting         | StUp | 0   | 0    | 1     | 1       | 1.000      |           |
|  Toolbox Meetings         | Tbox | 0   | 24   | 33    | 33      |            |           |
|  Reports                 | Re   | 1   | 8    | 8     | 8       |            |           |
|  Contractor             | Con  | 1   | 8    | 8     | 8       |            |           |
|  Task, Hazard, Control | THC  | 1   | 8    | 8     | 8       |            |           |

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**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

**Daily Comment Summaries - Daily Summary****Mon 15 Aug**

A day of transition. The day started with the vessel acquiring seismic data on Seq 13, Line P07. The vessel finished Seq 16, Line P10 by Lunch time local and transited to the eastern end of the Diebold heat flow working area. The vessel deployed the heat probe and within hours the vessel was back in to heat probe mode. At the end of day, 2 stations were already completed on Diebold.

The engineers worked on the AC units in the dry lab. There is more airflow now. Since arriving on Diebold the multibeam has not been giving any more over heating alarms.

Ongoing maintenance and preparation:  
Ongoing repairs, inventories, cleaning and tidying.

**Daily Comment Summaries - Plan for Tomorrow****Mon 15 Aug**

Continue with Heat Flow ops. The vessel will work from Station 28 moving west to station 54. There will be multiple recoveries/deployments along the way.

**MGL 2208 Time Plan**

Purple are actual numbers ( ALL TIMES ARE LOCAL)












| Action                | # of Stations | Heading | Nautical Miles | Duration  | Stat Date & Time | End Date & Time | Speed |
|-----------------------|---------------|---------|----------------|-----------|------------------|-----------------|-------|
| Recover Gear          |               |         |                |           | 8/15/2022 10:17  | 8/15/2022 12:02 |       |
| Transit to DIEBOLD    |               |         |                |           | 8/15/2022 12:02  | 8/15/2022 14:02 | ~8.5  |
| DIEBOLD Heat Flow     | 32            |         |                | 64:00:00  | 8/15/2022 14:02  | 8/18/2022 6:02  |       |
| Transit to PSEUDFAULT |               |         |                | 2:00:00   | 8/18/2022 6:02   | 8/18/2022 8:02  | ~8.5  |
| PSEUDFAULT Heat Flow  | 70            |         |                | 140:00:00 | 8/18/2022 8:02   | 8/24/2022 4:02  |       |
| Transit to Newport    |               |         | 105            | 12:30     | 8/24/2022 4:02   | 8/24/2022 16:32 | 8.5   |

The Transit to Newport Date/Time does not take in to consideration any seismic contingency lines. Arrival to port will be the 26th time TBD.

**Timing Diary (Marcus G Langseth, OBS\_Deployment, Hi-Rez)**

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| Category  | Code     | Start             | End               | Duration |
|---|----------|-------------------|-------------------|----------|
|  Production Prime  | AC_PP    | Mon 15. Aug 00:00 | Mon 15. Aug 02:08 | 2.133    |
| Seq: 13<br>SOL Seq 13 Line:MGL2208013P07 Preplot:P07 Block:Cascadia FGSP:3033 FCSP:3033 Hdg:116.6° Prime<br>EOL Seq 13 Line:MGL2208013P07 Preplot:P07 Block:Cascadia LGSP:3913 LCSP:3832 Complete |          |                   |                   |          |
|  Prime Line Change   | AC_PLC   | Mon 15. Aug 02:08 | Mon 15. Aug 03:11 | 1.050    |
| Seq: 13<br>Line: 013P07<br>Nominal Prime line change.   |          |                   |                   |          |
|  Production Prime  | AC_PP    | Mon 15. Aug 03:11 | Mon 15. Aug 10:09 | 6.967    |
| Seq: 14<br>SOL Seq 14 Line:MGL2208014P08 Preplot:P08 Block:Cascadia FGSP:844 FCSP:1001 Hdg:271° Prime<br>EOL Seq 14 Line:MGL2208014P08 Preplot:P08 Block:Cascadia LGSP:3334 LCSP:3316 Complete    |          |                   |                   |          |
|  Prime Line Change   | AC_PLC   | Mon 15. Aug 10:09 | Mon 15. Aug 10:35 | 0.433    |
| Seq: 14<br>Line: 014P08<br>Nominal Prime line change.   |          |                   |                   |          |
|  Production Prime  | AC_PP    | Mon 15. Aug 10:35 | Mon 15. Aug 10:57 | 0.367    |
| Seq: 15<br>SOL Seq 15 Line:MGL2208015P09 Preplot:P09 Block:Cascadia FGSP:1051 FCSP:1051 Hdg:353.4° Prime<br>EOL Seq 15 Line:MGL2208015P09 Preplot:P09 Block:Cascadia LGSP:1181 LCSP:1181 Complete |          |                   |                   |          |
|  Prime Line Change   | AC_PLC   | Mon 15. Aug 10:57 | Mon 15. Aug 11:16 | 0.317    |
| Seq: 15<br>Line: 015P09<br>Nominal Prime line change.   |          |                   |                   |          |
|  Production Prime  | AC_PP    | Mon 15. Aug 11:16 | Mon 15. Aug 17:12 | 5.933    |
| Seq: 16<br>SOL Seq 16 Line:MGL2208016P10 Preplot:P10 Block:Cascadia FGSP:1002 FCSP:1002 Hdg:82.4° Prime<br>EOL Seq 16 Line:MGL2208016P10 Preplot:P10 Block:Cascadia LGSP:3263 LCSP:3263 Complete  |          |                   |                   |          |
|  Recovery  | DM_RC    | Mon 15. Aug 17:12 | Mon 15. Aug 19:02 | 1.833    |
| Recover; PAM, Maggy, Guns and Streamer  |          |                   |                   |          |
|  Transit   | SB_TRT   | Mon 15. Aug 19:02 | Mon 15. Aug 21:11 | 2.150    |
| Transit to Diebold heat Flow Station 28   |          |                   |                   |          |
|  Deployment  | MB_DP    | Mon 15. Aug 21:11 | Mon 15. Aug 22:29 | 1.300    |
| Heat Probe Deployment   |          |                   |                   |          |
|  Deploy  | AC_SM_De | Mon 15. Aug 22:29 | Mon 15. Aug 24:00 | 1.517    |
| Heat Flow Op 19 S/N: HF14-1<br>Heat Flow Op 19 S/N: HF14-2  |          |                   |                   |          |

## Timing Day By Day (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| 15-Aug                    | Hours         | % Percent     |
|---------------------------|---------------|---------------|
| <b>Acquisition</b>        | <b>18.717</b> | <b>77.986</b> |
| Prime Line Change         | 1.800         | 7.500         |
| Production Prime          | 15.400        | 64.167        |
| Swath Move                | 1.517         | 6.319         |
| Deploy                    | 1.517         | 6.319         |
| <b>Chargeable Standby</b> | <b>2.150</b>  | <b>8.958</b>  |
| Transit                   | 2.150         | 8.958         |
| <b>Demobilisation</b>     | <b>1.833</b>  | <b>7.639</b>  |
| Recovery                  | 1.833         | 7.639         |

| 15-Aug       | Hours  | % Percent |
|--------------|--------|-----------|
| Mobilisation | 1.300  | 5.417     |
| Deployment   | 1.300  | 5.417     |
| Day's Total  | 24.000 | 100.000   |

Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category               | Hours   | % Percent |
|------------------------|---------|-----------|
| Acquisition            | 157.233 | 59.558    |
| Prime Line Change      | 8.550   | 3.239     |
| Production Prime       | 56.933  | 21.566    |
| Swath Move             | 91.750  | 34.754    |
| Deploy                 | 91.750  | 34.754    |
| Mobilisation           | 41.733  | 15.808    |
| Deployment             | 38.300  | 14.508    |
| Mob Offshore           | 3.433   | 1.301     |
| Non-Chargeable StandBy | 4.000   | 1.515     |
| Field Operations       | 4.000   | 1.515     |
| Demobilisation         | 24.100  | 9.129     |
| Recovery               | 24.100  | 9.129     |
| DownTime               | 3.817   | 1.446     |
| Source                 | 3.817   | 1.446     |
| Chargeable Standby     | 33.117  | 12.544    |
| Transit                | 33.117  | 12.544    |
| Total                  | 264.000 |           |

Basic Project Details

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

Production Totals (Chgd km by Shotpoint) - Full Fold

Hi-Rez

Cascadia (MGL2208)

| Charged km | Day    | Week   | Month  | Project |
|------------|--------|--------|--------|---------|
| Prime      | 137.73 | 137.73 | 507.23 | 507.23  |
| Combined   | 137.73 | 137.73 | 507.23 | 507.23  |

Production Listing (Chgd km by Shotpoint) - Full Fold

Hi-Rez, OBS\_Deployment

Cascadia (MGL2208)

| Seq | Line   | Heading | FCSP | LCSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-----|--------|---------|------|------|-----------|------------|-----------|------------|-------------|
| 13  | 013P07 | 116.6   | 3033 | 3832 | Prime     | 20.00      | 5.443     | Complete   | Complete    |
| 14  | 014P08 | 271.0   | 1001 | 3316 | Prime     | 57.90      | 4.825     | Complete   | Complete    |

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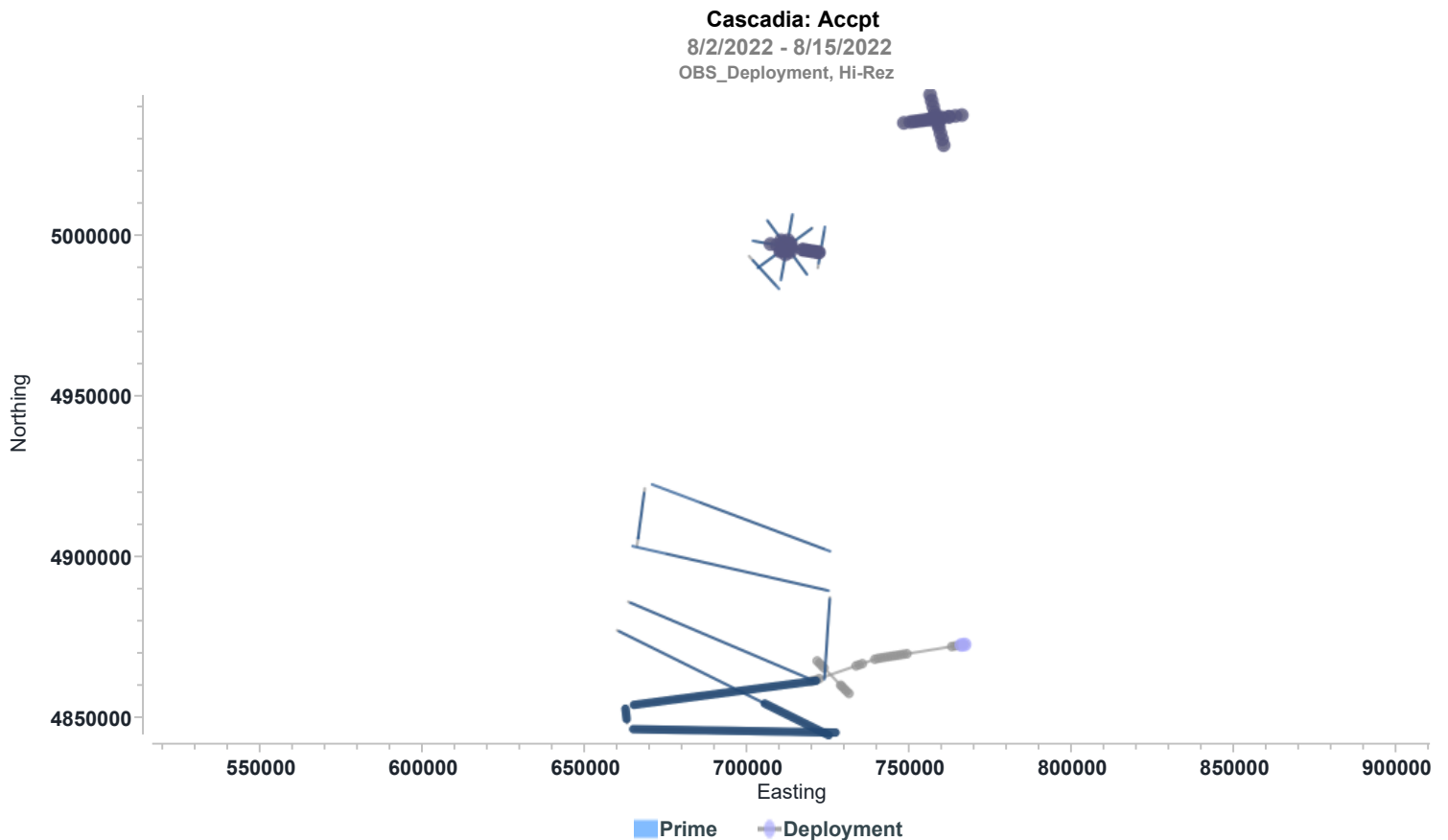
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| Seq   | Line   | Heading | FCSP | LCSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|--------|---------|------|------|-----------|------------|-----------|------------|-------------|
| 15    | 015P09 | 353.4   | 1051 | 1181 | Prime     | 3.28       | 4.786     | Complete   | Complete    |
| 16    | 016P10 | 82.4    | 1002 | 3263 | Prime     | 56.55      | 5.144     | Complete   | Complete    |
| Total |        |         |      |      |           | 137.73     |           |            |             |

**Production Totals** (Accept km by Shotpoint) - Full Fold**Hi-Rez**

Cascadia (MGL2208)

| Accepted km | Day    | Week   | Month  | Project |
|-------------|--------|--------|--------|---------|
| Prime       | 144.13 | 144.13 | 522.17 | 522.17  |
| Combined    | 144.13 | 144.13 | 522.17 | 522.17  |

**Daily Comment Summaries - Daily Comments On Status of Equipment****Mon 15 Aug****Navigation:**

No Major Issues to Report

**Information Technology (IT):**

No Major Issues to Report

**Acquisition (MCS):**

No Major Issues to Report

**Towing and Handling (Source):**

No Major Issues to Report

**General Purpose Science:**

No Major issues to Report.

**Heat Probe:**

No Major issues to Report.

**Daily Comment Summaries - Personnel Onboard**

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## Mon 15 Aug

**Technical Staff On-board the Langseth**

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski Jr.- Contract Navigator  
Mark Walker - Contract Compressor Mech

**PSO Staff On-board the Langseth**

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO







**Science Party On-board the Langseth**

Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU  
Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyrirtz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin McCloud- Engineer - OSU

**HSE Events Diary (Marcus G Langseth, )**

| Category                     | Code      | Start | End |
|------------------------------|-----------|-------|-----|
|                              |           |       |     |
| Daily Total Category         | Code      | Count |     |
| <div></div> Toolbox Meetings | Mtgs_Tbox | 2     |     |
| 8/15/2022                    |           |       |     |
| TBT - Recover Streamer       |           |       |     |
| 8/15/2022                    |           |       |     |
| TBT - Deploy Heat Probe      |           |       |     |

**HSE Event Period Totals - Project (Marcus G Langseth)**

| Category  | Code | Day | Week | Month | Project | Proj Hours | Man Hours |
|---|------|-----|------|-------|---------|------------|-----------|
|  Meetings              | Mtgs | 2   | 2    | 36    | 36      | 1.000      |           |
|  Start-up Meeting      | StUp | 0   | 0    | 1     | 1       | 1.000      |           |
|  Toolbox Meetings      | Tbox | 2   | 2    | 35    | 35      |            |           |
|  Reports               | Re   | 0   | 0    | 8     | 8       |            |           |
|  Contractor            | Con  | 0   | 0    | 8     | 8       |            |           |
|  Task, Hazard, Control | THC  | 0   | 0    | 8     | 8       |            |           |

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**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

## Daily Comment Summaries - Daily Summary

### Tue 16 Aug

The weather has started to pick up today. There was a brief discussion in the main lab on vessel orientation and the best way to acquire the remaining stations on Diebold. There were a few good suggestions on different ways to recover the probe during marginal seas to minimize the time in the air.

A great day of heat probe production, on stations 34-43 the vessel was averaging about 1.5 hours a station. That is from Deck to Deck. At the close of the day the vessel is transiting to Station 45.

There has been a change to the operations plan.

### Diebold:

Currently we are acquiring heat flow stations on Diebold, we have 14 stations left. It looks like diebold heat flow ops will be completed tomorrow around 9pm local.

### PF:

After Diebold we will start to deploy gear as we transit back to PF. The vessel will shoot seismic for 24 hours.

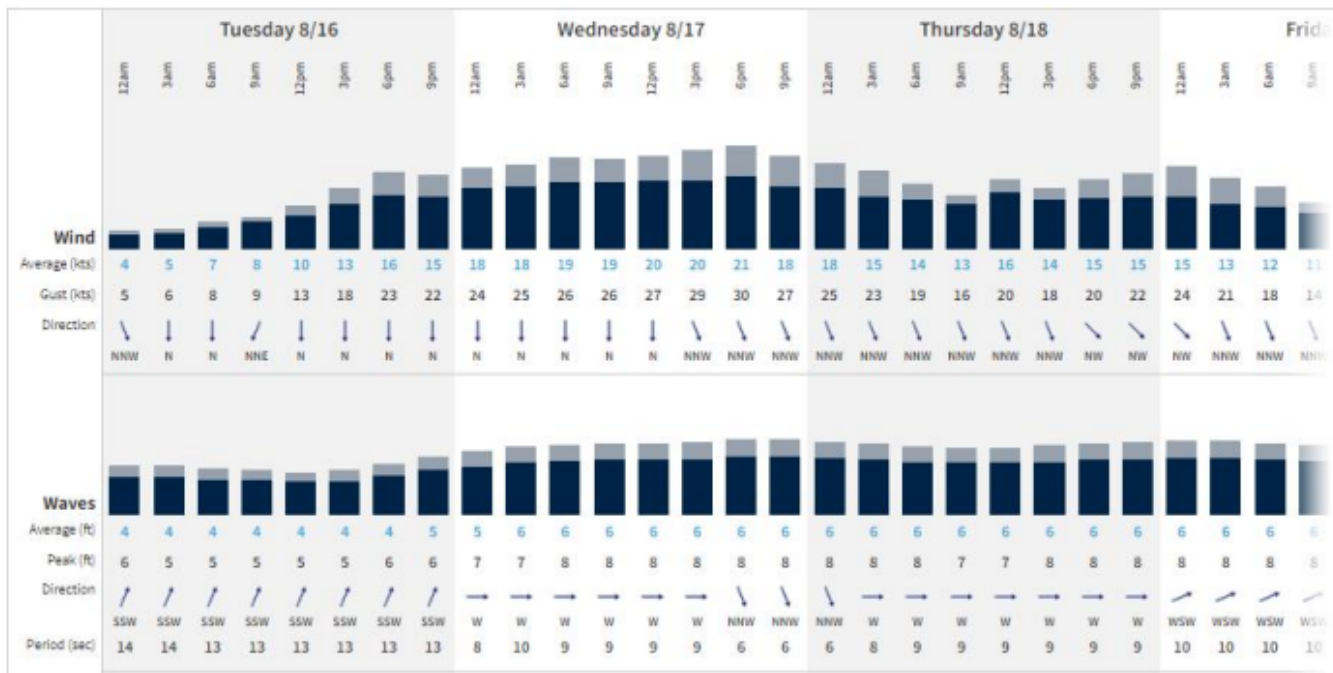
After acquiring 24 hours of seismic the gear will be recovered and heat flow ops will start.

### Margin:

After completing all the Heat Flow Stations on PF, the vessel will transit back to Margin and do another 12-16 hours of heat stations there.

### Coast:

Once done with the extra points on Margin, the vessel will transit to Coast. The order of ops will be weather dependent as it's supposed to pick up at the end of next week.



Ongoing maintenance and preparation:  
Mounted winch on port side aft after rebuild.  
Swapped out P.A.M. tow cable.  
Greased Dynacon Winch










Daily Comment Summaries - Plan for Tomorrow

Tue 16 Aug

Complete Heat Flow Ops on Diebold

Timing Diary (Marcus G Langseth, OBS\_Deployment)

| Category  | Code     | Start             | End               | Duration |
|---|----------|-------------------|-------------------|----------|
|  Deploy  | AC_SM_De | Tue 16. Aug 00:00 | Tue 16. Aug 03:55 | 3.917    |
| Heat Probe Op 20 S/N: HF14-3<br>Heat Probe Op 20 S/N: HF14-4<br>Heat Probe Op 20 S/N: HF14-5  |          |                   |                   |          |
|  Recovery  | DM_RC    | Tue 16. Aug 03:55 | Tue 16. Aug 05:18 | 1.383    |
| Heat Probe Recovery   |          |                   |                   |          |
|  Deployment  | MB_DP    | Tue 16. Aug 05:18 | Tue 16. Aug 07:47 | 2.483    |
| Heat Probe Deployment   |          |                   |                   |          |
|  Deploy  | AC_SM_De | Tue 16. Aug 07:47 | Tue 16. Aug 19:21 | 11.567   |
| Heat Probe Op 21 S/N: HF15-1<br>Heat Probe Op 21 S/N: HF15-2<br>Heat Probe Op 21 S/N: HF15-3<br>Heat Probe Op 21 S/N: HF15-4<br>Heat Probe Op 21 S/N: HF15-5<br>Heat Probe Op 21 S/N: HF15-6<br>Heat Probe Op 21 S/N: HF15-7<br>Heat Probe Op 21 S/N: HF15-8<br>Heat Probe Op 21 S/N: HF15-9<br>Heat Probe Op 21 S/N: HF15-10 |          |                   |                   |          |
|  Recovery  | DM_RC    | Tue 16. Aug 19:21 | Tue 16. Aug 21:15 | 1.900    |
| Heat Probe Recovery   |          |                   |                   |          |
|  Deployment  | MB_DP    | Tue 16. Aug 21:15 | Tue 16. Aug 23:07 | 1.867    |
| Heat Probe Deployment   |          |                   |                   |          |
|  Deploy  | AC_SM_De | Tue 16. Aug 23:07 | Tue 16. Aug 23:59 | 0.867    |
| Heat Probe Op 22 S/N: HF16-1  |          |                   |                   |          |

Timing Day By Day (Marcus G Langseth, OBS\_Deployment)

Cascadia (MGL2208)

| 16-Aug                | Hours         | % Percent     |
|-----------------------|---------------|---------------|
| <b>Acquisition</b>    | <b>16.350</b> | <b>68.125</b> |
| Swath Move            | 16.350        | 68.125        |
| Deploy                | 16.350        | 68.125        |
| <b>Demobilisation</b> | <b>3.283</b>  | <b>13.681</b> |
| Recovery              | 3.283         | 13.681        |
| <b>Mobilisation</b>   | <b>4.350</b>  | <b>18.125</b> |
| Deployment            | 4.350         | 18.125        |
| <b>Day's Total</b>    | <b>23.983</b> | <b>99.931</b> |

Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category           | Hours          | % Percent     |
|--------------------|----------------|---------------|
| <b>Acquisition</b> | <b>173.583</b> | <b>60.275</b> |

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| Category                      | Hours          | % Percent     |
|-------------------------------|----------------|---------------|
| Prime Line Change             | 8.550          | 2.969         |
| Production Prime              | 56.933         | 19.770        |
| Swath Move                    | 108.100        | 37.537        |
| Deploy                        | 108.100        | 37.537        |
| <b>Mobilisation</b>           | <b>46.083</b>  | <b>16.002</b> |
| Deployment                    | 42.650         | 14.810        |
| Mob Offshore                  | 3.433          | 1.192         |
| <b>Non-Chargeable StandBy</b> | <b>4.000</b>   | <b>1.389</b>  |
| Field Operations              | 4.000          | 1.389         |
| <b>Demobilisation</b>         | <b>27.383</b>  | <b>9.509</b>  |
| Recovery                      | 27.383         | 9.509         |
| <b>DownTime</b>               | <b>3.817</b>   | <b>1.325</b>  |
| Source                        | 3.817          | 1.325         |
| <b>Chargeable Standby</b>     | <b>33.117</b>  | <b>11.500</b> |
| Transit                       | 33.117         | 11.500        |
| <b>Total</b>                  | <b>287.983</b> |               |

## Basic Project Details

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

## Production Totals (Chgd km by Shotpoint) - Full Fold

### Hi-Rez

Cascadia (MGL2208) (no data for period)

| Charged km      | Day         | Week          | Month         | Project       |
|-----------------|-------------|---------------|---------------|---------------|
| Prime           | 0.00        | 137.73        | 507.23        | 507.23        |
| <b>Combined</b> | <b>0.00</b> | <b>137.73</b> | <b>507.23</b> | <b>507.23</b> |

## Production Listing (Chgd km) - Prime: Full Fold, Infill: Unknown

### Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)

| Seq          | Line | FCSP | LCSP | Prod Type | Production  | Ave Knots | Seq Status | Line Status |
|--------------|------|------|------|-----------|-------------|-----------|------------|-------------|
| <b>Total</b> |      |      |      |           | <b>0.00</b> |           |            |             |

## Production Totals (Acpt km by Shotpoint) - Full Fold

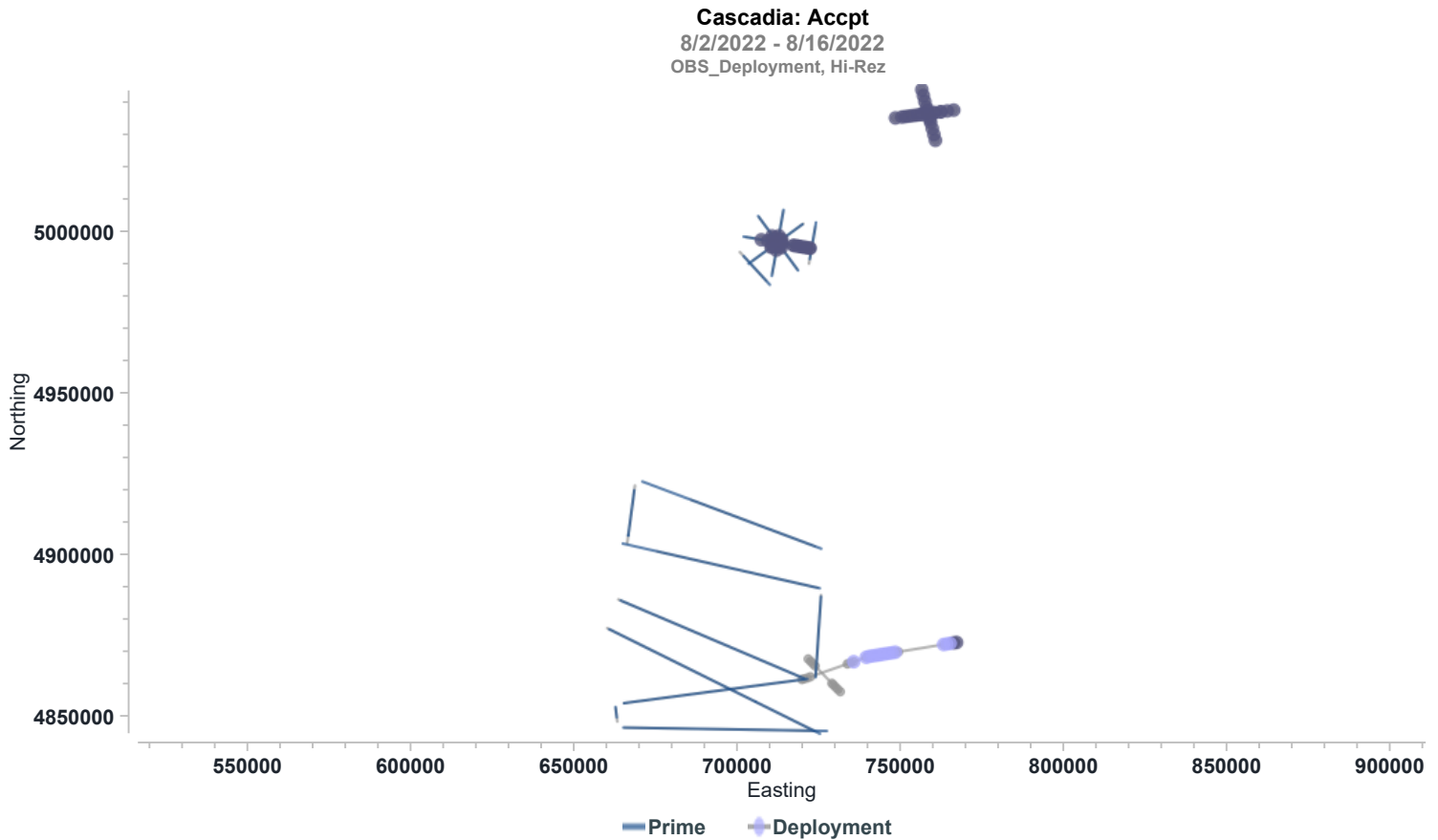
### Hi-Rez

Cascadia (MGL2208) (no data for period)

| Accepted km     | Day         | Week          | Month         | Project       |
|-----------------|-------------|---------------|---------------|---------------|
| Prime           | 0.00        | 144.13        | 522.17        | 522.17        |
| <b>Combined</b> | <b>0.00</b> | <b>144.13</b> | <b>522.17</b> | <b>522.17</b> |

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## Daily Comment Summaries - Daily Comments On Status of Equipment

**Tue 16 Aug**

### Navigation:

No Major Issues to Report

### Information Technology (IT):

No Major Issues to Report

### Acquisition (MCS):

No Major Issues to Report

### Towing and Handling (Source):

No Major Issues to Report

### General Purpose Science:

No Major issues to Report.

### Heat Probe:

No Major issues to Report.

## Daily Comment Summaries - Personnel Onboard

**Tue 16 Aug**

### Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski Jr.- Contract Navigator  
Mark Walker - Contract Compressor Mech

### PSO Staff On-board the Langseth

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

### Science Party On-board the Langseth


Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU

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Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyrirtz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin Mcloud- Engineer - OSU

**HSE Events Diary (Marcus G Langseth, )**

| Category   | Code      | Start | End   |
|--|-----------|-------|-------|
| Daily Total Category   |           | Code  | Count |
|  Toolbox Meetings | Mtgs_Tbox |       | 4     |
| 8/16/2022  |           |       |       |
| TBT - Heat Probe Deployment  |           |       |       |
| 8/16/2022  |           |       |       |
| TBT - Heat Probe Recovery  |           |       |       |

**HSE Event Period Totals - Project (Marcus G Langseth)**

| Category  | Code | Day | Week | Month | Project | Proj Hours | Man Hours |
|---|------|-----|------|-------|---------|------------|-----------|
|  Meetings                | Mtgs | 4   | 6    | 40    | 40      | 1.000      |           |
|  Start-up Meeting        | StUp | 0   | 0    | 1     | 1       | 1.000      |           |
|  Toolbox Meetings      | Tbox | 4   | 6    | 39    | 39      |            |           |
|  Reports               | Re   | 0   | 0    | 8     | 8       |            |           |
|  Contractor            | Con  | 0   | 0    | 8     | 8       |            |           |
|  Task, Hazard, Control | THC  | 0   | 0    | 8     | 8       |            |           |

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**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

## Daily Comment Summaries - Daily Summary

Wed 17 Aug

The day started with the vessel performing heat flow ops on Diebold. There were several recoveries and deployments as the vessel worked stations around the sea mount. As the weather had picked up slightly the crew talked about the recovery/deployment process and what could be done to mitigate the rough weather. A few tweaks to the procedure were implemented. After the transit to the south to start working on points, 47-51, the stbd main engine presented problems. The engine department trouble shot it the best they could but in the end the decision was made to bring the probe to surface for more trouble shooting and to get a feel for what is wrong. While the engineers were trouble shooting the Sci team, Captain and tech group started to look at other operational options.

Once the chief engineer and captain had an understanding of what the ship could and could not do, the team put plan A in place, which is to acquire the previously planned seismic lines on pseudofault, approximately 24 hours of shooting. This allows data acquisition on a key target but also gives the captain and chief along with the shore team time to prepare for the ships arrival in to port. The conclusion of the onboard trouble shooting was the vesssel has to sail to Newport for inspections of the prop and and more indepth look at the stbd main engine systems.

A time plan was put together based on transit speeds, availability of dock space and timing of slack tides. The vessel will be in Newport on Friday, time yet to be determined. From there we will start the trouble shooting process to see what is exactly wrong, how to fix it, resources needed and time involved.

Ongoing maintenance and preparation:

Fixed three flat float sections. Mender on aft GPS location was cracked. Drilled a hole, tapped, Teflon taped a bolt and threaded it in. Leak is fixed.

The section aft of the forward GPS pod was leaking. Changed the valve core and put a better cap on. The front float section was also leaking. Moved the bands to their proper locations and hopefully this will stop that leak

## Daily Comment Summaries - Plan for Tomorrow

Wed 17 Aug

Complete seismic operations around noon local, transit to Newport.

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## MGL 2208 Time Plan

Purple are actual numbers ( ALL TIMES ARE LOCAL)

| Action                                     | # of Stations | Heading | Nautical Miles | Duration | Stat Date & Time | End Date & Time | Speed |
|--|---------------|---------|----------------|----------|------------------|-----------------|-------|
| Recover Gear                               |               |         |                |          | 8/15/2022 10:17  | 8/15/2022 12:02 |       |
| Transit to DIEBOLD                         |               |         |                |          | 8/15/2022 12:02  | 8/15/2022 14:02 |       |
| DIEBOLD Heat Flow                          |               |         |                |          | 8/15/2022 14:02  | 8/17/2022 11:53 |       |
| Transit to PSEUDFAULT                      |               |         |                |          | 8/17/2022 11:53  | 8/17/2022 12:35 |       |
| The below times are for a 7:00 Slack Tide  |               |         |                |          |                  |                 |       |
| Deploy Gear                                |               |         |                |          | 8/17/2022 12:35  | 8/17/2022 15:31 |       |
| 11 P11                                     |               |         |                |          | 8/17/2022 15:31  | 8/18/2022 1:18  | 4.2   |
| 12 P12                                     |               |         |                |          | 8/18/2022 1:46   | 8/18/2022 8:34  | 4.2   |
| 13 P13                                     |               |         |                |          | 8/18/2022 9:02   | 8/18/2022 12:00 | 4.2   |
| 14 P14                                     |               |         |                |          | 8/18/2022 12:31  | 8/18/2022 21:36 | 4.2   |
| Recover Gear                               |               |         |                | 2:00:00  | 8/18/2022 9:30   | 8/18/2022 11:30 |       |
| Transit to Newport                         |               |         | 130            | 18:30:00 | 8/18/2022 11:30  | 8/19/2022 6:00  | 7     |
| The below times are for a 12:30 Slack Tide |               |         |                |          |                  |                 |       |
| Deploy Gear                                |               |         |                |          | 8/17/2022 12:35  | 8/17/2022 15:31 |       |
| 11 P11                                     |               |         |                |          | 8/17/2022 15:31  | 8/18/2022 1:18  | 4.2   |
| 12 P12                                     |               |         |                |          | 8/18/2022 1:46   | 8/18/2022 8:34  | 4.2   |
| 13 P13                                     |               |         |                |          | 8/18/2022 9:02   | 8/18/2022 12:00 | 4.2   |
| 14 P14                                     |               |         |                |          | 8/18/2022 12:31  | 8/18/2022 21:36 | 4.2   |
| Recover Gear                               |               |         |                | 2:00:00  | 8/18/2022 16:00  | 8/18/2022 18:00 |       |
| Transit to Newport                         |               |         | 120            | 17:30:00 | 8/18/2022 18:00  | 8/19/2022 11:30 | 7     |

Speed  
restricted due  
to operating  
on 1 mainSpeed  
restricted due  
to operating  
on 1 main





## Timing Diary (Marcus G Langseth, OBS\_Deployment, Hi-Rez)



| Category  | Code     | Start             | End               | Duration |
|---|----------|-------------------|-------------------|----------|
| Deploy  | AC_SM_De | Wed 17. Aug 00:00 | Wed 17. Aug 02:00 | 2.000    |
| Heat Probe Op 23 S/N: HF16-2<br>Heat Probe Op 23 S/N: HF16-3                                    |          |                   |                   |          |
| Recovery  | DM_RC    | Wed 17. Aug 02:00 | Wed 17. Aug 03:25 | 1.417    |
| Heat Probe Recovery   |          |                   |                   |          |
| Deployment  | MB_DP    | Wed 17. Aug 03:25 | Wed 17. Aug 05:47 | 2.367    |
| Heat Probe Deployment   |          |                   |                   |          |
| Deploy  | AC_SM_De | Wed 17. Aug 05:47 | Wed 17. Aug 08:58 | 3.183    |
| Heat Probe Ops 24 S/N: HF17-1<br>Heat Probe Ops 24 S/N: HF17-2<br>Heat Probe Ops 24 S/N: HF17-3 |          |                   |                   |          |
| Recovery  | DM_RC    | Wed 17. Aug 08:58 | Wed 17. Aug 11:37 | 2.650    |
| Heat Probe Recovery   |          |                   |                   |          |
| Deployment  | MB_DP    | Wed 17. Aug 11:37 | Wed 17. Aug 12:38 | 1.017    |
| Heat Probe Deployment   |          |                   |                   |          |
| Deploy  | AC_SM_De | Wed 17. Aug 12:38 | Wed 17. Aug 15:49 | 3.183    |
| Heat Probe Op 25 S/N: HF 18-1<br>Heat Probe Op 25 S/N: HF 18-2                                  |          |                   |                   |          |
| Recovery  | DM_RC    | Wed 17. Aug 15:49 | Wed 17. Aug 17:01 | 1.200    |
| Heat Probe Recovery   |          |                   |                   |          |

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| Category   | Code   | Start             | End               | Duration |
|--|--------|-------------------|-------------------|----------|
|  Transit  | SB_TRT | Wed 17. Aug 17:01 | Wed 17. Aug 19:30 | 2.483    |
| Transit to Pseudofault while trouble shooting Stbd Main  |        |                   |                   |          |
|  Deployment   | MB_DP  | Wed 17. Aug 19:30 | Wed 17. Aug 21:35 | 2.083    |
| Guns, Streamer, PAM and MAGGY fully Deployed   |        |                   |                   |          |
|  Prime Extended L/C   | AC_PXL | Wed 17. Aug 21:35 | Wed 17. Aug 22:53 | 1.300    |
| Seq: 25<br>Extended Prime line change.   |        |                   |                   |          |
|  Production Prime   | AC_PP  | Wed 17. Aug 22:53 | Wed 17. Aug 24:00 | 1.117    |
| Seq: 17<br>SOL Seq 17 Line:MGL2208P11 Block:Cascadia FGSP:1143 FCSP:1143 Hdg:10.6° Prime<br>MSP Seq 17 Line:MGL2208P11 Block:Cascadia LGSP:1495 LCSP:1495 Midnight |        |                   |                   |          |

## Timing Day By Day (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| 17-Aug                    | Hours         | % Percent      |
|---------------------------|---------------|----------------|
| <b>Acquisition</b>        | <b>10.783</b> | <b>44.931</b>  |
| Prime Extended L/C        | 1.300         | 5.417          |
| Production Prime          | 1.117         | 4.653          |
| Swath Move                | 8.367         | 34.861         |
| Deploy                    | 8.367         | 34.861         |
| <b>Chargeable Standby</b> | <b>2.483</b>  | <b>10.347</b>  |
| Transit                   | 2.483         | 10.347         |
| <b>Demobilisation</b>     | <b>5.267</b>  | <b>21.944</b>  |
| Recovery                  | 5.267         | 21.944         |
| <b>Mobilisation</b>       | <b>5.467</b>  | <b>22.778</b>  |
| Deployment                | 5.467         | 22.778         |
| <b>Day's Total</b>        | <b>24.000</b> | <b>100.000</b> |

## Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category                      | Hours          | % Percent     |
|-------------------------------|----------------|---------------|
| <b>Acquisition</b>            | <b>184.367</b> | <b>59.095</b> |
| Prime Extended L/C            | 1.300          | 0.417         |
| Prime Line Change             | 8.550          | 2.741         |
| Production Prime              | 58.050         | 18.607        |
| Swath Move                    | 116.467        | 37.331        |
| Deploy                        | 116.467        | 37.331        |
| <b>Mobilisation</b>           | <b>51.550</b>  | <b>16.523</b> |
| Deployment                    | 48.117         | 15.423        |
| Mob Offshore                  | 3.433          | 1.100         |
| <b>Non-Chargeable StandBy</b> | <b>4.000</b>   | <b>1.282</b>  |
| Field Operations              | 4.000          | 1.282         |
| <b>Demobilisation</b>         | <b>32.650</b>  | <b>10.465</b> |
| Recovery                      | 32.650         | 10.465        |
| <b>DownTime</b>               | <b>3.817</b>   | <b>1.223</b>  |
| Source                        | 3.817          | 1.223         |
| <b>Chargeable Standby</b>     | <b>35.600</b>  | <b>11.411</b> |

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| Category | Hours   | % Percent |
|----------|---------|-----------|
| Transit  | 35.600  | 11.411    |
| Total    | 311.983 |           |

Basic Project Details

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

Production Totals (Chgd km by Shotpoint) - Full Fold

Hi-Rez

Cascadia (MGL2208)

| Charged km | Day  | Week   | Month  | Project |
|------------|------|--------|--------|---------|
| Prime      | 8.83 | 146.55 | 516.05 | 516.05  |
| Combined   | 8.83 | 146.55 | 516.05 | 516.05  |

Production Listing (Chgd km by Shotpoint) - Full Fold

Hi-Rez, OBS\_Deployment

Cascadia (MGL2208)

| Seq   | Line | Heading | FCSP | LCSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|------|---------|------|------|-----------|------------|-----------|------------|-------------|
| 17    | P11  | 10.6    | 1143 | 1495 | Prime     | 8.83       | 4.255     | Midnight   | Part        |
| Total |      |         |      |      |           | 8.83       |           |            |             |

Production Totals (Accpt km by Shotpoint) - Full Fold

Hi-Rez

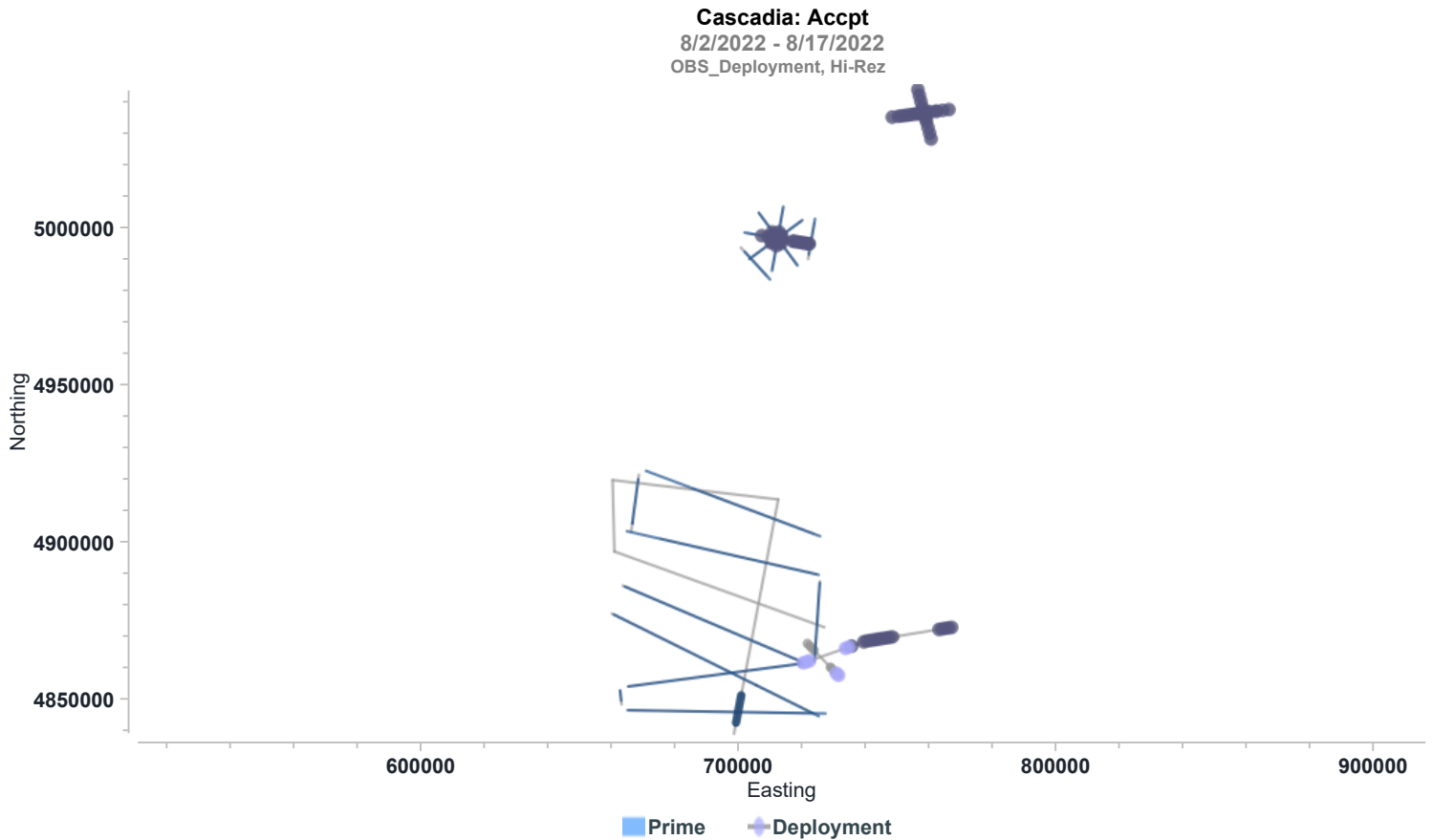
Cascadia (MGL2208)

| Accepted km | Day  | Week   | Month  | Project |
|-------------|------|--------|--------|---------|
| Prime       | 8.83 | 152.95 | 531.00 | 531.00  |
| Combined    | 8.83 | 152.95 | 531.00 | 531.00  |



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## Daily Comment Summaries - Daily Comments On Status of Equipment

Wed 17 Aug

### Navigation:

No Major Issues to Report

### Information Technology (IT):

No Major Issues to Report

### Acquisition (MCS):

No Major Issues to Report

### Towing and Handling (Source):

No Major Issues to Report

### General Purpose Science:

No Major issues to Report.

### Heat Probe:

No Major issues to Report.

## Daily Comment Summaries - Personnel Onboard

Wed 17 Aug

### Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski Jr.- Contract Navigator  
Mark Walker - Contract Compressor Mech

### PSO Staff On-board the Langseth

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

### Science Party On-board the Langseth

Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU

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Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyrirtz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab

## HSE Events Diary (Marcus G Langseth, )

| Category   | Code      | Start | End   |
|--|-----------|-------|-------|
| Daily Total Category   |           | Code  | Count |
|  Toolbox Meetings | Mtgs_Tbox |       | 6     |
| 8/17/2022  |           |       |       |
| TBT - Heat Probe Recovery  |           |       |       |
| 8/17/2022  |           |       |       |
| TBT - Heat Probe Deployment  |           |       |       |
| 8/17/2022  |           |       |       |
| TBT - Streamer Deployment  |           |       |       |

## HSE Event Period Totals - Project (Marcus G Langseth)

| Category  | Code | Day | Week | Month | Project | Proj Hours | Man Hours |
|---|------|-----|------|-------|---------|------------|-----------|
|  Meetings               | Mtgs | 6   | 12   | 46    | 46      | 1.000      |           |
|  Start-up Meeting      | StUp | 0   | 0    | 1     | 1       | 1.000      |           |
|  Toolbox Meetings      | Tbox | 6   | 12   | 45    | 45      |            |           |
|  Reports               | Re   | 0   | 0    | 8     | 8       |            |           |
|  Contractor            | Con  | 0   | 0    | 8     | 8       |            |           |
|  Task, Hazard, Control | THC  | 0   | 0    | 8     | 8       |            |           |

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**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

### Daily Comment Summaries - Daily Summary

#### Thu 18 Aug

A full day of seismic. Sequences 17-20 were acquired today, finishing up the last bit of seismic on Pseudofault.

The wind and seas were with us, just as the vessel was shooting the last shot point our gear recovery time hit. The guns and streamer were recovered in a safe and efficient manner and the vessel picked up speed for Newport. Currently we are making ~6 kts SOG ( Speed over ground). We were hoping for a slightly faster speed back to Newport but this should get us back just in time for the pilot.

A meeting was held today where Chief Engineer Jay and the Captain explained in detail our current status and the plan forward in port along with a few timelines. All onboard are hoping for good news this port call. I heard a rumour that there will be a gathering up on the bow this evening around midnight, but I can neither confirm nor deny it... Hopefully after some good systematic trouble shooting we can get back out and continue the heat flow ops but only time will tell.

The crew are keeping busy filling out logs, checking data, quality control and understanding that a flush really does beat 3 of a kind.







ETA at the Sea buoy is ~11 am local



### Daily Comment Summaries - Plan for Tomorrow

#### Thu 18 Aug

The vessel will arrive at Newport for the afternoon slack tide, will be tied up over lunch local.  
A diver is scheduled for 8am on Saturday the 20th

### Timing Diary (Marcus G Langseth, Hi-Rez)

| Category  | Code   | Start             | End               | Duration |
|---|--------|-------------------|-------------------|----------|
|  Production Prime  | AC_PP  | Thu 18. Aug 00:00 | Thu 18. Aug 08:23 | 8.383    |
| Seq: 17<br>SOL Seq 17 Line:MGL2208017P11 Block:Cascadia FGSP:1496 FCSP:1496 Hdg:10.6° Prime<br>EOL Seq 17 Line:MGL2208017P11 Block:Cascadia LGSP:3984 LCSP:3984 Complete  |        |                   |                   |          |
|  Prime Line Change   | AC_PLC | Thu 18. Aug 08:23 | Thu 18. Aug 08:34 | 0.183    |
| Seq: 17<br>Line: 017P11<br>Nominal Prime line change.   |        |                   |                   |          |
|  Production Prime  | AC_PP  | Thu 18. Aug 08:34 | Thu 18. Aug 13:52 | 5.300    |
| Seq: 18<br>SOL Seq 18 Line:MGL2208018P12 Block:Cascadia FGSP:1064 FCSP:1064 Hdg:276.7° Prime<br>EOL Seq 18 Line:MGL2208018P12 Block:Cascadia LGSP:3046 LCSP:3046 Complete |        |                   |                   |          |
|  Prime Line Change   | AC_PLC | Thu 18. Aug 13:52 | Thu 18. Aug 14:03 | 0.183    |
| Seq: 18<br>Line: 018P12<br>Nominal Prime line change.   |        |                   |                   |          |
|  Production Prime  | AC_PP  | Thu 18. Aug 14:03 | Thu 18. Aug 16:00 | 1.950    |
| Seq: 19<br>SOL Seq 19 Line:MGL2208019P13 Block:Cascadia FGSP:1060 FCSP:1060 Hdg:178.6° Prime<br>EOL Seq 19 Line:MGL2208019P13 Block:Cascadia LGSP:1885 LCSP:1885 Complete |        |                   |                   |          |
|  Prime Line Change   | AC_PLC | Thu 18. Aug 16:00 | Thu 18. Aug 16:11 | 0.183    |
| Seq: 19<br>Line: 019P13<br>Nominal Prime line change.   |        |                   |                   |          |

| Category  | Code  | Start             | End               | Duration |
|---|-------|-------------------|-------------------|----------|
|  Production Prime  | AC_PP | Thu 18. Aug 16:11 | Thu 18. Aug 23:32 | 7.350    |
| Seq: 20<br>SOL Seq 20 Line:MGL2208020P14 Preplot:P14 Block:Cascadia FGSP:1071 FCSP:1071 Hdg:110° Prime<br>EOL Seq 20 Line:MGL2208020P14 Preplot:P14 Block:Cascadia LGSP:3830 LCSP:3830 Complete |       |                   |                   |          |
|  Recovery  | DM_RC | Thu 18. Aug 23:32 | Thu 18. Aug 24:00 | 0.467    |
| Guns and Streamer Recovery  |       |                   |                   |          |

Timing Day By Day (Marcus G Langseth, Hi-Rez)

Cascadia (MGL2208)

| 18-Aug                | Hours         | % Percent      |
|-----------------------|---------------|----------------|
| <b>Acquisition</b>    | <b>23.533</b> | <b>98.056</b>  |
| Prime Line Change     | 0.550         | 2.292          |
| Production Prime      | 22.983        | 95.764         |
| <b>Demobilisation</b> | <b>0.467</b>  | <b>1.944</b>   |
| Recovery              | 0.467         | 1.944          |
| <b>Day's Total</b>    | <b>24.000</b> | <b>100.000</b> |

Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category                      | Hours          | % Percent     |
|-------------------------------|----------------|---------------|
| <b>Acquisition</b>            | <b>207.900</b> | <b>61.878</b> |
| Prime Extended L/C            | 1.300          | 0.387         |
| Prime Line Change             | 9.100          | 2.708         |
| Production Prime              | 81.033         | 24.118        |
| Swath Move                    | 116.467        | 34.664        |
| Deploy                        | 116.467        | 34.664        |
| <b>Mobilisation</b>           | <b>51.550</b>  | <b>15.343</b> |
| Deployment                    | 48.117         | 14.321        |
| Mob Offshore                  | 3.433          | 1.022         |
| <b>Non-Chargeable StandBy</b> | <b>4.000</b>   | <b>1.191</b>  |
| Field Operations              | 4.000          | 1.191         |
| <b>Demobilisation</b>         | <b>33.117</b>  | <b>9.857</b>  |
| Recovery                      | 33.117         | 9.857         |
| <b>DownTime</b>               | <b>3.817</b>   | <b>1.136</b>  |
| Source                        | 3.817          | 1.136         |
| <b>Chargeable Standby</b>     | <b>35.600</b>  | <b>10.596</b> |
| Transit                       | 35.600         | 10.596        |
| <b>Total</b>                  | <b>335.983</b> |               |

Basic Project Details

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

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## Production Totals (Chgd km by Shotpoint) - Full Fold

### Hi-Rez

Cascadia (MGL2208)

| Charged km      | Day           | Week          | Month         | Project       |
|-----------------|---------------|---------------|---------------|---------------|
| Prime           | 201.45        | 348.00        | 717.50        | 717.50        |
| <b>Combined</b> | <b>201.45</b> | <b>348.00</b> | <b>717.50</b> | <b>717.50</b> |

## Production Listing (Chgd km by Shotpoint) - Full Fold

### Hi-Rez, OBS\_Deployment

Cascadia (MGL2208)

| Seq          | Line   | Heading | FCSP | LCSP | Prod Type | Production    | Ave Knots | Seq Status | Line Status |
|--------------|--------|---------|------|------|-----------|---------------|-----------|------------|-------------|
| 17           | 017P11 | 10.6    | 1496 | 3984 | Prime     | 62.23         | 4.037     | Complete   | Complete    |
| 18           | 018P12 | 276.7   | 1064 | 3046 | Prime     | 49.58         | 5.048     | Complete   | Complete    |
| 19           | 019P13 | 178.6   | 1060 | 1885 | Prime     | 20.65         | 5.711     | Complete   | Complete    |
| 20           | 014P14 | 110.0   | 1071 | 3830 | Prime     | 69.00         | 5.067     | Complete   | Complete    |
| <b>Total</b> |        |         |      |      |           | <b>201.45</b> |           |            |             |

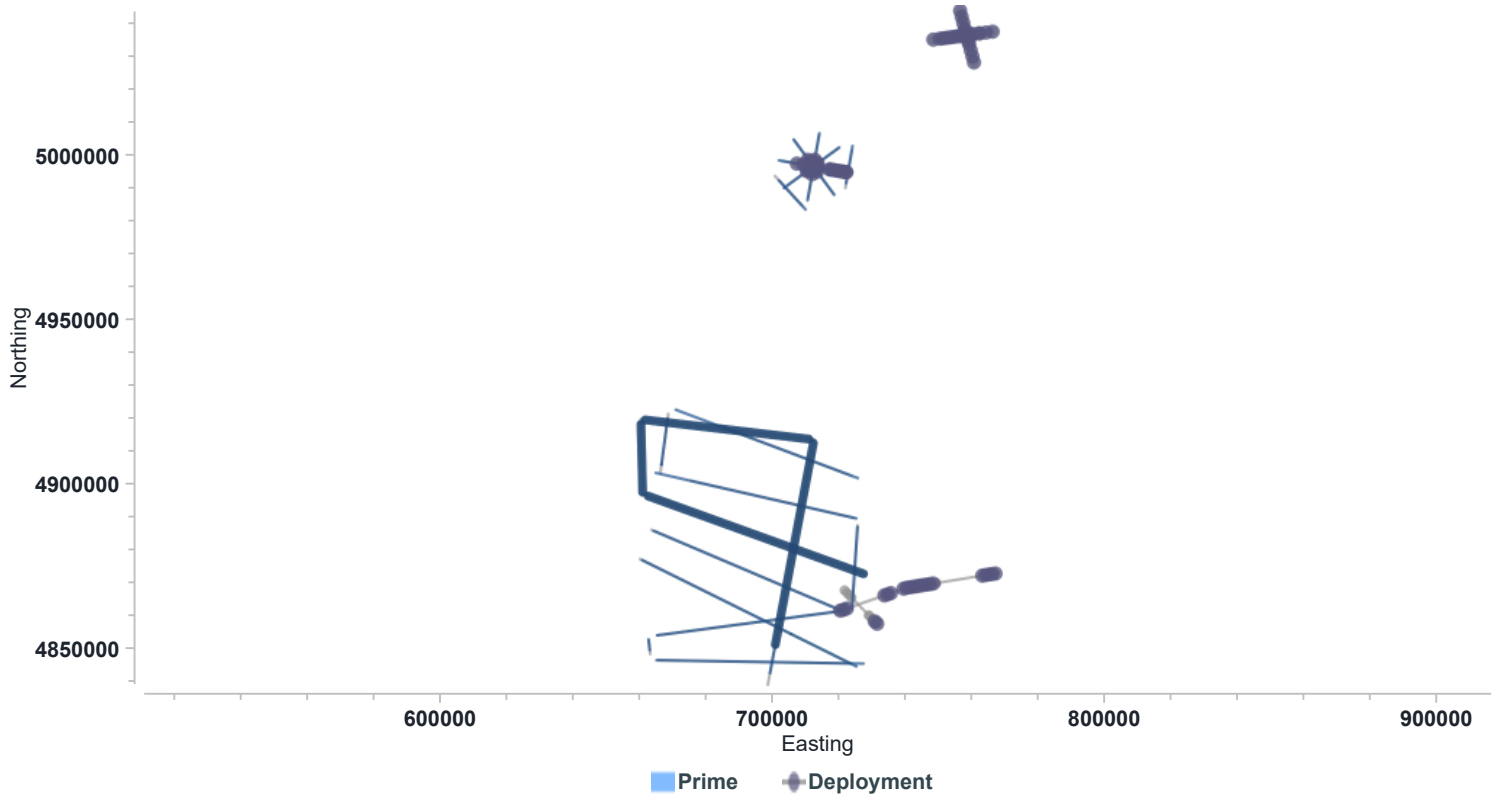
## Production Totals (Accpt km by Shotpoint) - Full Fold

### Hi-Rez

Cascadia (MGL2208)

| Accepted km     | Day           | Week          | Month         | Project       |
|-----------------|---------------|---------------|---------------|---------------|
| Prime           | 201.45        | 354.40        | 732.45        | 732.45        |
| <b>Combined</b> | <b>201.45</b> | <b>354.40</b> | <b>732.45</b> | <b>732.45</b> |

**Cascadia: Accpt**  
8/2/2022 - 8/18/2022  
OBS\_Deployment, Hi-Rez



## Daily Comment Summaries - Daily Comments On Status of Equipment

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Thu 18 Aug

Navigation:  
No Major Issues to Report

Information Technology (IT):  
No Major Issues to Report

Acquisition (MCS):  
No Major Issues to Report

Towing and Handling (Source):  
No Major Issues to Report

General Purpose Science:  
No Major issues to Report.

Heat Probe:  
No Major issues to Report.

Daily Comment Summaries - Personnel Onboard

Thu 18 Aug

Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski Jr.- Contract Navigator  
Mark Walker - Contract Compressor Mech

PSO Staff On-board the Langseth

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO







Science Party On-board the Langseth

Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU  
Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyrirtz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab

HSE Events Diary (Marcus G Langseth, )

| Category | Code | Start | End |
|----------|------|-------|-----|
|----------|------|-------|-----|

HSE Event Period Totals - Project (Marcus G Langseth)

| Category   | Code | Day | Week | Month | Project | Proj Hours | Man Hours |
|--|------|-----|------|-------|---------|------------|-----------|
|  Meetings               | Mtgs | 0   | 12   | 46    | 46      | 1.000      |           |
|  Start-up Meeting       | StUp | 0   | 0    | 1     | 1       | 1.000      |           |
|  Toolbox Meetings       | Tbox | 0   | 12   | 45    | 45      |            |           |
|  Reports                | Re   | 0   | 0    | 8     | 8       |            |           |
|  Contractor             | Con  | 0   | 0    | 8     | 8       |            |           |
|  Task, Hazard, Control | THC  | 0   | 0    | 8     | 8       |            |           |

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**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

Daily Comment Summaries - Daily Summary

Fri 19 Aug

At the start of the day the vessel was just finishing up a very efficient and safe recovery. The Mechanical depart has been operating like a Swiss watch, possibly a Brietling or Tudor, this trip with how efficient the deployment/recoveries have gone.

Once recovery was completed the vessel set course for Newport. Arrival to the seabuoy was right on time, we met the pilot and a tug followed us in. The captain and deck crew did a great job bringing the vessel along side.




The diver is schedule for tomorrow morning, 8am local. All onboard are hoping for good news so we can get back out to sea as soon as possible.

Daily Comment Summaries - Plan for Tomorrow

Fri 19 Aug

Trouble Shoot Stbd Main  
Continue with maintenance and preparation

Timing Diary (Marcus G Langseth, Hi-Rez)

| Category  | Code   | Start             | End               | Duration |
|---|--------|-------------------|-------------------|----------|
|  Recovery  | DM_RC  | Fri 19. Aug 00:00 | Fri 19. Aug 01:02 | 1.033    |
| Streamer Recovery   |        |                   |                   |          |
|  Transit   | SB_TRT | Fri 19. Aug 01:02 | Fri 19. Aug 21:10 | 20.133   |
| Transit to Newport  |        |                   |                   |          |
|  Port Call | SB_PC  | Fri 19. Aug 21:10 | Fri 19. Aug 24:00 | 2.833    |
| Newport - Trouble Shooting Stbd Main  |        |                   |                   |          |

Timing Day By Day (Marcus G Langseth, Hi-Rez)

Cascadia (MGL2208)

| 19-Aug                    | Hours         | % Percent      |
|---------------------------|---------------|----------------|
| <b>Chargeable Standby</b> | <b>22.967</b> | <b>95.694</b>  |
| Port Call                 | 2.833         | 11.806         |
| Transit                   | 20.133        | 83.889         |
| <b>Demobilisation</b>     | <b>1.033</b>  | <b>4.306</b>   |
| Recovery                  | 1.033         | 4.306          |
| <b>Day's Total</b>        | <b>24.000</b> | <b>100.000</b> |

Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category           | Hours          | % Percent     |
|--------------------|----------------|---------------|
| <b>Acquisition</b> | <b>207.900</b> | <b>57.753</b> |
| Prime Extended L/C | 1.300          | 0.361         |
| Prime Line Change  | 9.100          | 2.528         |
| Production Prime   | 81.033         | 22.510        |

| Category               | Hours   | % Percent |
|------------------------|---------|-----------|
| Swath Move             | 116.467 | 32.353    |
| Deploy                 | 116.467 | 32.353    |
| Mobilisation           | 51.550  | 14.320    |
| Deployment             | 48.117  | 13.366    |
| Mob Offshore           | 3.433   | 0.954     |
| Non-Chargeable StandBy | 4.000   | 1.111     |
| Field Operations       | 4.000   | 1.111     |
| Chargeable Standby     | 58.567  | 16.269    |
| Port Call              | 2.833   | 0.787     |
| Transit                | 55.733  | 15.482    |
| Demobilisation         | 34.150  | 9.487     |
| Recovery               | 34.150  | 9.487     |
| DownTime               | 3.817   | 1.060     |
| Source                 | 3.817   | 1.060     |
| Total                  | 359.983 |           |

Basic Project Details

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

Production Totals (Chgd km by Shotpoint) - Full Fold

Hi-Rez

Cascadia (MGL2208) (no data for period)

| Charged km | Day  | Week   | Month  | Project |
|------------|------|--------|--------|---------|
| Prime      | 0.00 | 348.00 | 717.50 | 717.50  |
| Combined   | 0.00 | 348.00 | 717.50 | 717.50  |

Production Listing (Chgd km) - Prime: Full Fold, Infill: Unknown

Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)

| Seq   | Line | FCSP | LCSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|------|------|------|-----------|------------|-----------|------------|-------------|
| Total |      |      |      |           | 0.00       |           |            |             |

Production Totals (Accpt km by Shotpoint) - Full Fold

Hi-Rez

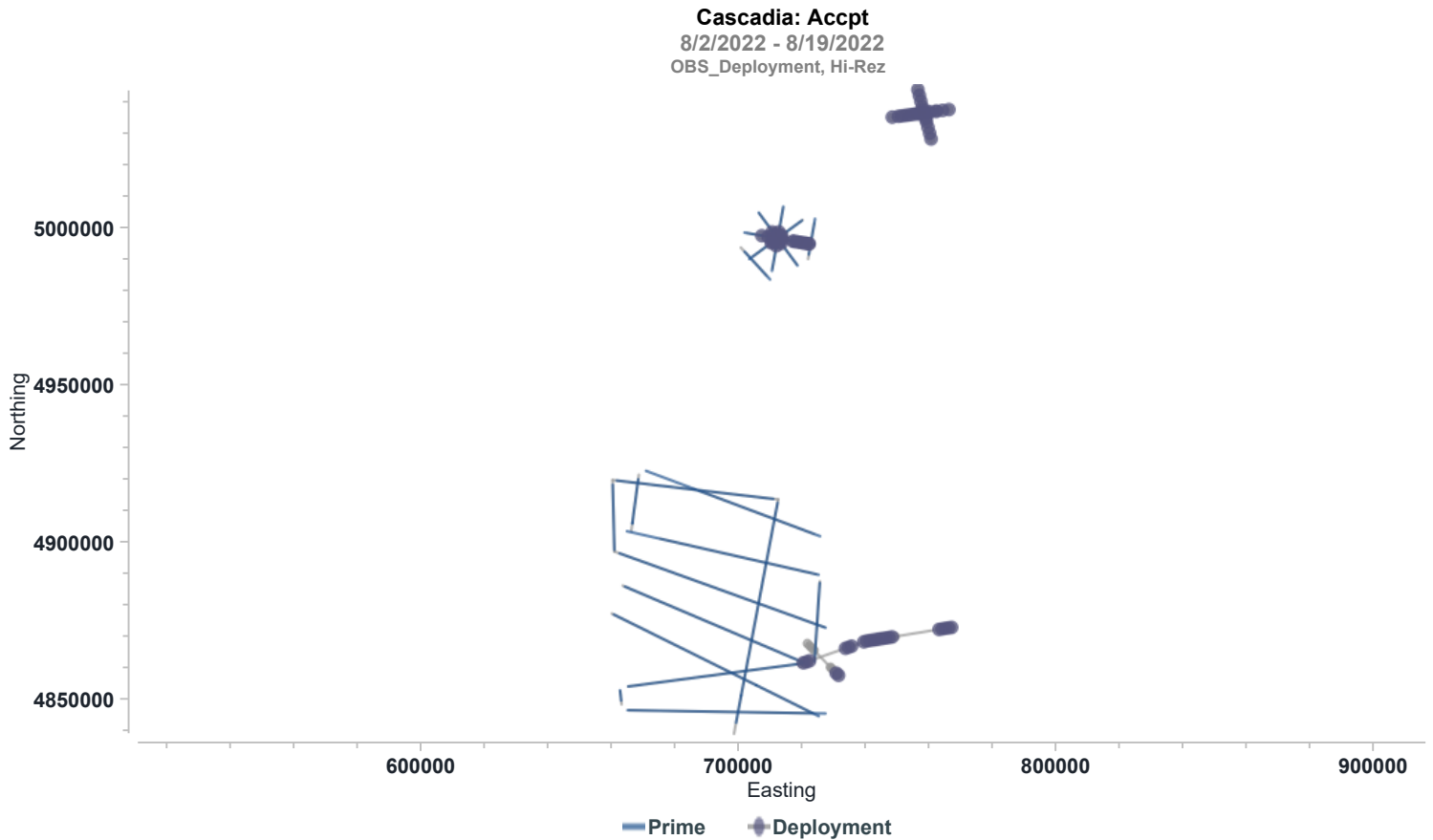
Cascadia (MGL2208) (no data for period)

| Accepted km | Day  | Week   | Month  | Project |
|-------------|------|--------|--------|---------|
| Prime       | 0.00 | 354.40 | 732.45 | 732.45  |
| Combined    | 0.00 | 354.40 | 732.45 | 732.45  |



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## Daily Comment Summaries - Daily Comments On Status of Equipment

**Fri 19 Aug**

### Navigation:

No Major Issues to Report

### Information Technology (IT):

No Major Issues to Report

### Acquisition (MCS):

No Major Issues to Report

### Towing and Handling (Source):

No Major Issues to Report

### General Purpose Science:

No Major issues to Report.

### Heat Probe:

No Major issues to Report.

## Daily Comment Summaries - Personnel Onboard

**Fri 19 Aug**

### Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski Jr.- Contract Navigator  
Mark Walker - Contract Compressor Mech

### PSO Staff On-board the Langseth

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

### Science Party On-board the Langseth

Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU

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Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyrirtz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin Mcloud- Engineer - OSU

## HSE Events Diary (Marcus G Langseth, )

| Category | Code | Start | End |
|----------|------|-------|-----|
|----------|------|-------|-----|

## HSE Event Period Totals - Project (Marcus G Langseth)

| Category   | Code | Day | Week | Month | Project | Proj Hours | Man Hours |
|--|------|-----|------|-------|---------|------------|-----------|
|  Meetings               | Mtgs | 0   | 12   | 46    | 46      | 1.000      |           |
|  Start-up Meeting      | StUp | 0   | 0    | 1     | 1       | 1.000      |           |
|  Toolbox Meetings      | Tbox | 0   | 12   | 45    | 45      |            |           |
|  Reports                | Re   | 0   | 0    | 8     | 8       |            |           |
|  Contractor            | Con  | 0   | 0    | 8     | 8       |            |           |
|  Task, Hazard, Control | THC  | 0   | 0    | 8     | 8       |            |           |

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**Client:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Block:** Cascadia  
**Client Contact:**  
**Consultancy:**  
**Job No:**

**Contractor:** Lamont-Doherty Earth Observatory  
**Job No:** MGL2208  
**Vessel:** Marcus G Langseth  
**Supervisor:**  
**Party Chiefs:** Cody Bahlau  
**Client Reps:** Glenn Spinelli

Daily Comment Summaries - Daily Summary

Sat 20 Aug

The diver was down at 8am local. The shaft and propeller looked clean. The Chief Engineer and team started to trouble shoot the gear box and related equipment. It was discovered that the gear box was damaged along with other items. The time line to fix while uncertain, was past the current cruise dates. The decision was made to end MGL 2208.

The crew have been busy with de-mobilizing the gear on deck and in the Main lab. Some of the crew will start to leave this evening.

Final Job Stats:  
75 Heat Probe Stations Completed  
732.45 Seismic Kms

Daily Comment Summaries - Plan for Tomorrow

Sat 20 Aug

End of Job

Timing Diary (Marcus G Langseth, Hi-Rez)

| Category                   | Code  | Start             | End               | Duration |
|----------------------------|-------|-------------------|-------------------|----------|
| Port call                  | NC_PC | Sat 20. Aug 00:00 | Sat 20. Aug 24:00 | 24.000   |
| At the OSU dock in Newport |       |                   |                   |          |

Timing Day By Day (Marcus G Langseth, Hi-Rez)

Cascadia (MGL2208)

| 20-Aug                 | Hours  | % Percent |
|------------------------|--------|-----------|
| Chargeable Standby     | 0.000  | 0.000     |
| Port Call              | 0.000  | 0.000     |
| Non-Chargeable StandBy | 24.000 | 100.000   |
| Port call              | 24.000 | 100.000   |
| Day's Total            | 24.000 | 100.000   |

Timing Breakdown Summary - Project (Marcus G Langseth, OBS\_Deployment, Hi-Rez)

Cascadia (MGL2208)

| Category           | Hours   | % Percent |
|--------------------|---------|-----------|
| Acquisition        | 207.900 | 54.143    |
| Prime Extended L/C | 1.300   | 0.339     |
| Prime Line Change  | 9.100   | 2.370     |
| Production Prime   | 81.033  | 21.103    |
| Swath Move         | 116.467 | 30.331    |
| Deploy             | 116.467 | 30.331    |
| Mobilisation       | 51.550  | 13.425    |
| Deployment         | 48.117  | 12.531    |

| Category               | Hours   | % Percent |
|------------------------|---------|-----------|
| Mob Offshore           | 3.433   | 0.894     |
| Non-Chargeable StandBy | 28.000  | 7.292     |
| Field Operations       | 4.000   | 1.042     |
| Port call              | 24.000  | 6.250     |
| Chargeable Standby     | 58.567  | 15.252    |
| Port Call              | 2.833   | 0.738     |
| Transit                | 55.733  | 14.515    |
| Demobilisation         | 34.150  | 8.894     |
| Recovery               | 34.150  | 8.894     |
| DownTime               | 3.817   | 0.994     |
| Source                 | 3.817   | 0.994     |
| Total                  | 383.983 |           |

Basic Project Details

| Hi-Rez          |         |                  |        |                     |        |
|-----------------|---------|------------------|--------|---------------------|--------|
| General Details |         |                  |        |                     |        |
| Record length:  | 8000 ms | Sample rate:     | 0.5 ms | Shotpoint interval: | 25 m   |
| CoS to CNG:     | 100 m   | Fold Coverage:   | 0      |                     |        |
| Cable Details   |         |                  |        |                     |        |
| No of Cables:   | 1       | Chans Per Cable: | 144    | Front Depth:        | 4 m    |
| Tail Depth:     | 4 m     | Length:          | 900 m  | Group interval:     | 6.25 m |

Production Totals (Chgd km by Shotpoint) - Full Fold

Hi-Rez

Cascadia (MGL2208) (no data for period)

| Charged km | Day  | Week   | Month  | Project |
|------------|------|--------|--------|---------|
| Prime      | 0.00 | 348.00 | 717.50 | 717.50  |
| Combined   | 0.00 | 348.00 | 717.50 | 717.50  |

Production Listing (Chgd km) - Prime: Full Fold, Infill: Unknown

Hi-Rez, OBS\_Deployment

Cascadia (MGL2208) (no data for period)

| Seq   | Line | FCSP | LCSP | Prod Type | Production | Ave Knots | Seq Status | Line Status |
|-------|------|------|------|-----------|------------|-----------|------------|-------------|
| Total |      |      |      |           | 0.00       |           |            |             |

Production Totals (Accpt km by Shotpoint) - Full Fold

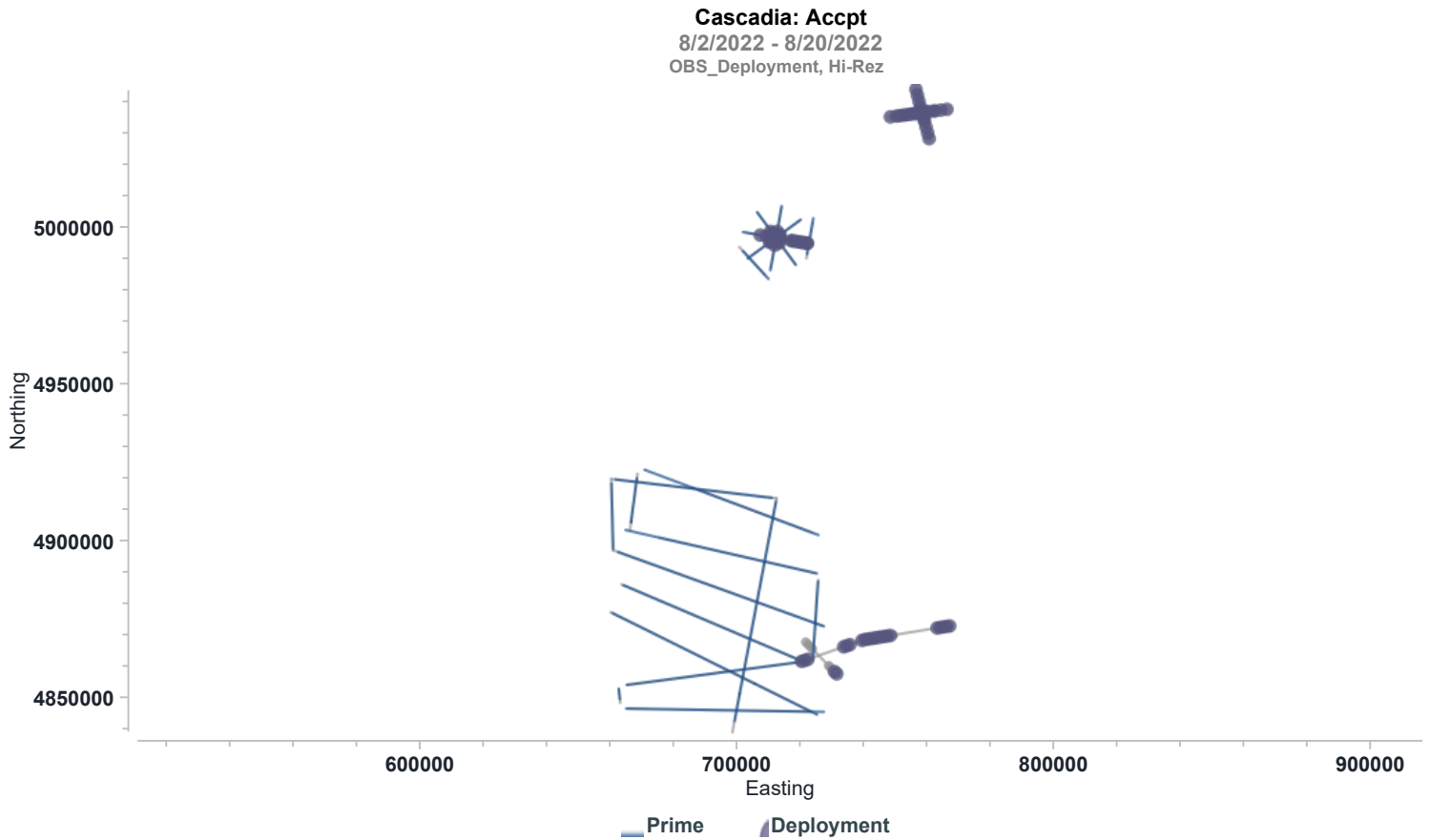
Hi-Rez

Cascadia (MGL2208) (no data for period)

| Accepted km | Day  | Week   | Month  | Project |
|-------------|------|--------|--------|---------|
| Prime       | 0.00 | 354.40 | 732.45 | 732.45  |
| Combined    | 0.00 | 354.40 | 732.45 | 732.45  |

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## Daily Comment Summaries - Daily Comments On Status of Equipment

Sat 20 Aug

### Navigation:

No Major Issues to Report

### Information Technology (IT):

No Major Issues to Report

### Acquisition (MCS):

No Major Issues to Report

### Towing and Handling (Source):

No Major Issues to Report

### General Purpose Science:

No Major issues to Report.

### Heat Probe:

No Major issues to Report.

## Daily Comment Summaries - Personnel Onboard

Sat 20 Aug

### Technical Staff On-board the Langseth

Cody Bahlau L-DEO OMO Chief Science Officer  
Josh Kasinger L-DEO OMO Chief Source Mechanic  
Brian Agee L-DEO OMO Source Mechanic  
Paul Parolski Jr.- Contract Navigator  
Mark Walker - Contract Compressor Mech

### PSO Staff On-board the Langseth

Amanda Dubuque - RPS Lead PSO  
Cassandra Frey - RPS PSO  
Ana Lira - RPS PSO  
Michelle Klein - RPS PSO  
Jimena Ortega - RPS PSO  
Martiza Martinez - RPS PSO

### Science Party On-board the Langseth

Glenn Spinelli - PI NMT  
Anne Trehu - Co-PI OSU

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Robert Harris - Co-PI OSU  
Mandy Kiger - Heat Flow Tech - OSU  
Thomas Kyrirtz - Graduate Research asst. - NMT  
Benjamin Norvell - Graduate Research asst. - NMT  
Kristin Dickerson - Graduate Research asst. - UCSC  
Danqi Jian - Graduate Research asst. - UTIG  
Robert Perrin - Graduate Research asst. - U.Calgary  
Aldiyar Mukhatzhanov - Graduate Research asst. - Rutgers  
Matt Perry - Research asst. - Planetary Science Inst.  
Ariful Islam - Graduate Research asst. - U. Nebraska  
Clara Stanbury - Research asst. - Los Alamos National Lab  
Ben Russel - Machinist - OSU  
Justin Mcloud- Engineer - OSU

## HSE Events Diary (Marcus G Langseth, )

| Category | Code | Start | End |
|----------|------|-------|-----|
|----------|------|-------|-----|

## HSE Event Period Totals - Project (Marcus G Langseth)

| Category   | Code | Day | Week | Month | Project | Proj Hours | Man Hours |
|--|------|-----|------|-------|---------|------------|-----------|
|  Meetings               | Mtgs | 0   | 12   | 46    | 46      | 1.000      |           |
|  Start-up Meeting      | StUp | 0   | 0    | 1     | 1       | 1.000      |           |
|  Toolbox Meetings      | Tbox | 0   | 12   | 45    | 45      |            |           |
|  Reports                | Re   | 0   | 0    | 8     | 8       |            |           |
|  Contractor            | Con  | 0   | 0    | 8     | 8       |            |           |
|  Task, Hazard, Control | THC  | 0   | 0    | 8     | 8       |            |           |