

## Appendix 4: 91ENDEAVOR

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1. Track plot of expedition 91ENDEAVOR in the Gulf of Maine
2. Expedition notes
3. Seismic profiling cruise track log
4. Daniel F. Belknap field book extract
5. GSCA formatted navigation (page 1 of 173 pages)
6. Seismic data inventory
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### Note:

Three profiles suffer from navigational problems:

#### 91ENDEAVOR\_ORE\_SEISMIC\_GEOPULSE\_216\_0021\_TO\_216\_1244

- When the JP2 file is displayed using the “distance” option in SEGYP2Viewer, the interval from 40 to 60 km (0325 to 0330) appears compressed

#### 91ENDEAVOR\_ORE\_SEISMIC\_GEOPULSE\_223\_0925\_TO\_223\_2037

- When the JP2 file is displayed using the “distance” option in SEGYP2Viewer, the interval from 10 to 20 km appears compressed

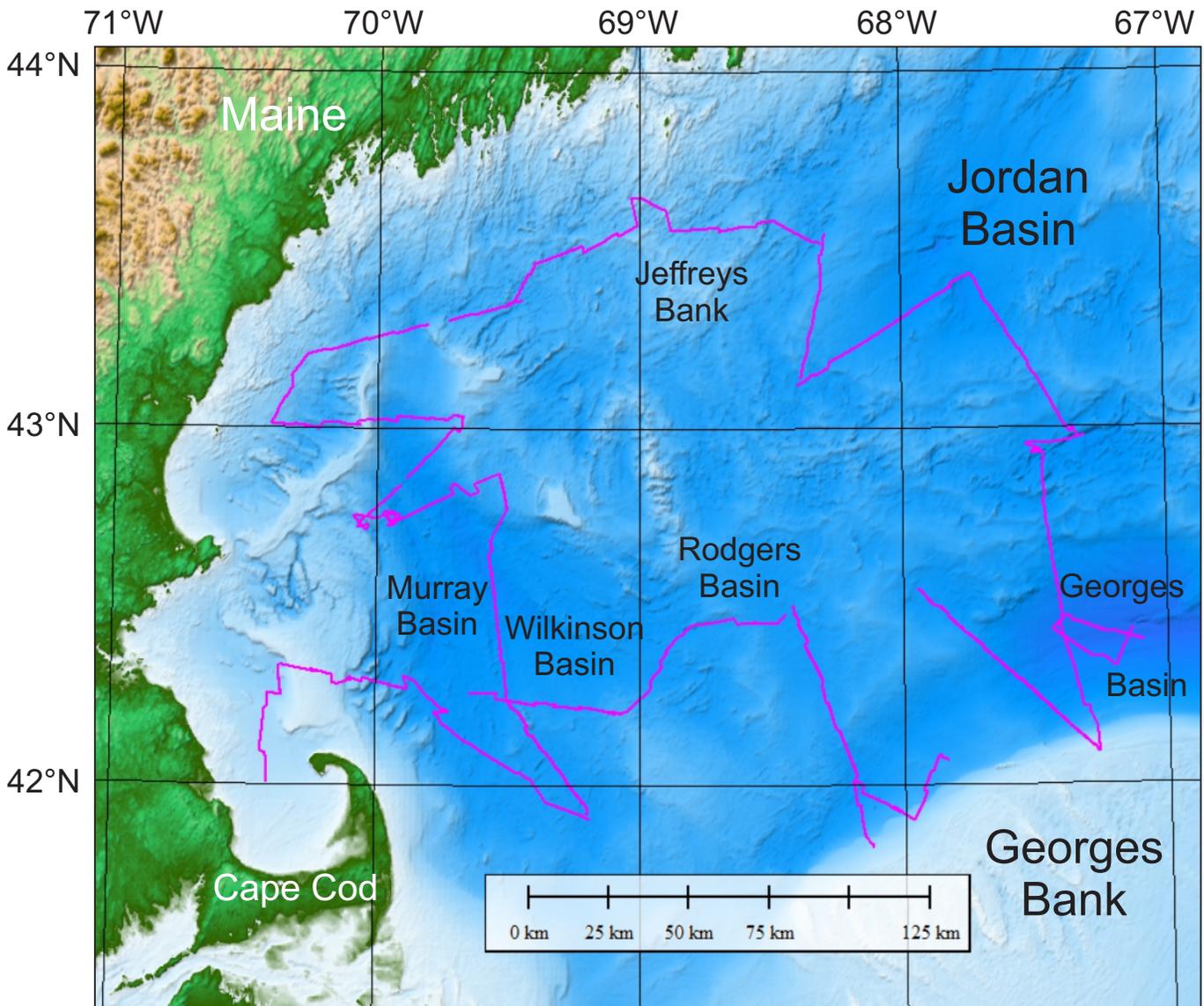
#### 91ENDEAVOR\_ORE\_SEISMIC\_GEOPULSE\_224\_1240\_TO\_224\_1602

- When the JP2 file is displayed using the “distance” option in SEGYP2Viewer, the intervals from 10 to 12 km and 32 to 34 km appear compressed

The apparent positions as recorded along these three lines clearly does not reflect the actual positions. Human intervention will be required to “smooth” the incorrect apparent positions into their more likely actual positions.

# 91ENDEAVOR

## Seismic profiles in the Gulf of Maine



## EN-226 - University of Maine Gulf of Maine Cruise 1991

Detmar Schnitker and Daniel F. Belknap, Co-PI's – NSF MG&G Grant

(compiled and corrected by DFB Sept. 2021 from logs and data rolls)

***R/V ENDEAVOR*** – University of Rhode Island, NSF UNOLS

Depart: Narragansett, RI, 08/03/91, return 08/12/91

Ship's Crew:	Master	Thomas Tyler
	Chief Mate	Everett McMunn
	Second Mate	Richard Chase
	Chief Engineer	William Appleton
	Asst. Engineer	Tim Varney
	Asst. Engineer	Eric Frazier
	Boatswain	Jack Buss
	Able Seaman	Robert Brennan
	Able Seaman	Kerry Hood
	Able Seaman	Michael Kearns
	Cook/Steward	Michael Brennan
	Cook/Messman	Christopher Moody
Technicians:	Tom Crotty	Univ. Rhode Island
	Bill Hahn	Univ. Rhode Island (on shore 401-792-6203)
	Paul Andrews	WHOI
Scientists:	Detmar Schnitker	UM – co-PI
	Daniel Belknap	UM – co-PI
	Tania Bacchus	UM – PhD candidate
	Barbara Batchelor	UM – MS Candidate
	Dan Popek	UM – MS Candidate
	Larry Reynolds	UM – MS Candidate
	Cem Giray	UM – MS Candidate
	Don Canning	UM
	Sarah Fletcher	UM
	Dawn Meisenheimer	UM
	Ellen McCray	URI graduate student
	Dora Barlaz	Packer Coll. Inst.

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## 03 August, Saturday – 215 (Day of Year)

Depart Narragansett @ 0930 EDT heading for Buzzards Bay and  
Cape Cod Canal @ 1400 EDT

**ORE Geopulse seismic profiling** Southernmost Wilkinson Basin.

Start Line EN-226-91-01 @ 1700 EDT @ 42°07.52'N; 70°13.92'W

Weather overcast, gray, breezy, fairly calm sea

## 04 August, Sunday – 216 – Rodgers Basin, Franklin Basin

End Line 01, Start Line 02 @ 0145 EDT @ 42°12.26'N; 69°03.29'W

End Line 02, Start Line 03 @ 0524 EDT @ 42°26.75'N; 68°48.04'W

Change course to 042° to search for coring site

End Line 03 @ 0845 EDT @ 42°28.80'N; 68°27.29'W

PC Piston core 91-01 – 220 m @ 10:05 EDT @ 42°28.54'N; 68°27.68'W

CTD CTD deploy 01 – 150 m only @ ~12:20 EDT @ 42°30.04'N; 68°26.04'W

Start Line EN-226-91-04 @ 12:50 EDT @ 42°30.17'N; 68°25.29'W

End Line 04 @ 22:15 EDT @ 41°49.77'N; 68°06.76'W

Start search for coring site in Franklin Basin

Search abandoned – failure of 3.5 kHz unit – continue with Geopulse

Weather overcast to rainy, breezy, choppy 6-7' seas

## 05 August, Monday – 217 - Lindenkohl Basin

Start Line EN-226-91-05 @ 00:16 EDT @ 41°55.45'N; 68°08.89'W

End Line 05 @ 08:04 EDT @ 42°35.65'N; 67°54.84'W

Start search for coring site in Lindenkohl Basin

Search abandoned – failure of 3.5 kHz unit – continue with Geopulse

Start Line EN-226-91-06 @ 09:45 EDT @ 42°32.51'N; 67°54.04'W

End Line 06, Start Line 07 @ 11:00 EDT @ 42°29.35'N; 67°45.21'W

End Line 07, Start Line 08 @ 16:27 EDT @ 42°01.08'N; 67°39.30'W

End Line 08, Start Line 09 @ 18:38 EDT @ 42°04.88'N; 67°51.66'W

End Line 09, Start Line 10 @ 20:58 EDT @ 41°53.38'N; 67°56.53'W

End Line 10 @ 23:51 EDT @ 42°00.69'N; 68°10.94'W

Weather partly overcast, gusty to 25 knts, choppy 5-7' seas

## 06 August, Tuesday – 218 – Franklin and Lindenkohl Basins

PC PC-91-02 – 228 m @ 00:00 EDT @ 42°00.84'N; 68°11.71'W

CTD CTD deploy 02 – to 200m @ 01:40 EDT @ 42°00.84'N; 68°10.07'W

PC PC-91-03 – 226 m @ 06:44 EDT @ 42°33.87'N; 67°55.22'W

CTD CTD deploy 03 – 220m @ 08:41 EDT @ 42°33.19'N; 67°56.53'W

Start Line EN-226-91-11 @ 09:16 EDT @ 42°32.58'N; 67°56.63'W  
 End Line 11, Start Line 12 @ 17:00 EDT @ 42°05.55'N; 67°16.34'W  
 End Line 12, Start Line 13 @ 21:30 EDT @ 42°27.87'N; 67°23.76'W  
 Weather clear and calm

07 August, Wednesday – 219 – Georges Basin to Crowell Basin

End Line 13 @ 00:13 EDT @ 42°23.55'N; 67°05.05'W  
 PC PC-91-04 – 365 m @ 01:40 EDT @ 42°24.41'N; 67°06:56'W  
 CTD CTD deploy 04 – to 200m @ 03:45 EDT @ 42°24.51'N; 67°06:56'W  
 PC PC-91-05 – 378 m @ 06:53 EDT @ 42°26.34'N; 67°07.83'W  
*Core 91-05 in "Georges Tower" wake, near deepest point in Gulf of Maine*  
 Start Line 14 @ 07:42 EDT @ 42°25.84'N; 67°08.42'W  
 End Line 14, Start Line 15 @ 09:04 EDT @ 42°19.71'N; 67°13.44'W  
 End Line 15, Start Line 16 @ 11:27 EDT @ 42°27.77'N; 67°23.92'W  
 End Line 16, Start Line 17 @ 17:30 EDT @ 42°55.94'N; 67°29.29'W  
 End Line 17 @ 20:40 EDT @ 42°57.10'N; 67°16.57'W  
 PC PC-91-06 – 262 m @ 22:16 EDT @ 42°56.91'N; 67°19.90'W  
 CTD CTD deploy 05 – 258 m @ 23:30 EDT @ 42°56.91'N; 67°19.90'W  
 Weather clear and calm, 1-3' seas

08 August, Thursday – 220 – Crowell Basin to Jordan Basin

Start Line EN-226-91-18 @ 00:00 EDT @ 42°59.39'N; 67°20.00'W  
 End Line 18, Start Line 19 @ 06:49 EDT @ 43°25.80'N; 67°43.84'W  
 End Line 19 @ 13:37 EDT @ 43°07.07'N; 68°24.12'W  
 PC PC-91-07 – 209 m @ 15:11 EDT @ 43°07.73'N; 68°23.08'W  
 CTD CTD deploy 06 – 209 m @ 16:47 EDT @ 43°08.29'N; 68°23.06'W  
 Start Line EN-226-91-20 @ 17:00 EDT @ 43°08:56'N; 68°23.03'W  
 End Line 20 @ 21:48 EDT @ 43°32.41'N; 68°18.00'W  
 PC PC-91-08 – 195 m @ 23:01 EDT @ 43°31.93'N; 68°17.86'W

09 August, Friday – 221 – NW Jordan Basin and westerly to Platts Basin

CTD CTD deploy 07 – to 180 m @ 00:20 EDT @ 43°31.25'N; 68°18.33'W  
 Start Line EN-226-91-21 @ 00:38 EDT @ 43°31.17'N; 68°18.64'W  
 End Line 21, Start Line 22 @ 10:47 EDT @ 43°28.00'N; 68°24.51'W  
 End Line 22 @ 12:30 EDT @ 43°20.62'N; 69°28.18'W  
 Weather clear and calm, flat seas  
 PC PC-91-09 – 186 m @ 13:23 EDT @ 43°21.40'N; 69°27.34'W  
 CTD CTD deploy 08 – 186 m @ 14:33 EDT @ 43°21.44'N; 69°26.94'W

Start Line 23 @ 15:08 EDT @ 43°21.54'N; 69°26.53'W  
 End Line 23, Start Line 24 @ 22:51 EDT @ 43°11.99'N; 69°16.33'W  
 Weather overcast, 1-3' seas building

#### 10 August, Saturday – 222 – Jeffreys Basin to Wilkinson Basin

End Line 24, Start Line 25 @ 01:15 EDT @ 43°00.58'N; 70°24.23 'W  
 Weather rain, 8' swell, 1-3' chop, seas building

End Line 25, Start Line 26 @ 08:20 EDT @ 43°01.89'N; 69°40.11'W

End 26 @ 11:44 EDT @ 42°50.63'N; 69°54.25'W

Weather driving rain, 8-10' swell with heavy chop, 30 knt winds.

Suspend ORE Geopulse due to heavy seas, deteriorating data quality

Stellwagen Basin and Bank to Wilkinson Basin

Start Line 27 @ 21:45 EDT @ 42°50.26'N; 69°54.99'W

Weather overcast, 20 knt winds, rough seas subsiding

End Line 27, Start Line 28 @ 23:31 EDT @ 42°43.61 'N; 70°04.39'W

#### 11 August, Sunday – 223 – Wilkinson Basin to Murray Basin

Weather clear and calm

End Line 28, Start Line 29 @ 04:27 EDT @ 42°50.84'N; 69°37.06'W

End Line 29, Start Line 30 @ 12:00 EDT @ 42°14.20'N; 69°29.84'W

End Line 30 @ 16:37 EDT @ 41°55.05'N; 69°11.67'W

PC PC-91-10 – 218 m @ 17:25 EDT @ 41°55.32'N; 69°11.89'W

CTD CTD deploy 09 – 218 m @ 18:30 EDT @ 41°55.32'N; 69°11.89'W

Start Line 31 @ 19:00 EDT @ 41°54.53'N; 69°11.66'W

End Line 31, Start Line 32 @ 23:36 EDT @ 42°07.55'N; 69°39.54'W

Weather clear, breezing up, seas calm

#### 12 August, Monday – 224 – S. Wilkinson Basin to Stellwagen Bank, Cape Cod Bay

End Line 32, Start Line 33 @ 02:35 EDT @ 42°16.29'N; 69°51.12'W

End Line 33 @ 08:37 EDT @ 42°20.48'N; 70°24.30'W

Start Line 34 @ 08:39 EDT @ 42°20.42'N; 70°24.54'W

End Line 34 @ 12:03 EDT @ 42°00.12'N; 70°24.96'W

End of seismic data collection

Proceed through Cape Cod Canal to Dock in Narragansett RI @ 17:30 EDT

End of Cruise

(Hurricane Bob was just 1 week later - 8/19 in Maine – a fortunate miss regarding this cruise.)

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: Gulf of Maine 1991 OPERATORS: Schwabke + Belknap  
 DATE: 8/3/91 <sup>Day 215</sup> WEATHER: overcast, calm  
 LOCATION: Narragansett ~~Kingston~~ Rhode Island - URI Bayside Laboratory  
 VESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse PAGE: 1 OF 46

Local TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
1000	(800)	Depart Narragansett RI	
1315		Prepare Piston Core: Feego Fitting	
			Max tension 9k lbs settled
			to 6400, winch tensioner - 5k
1400		Cape Cod Canal	
1630	42° 07.52 70° 13.92	Complete Rigging of Piston Core	
1645	42° 09.60' 70° 10.60'		
1700	42° 11.70' 70° 07.18'		S.O.L. EN-91-1
1835	41° 31.57' N 79° 0.43' W	Start geopulse running 12 kh 220m	Windbox freeze on "SAIL" - these are inaccurate
1845	41° 31.57' N 79° 0.37' W		
<del>1850</del> 1850	42 16.45 N 69 50.90 W	Z = 227 m	
1900	42 16.32 N 69 49.62 W	Z = 230 m, record on chart	
1915	42 16.110 N 69 47.710 W	Z = 241 m, start TAPE 1	
1930	42 15.880 N 69 45.790 W	Z = 246 m record on chart	
1945	42 15.660 N 69 43.860 W	Z = 242 m	
2000	42 15.440 N 69 41.970 W	Z = 244 m record on chart	
2015	42 15.200 N 69 40.180 W	Z = 245 m	
2030	42 15.000 N 69 39.330 W	Z = 244 m record on chart	
2045	42 14.880 N 69 36.610 W	Z = 240 m	start tape #2 @ 20:48
2100	42 14.790 N 69 34.840 W	Z = 227 m record on chart	
2115	42 14.640 N 69 33.080 W	Z = 232 m	
2130	42 14.510 N 69 31.300 W	Z = 225 m record on chart	

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991

OPERATORS: Fletcher, Barlay, Payne

DATE: 3 Aug 91 (Saturday) WEATHER: calm, overcast

LOCATION: 42° 14.51' N, 69° 31.33' W

Southern Wilkinson Basin

VESSEL: R/V Endeavor

SEISMIC SYSTEM: Geopulse

PAGE: 2 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
21 45	<sup>80.0</sup> 42 14 38.0 N 69 29 49.0 W	Z = 223 m	
22 00	42 14 31.0 N 69 27 73.0 W	Z = 214 m	
22 15	12 14 21 69 26 91	Z = 205 m	start tape # 3 @ 22:21:53
22 30	42 14.07 69 24.21	Z = 205 m	
22 45	42 13.94 69 22.48	Z = 207 m	
23 00	42 13.82 69 20.79	Z = 215 m	
23 15	42 13.65 69 19.04	Z = 214 m	
23 30	42 13.51 69 17.41	Z = 220 m	
23 45	42 13 38 69 15 71	Z = 203 m	start tape # 4 23:56
00 00	42 13 25 69 14 12	Z = 197 m	
00 15	42 13.10 69 12.36	Z = 194 m	
00 30	42 12.98 69 10.79	Z = 193 m	
00 45	42 12.84 69 9.17	Z = 187 m	Rodgers Basin
01 00	42 12.75 69 7.67	Z = 176 m	✓
01 15	42 12.6 69 6.17	Z = 159 m	Start tape # 5 0129
01 30	42 12.47 69 4.73	Z = 162 m	
01 45	42 12.28 69 3.29	Z = 160 m	E.O.L. EN-91-1
01 48	42 12.24 69 2.96	Z = 162 m	S.O.L. EN-91-2
02 00	42 12.04 69 2.14	Z = 165 m	
02 15	42 11.11 69 1.04	Z = 178 m	
02 30	42 10.14 69 59.93	Z = 180 m	

84/91

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: Gulf of Maine 1991 OPERATORS: Poppek, Batchelor, Canning, Bacchus  
 DATE: August 4, 1991 (Sun) WEATHER: Foggy, Warm  
 LOCATION: 42 15.28N 68 59.78W Time: 0230  
 VESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse PAGE: (3) OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0245	42 16.21 68 58.82	Z = 194 m	
0300	42 17.300 68 57.740	Z = 203 m	Start Tape T-6 0303
0315	42 19.380 68 56.620	Z = 210 m	
0330	42 19.40 68 55.50	Z = 212 m	
0337	42 19.90 68 54.94		move to avoid traffic
0345	42 20.48 68 55.16	Z = 214 m	
0400	42 21.590 68 54.820	Z = 208 m	
0415	42 22.50 N 68 53.69 W	Z = 216 m	
0430	42 23.43 N 68 52.48 W	Z = 215 m	
0438		START TAPE # 7	
0445	42 24.33 N 68 51.23 W	Z = 215 m	seastate = 3 ft. swell
0500	42 25.21 N 68 50.02 W	Z = 222 m	[switched from "signal" to "tape" output to audio tape at 0504]
0515	42 26.11 N 68 48.52 W	Z = 225 m	
0524:30	42 26.750 N 68 48.040 W	Z = 226 m	EOL EN-91-2 / SOL EN-91-3
0525	42 26.77 N 68 47.99 W	1	
0530	42 26.89 N 68 47.52 W	Z = 187 m	
0545	42 26.98 N 68 45.87 W	Z = 211 m	
0600	42 26.98 N 68 44.20 W	Z = 214 m	
0612	42 26.94 68 42.42	START TAPE # 8	
0615	42 26.94 N 68 42.42 W	Z = 207 m	
0630	42 26.91 N 68 40.69 W	Z = 205 m	

Day 216

## SEISMIC PROFILING CRUISE TRACK LOG

Meisenheimer

PROJECT: GULF OF MAINE 1991 OPERATORS: Belknap, Mccray, Gray,DATE: August 4, 1991 WEATHER: cloudy, 18.6°C, winds 15 knotsLOCATION: 0637 hours, 42 26.89 N 68 38.98 W (Line 91-3)VESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse PAGE: 4 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0645	42 26.89 N 68 38.98 W	Z = 205 m	Continue line 91-3
0700	42 26.92 N 68 37.41 W	Z = 202 m	
0715	42 27.01 N 68 35.93 W	Z = 200 m	
0730	42 27.10 N 68 34.38 W	Z = 195 m	
0745	42 27.15 N 68 32.81 W	Z = 203 m	
0746		START TAPE #9	
0800	42 27.17 N 68 31.16 W	Z = 210 m	
0815	<del>42° 20.35'</del> <del>68° 08.33'</del>	Z = 213 m <del>ERROR</del>	42° 28.83' 68° 27.350' W
0819	<del>42° 27.76</del> <del>68° 28.31</del>	Pass core site 1 course change	E.O.L. # EN-91-3 new course 042° Z 42° 28.49' 68° 27.29'
0820	42° 27.76 68° 28.31		Manoeuvring for Core site
0835	42° 28.13 68° 28.00	Passed ideal location	
0840	42° 28.48 68° 27.64	<del>XXXXXXXXXX</del>	
0845	42° 28.80 68° 27.29	tells bridge to stop, turn around to go back to 0835 position	
0846	<del>XXXXXXXXXX</del>	stop for geopulse retrieval	
0850	42° 28.93 68° 27.11	~ 220 m	
0900	42° 29.06 68° 27.09		09:05 3.5 kHz
0915	42 28.88 68 27.33	Z = 218 m	sitting still waiting to start core.
0930	42 28.08 68 27.97		
0940	42 28.03 68 27.94		
0952	42 28.24 68 27.75	Z = 218 m	manoeuvring ship back into position to get out of valley drifted into.
0958.50	42 28.42 N 68 27.66 W	Z = 220 m	corer down

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: Gulf of Maine 1991 OPERATORS: Barlaz, Fletcher, Reynolds, Shuttler  
 DATE: August 4, 1991 (Sun) WEATHER: overcast light rain  
 LOCATION: 0958- 42° 28.42' N 68° 27.66' W Rodgers Basin  
 VESSEL: Endeavor SEISMIC SYSTEM: Geopulse PAGE: 5 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
10:05:35	42° 28.54' N 68° 27.68' W	outer trips	Paul Sula 136 when hit - straight shot - surprising
10:17:51	42° 28.74' N 68° 27.68' W	surface-stopped; J-frame back up	
10:30	42° 28.89' N 68° 27.60' W	Z = 220 m	
10:45	42° 29.05' N 68° 27.48' W	Z = 222 m	10:44:45 core on board CORE # 1
11:00	42° 29.18' N 68° 27.25' W	Z = 222 m	
11:15	42° 29.380' N 68° 27.270' W	Z = 221 m	
11:30	42° 29.470' N 68° 27.170' W	Z = 222 m	
11:45	42° 29.650' N 68° 26.750' W	Z = 220 m	
12:00	42° 29.80' N 68° 26.40' W	Z = 218 m	
12:15	42° 30.01' N 68° 26.24' W	Z = 210 m	
12 ?	42° 30.04' N 68° 26.04' W		CTD 301
12:40	42° 30.35' N 68° 25.40' W		Deploy seismic gear.
12:50	42° 30.17' N 68° 25.29' W		Start seismic SOL EN 91-4
13:00	42° 29.66' N 68° 24.96' W	Z = 205	Start tape #10 1310
13:15	42° 28.68' N 68° 24.43' W	Z = 210	
13:30	42° 27.52' N 68° 23.79' W	Z = 210	
13:45	42° 26.40' N 68° 23.23' W	Z = 205	
14:00	42° 25.26' N 68° 22.78' W	Z = 206	
14:15	42° 24.27' N 68° 22.28' W	Z = 202	
14:30	42° 23.22' N 68° 21.73' W	Z = 203	
14:45	42° 22.17' N 68° 21.17' W	Z = 205	Start tape # 11 1444

## SEISMIC PROFILING CRUISE TRACK LOG

50/100

PROJECT: GDM 1991 NSFOPERATORS: Bocchus, Batchelor, Canning, PopeckDATE: 8/4/91 (Sunday) WEATHER: Overcast, rainy seas - roughLOCATION: Rodgers Basin/Stout Swell → Franklin BasinVESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse PAGE: 6 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
1500	42 21.23 68 20.63	Z = 205	
1515	42 20.34 68 20.17	Z = 206	
1530	<del>42 41 31.57</del> <del>68 70 49.03</del>	42 19.4 68 19.63 Z = 205	1531 Loran messed up
1545	42° 18.57 68° 19.16	Z = 205	
1550	42° 18.25 68° 18.96	Z = 205	CC for new point L
1600	42° 17.70 68° 18.66	Z = 203	
1615	42° 17.31 68° 18.41	Z = 209	[Debris on catamaran (box from on deck)]
1630	42° <del>17.31</del> <del>16.98</del> 68° <del>18.41</del> 17.81	Z = 208 <sub>m</sub>	← 1618 START TAPE #12
1645	42° 15.44 68° 17.57	Z = 207	
1700	42° 14.51 68° 17.21	Z = 201	
1715	42° 13.52 68° 16.81	Z = 199	
1730	42° 12.43 68° 16.36	Z = 200	
1745	42° 11.29 68° 15.89	Z = 200	
1752		START TAPE #13	
1800	42° 10.05 68° 15.39	Z = 200	
1815	42° 8.92 68° 14.87	Z = 198	
1830	42° 7.84 68° 14.44	Z = 202	
1845	42° 6.99 68° 14.10	Z = 201	
1900	42° 5.54 68° 13.49	Z = 209	
1915	42° 4.21 68° 12.95	Z = 220	
1930	42° 2.96 68° 12.38	Z = 225	

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF OPERATORS: Belknap, Giray, Meisenheimer  
 DATE: 8/4/91 (Sun) WEATHER: overcast, rainy Seas choppy  
 LOCATION: Franklin Basin  
 VESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse PAGE: 7 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
19:37		START TAPE #14	
1945	42° 1.65' N 68° 11.73' W	Z = 230 m	some will be missing on tape. Power on recorder was turned off at some point
2000	<del>42° 05.16' N</del> 42° 0.49' N 68° 11.21' W	Z = 233 m	
2015	41° 59.30' N 68° 10.60' W	Z = 230 m	
2030	41° 58.14' N 68° 10.10' W	Z = 226 m	
2045	41° 56.84' N 68° 09.49' W	Z = 218 m	restarted tape #14 side A * (tape stopped on side A) tape continued @ ~2047
2100	41° 55.66' N 68° 09.04' W	Z = 208 m	
2115	41° 54.42' N 68° 08.52' W	Z = 197 m	
2130	41° 53.23' N 68° 08.09' W	Z = 182 m	START TAPE T15 @ 21:41:53
2145	41° 51.94' N 68° 07.58' W	Z = 157 m	
22:00	41° 50.87' N 68° 07.16' W	Z = 115 m	
2215	41° 49.77' N 68° 06.72' W	Z = 86 m	22:26 stopped for EOL EN 91-4
2229	41° 48.87' N 68° 06.40' W	Z = 75 m @ 22:26	Sat 41° 49.18' N Now 68° 07.06' W
2245	41° 49.31' N 68° 06.66' W	Z = 70 m	
23:02	41° 50.38' N 68° 07.10' W	Z = 120 m	
23:15	41° 51.29' N 68° 07.50' W	Z = 147 m	
23:30	41° 52.37' N 68° 07.90' W	Z = 170 m	
2345	41° 53.50' N 68° 08.31' W	Z = 185 m	
0000	41° 54.61' N 68° 08.84' W	Z = 198 m	0015 41 55.39 12 KHz 68 08.95 only
0016	41 55.45 68 8.89	deploy geopulse	restart tape #15 0017

Monday  
5 Aug

SOL EN 91-5

Postscript:  
 Abandoned coring site attempt because 3.5 kHz path ker not working properly.

# Day 217

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF OPERATORS: Bacchus Batchels, Conroy, Peack  
 DATE: 8/5/91 (Monday) WEATHER: foggy, rough sea  
 LOCATION: Franklin Basin

VESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse PAGE: 8 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0030	41 56.30 68 08.55	Z = 207	
0045	41 57.31 68 8.16	Z = 210	12 kHz stopped @ 0050 Loff and on →
0100	41 58.35 68 07.74	Z = X	12 kHz not operating Start tape 16 0107
0115	41 59.36 68 7.35	0109 restart 12 kHz	Z = 219
0130	42 00.44 68 6.86	Z = 204 m	all systems operating 12 kHz 3.5 tape
0145	42 01.62 68 6.42	Z = 205 m	
0200	42 02.830 68 5.970	Z = 217 m	off w/ 3.5 kHz
0215	42 04.11 68 05.48	Z = 202	
0230	42 05.40 68 05.05	Z = 197	0240 Start tape #17
0245	42 06.71 68 04.65	Z = 212	
0300	42 08.08 68 04.21	Z = 216	
0315	42 09.45 68 03.75	Z = 218	
0330	42 10.80 68 03.28	Z = 210	
0345	42 12.09 68 02.78	Z = 203	
0400	42 13.41 68 02.25	Z = 193	
0415	42 14.75 68 01.79	Z = 199	
0414		START TAPE #18	
0430	42 16.07 68 01.32	Z = 189	
0445	42 17.47 68 00.88	Z = 177	
0500	42 18.85 68 00.41	Z = 177	
0515	42 20.23 67.59.91	Z = 171	

## SEISMIC PROFILING CRUISE TRACK LOG

Meisenheimer

PROJECT: GOM 1991 NSF OPERATORS: Belknap, Messay, Giroux

DATE: <sup>(month)</sup> August 5, 1991 WEATHER: Topy, 5-7' swell 1-3' chop

LOCATION: 0517 hrs: 42 20.46 N 67.59.57 W Linden Kohl Basca

VESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse PAGE: 9 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0530	42 21.58 67 59.34	Z = 170 m	continuing Line 5
0545	42 22.94 67 58.79	Z = 174 m	
0548		START TAPE #19	
0600	42 24.30 67 58.20	Z = 177 m	
0615	42 25.167 67 57.57	Z = 182 m	
0630	42 27.10 67 57.01	Z = 200 m	
0645	42 28.45 67 56.44	Z = 210 m	
0700	42 29.83 67 56.02	Z = 224 m	
0715	42 31.22 67 55.61	Z = 225 m	
0722		START TAPE #20	
0730	42 32.63 67 55.16	Z = 222 m	
0745	42 33.98 67 54.92	Z = 227 m	0741 - MARK (missed w/ LORAN 500)
0800	42 35.30 67 54.78	Z = 222 m	
0804	42 35.65 N 67 54.84 W	Z = 221 m	<del>station</del> station of seismic gear. EOL EN 91-5
<del>0815</del>			
0814			station search w/ 3.5 kHz profiling
0815	42° 35.38' N 67° 54.74' W	Z = 223 m	
0830	42° 34.32' N 67° 54.89' W	Z = 226 m	
0845	42° 33.24' N 67° 55.20' W	Z = 225 m	
0846:20	42° 33.18' N 67° 55.23' W		
0900	42° 33.40' N 67° 56.29' W	Z = 230 m	

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: COF 1991 NSF OPERATORS: Fletcher, Barlow, Reynolds,  
 DATE: 5 Nov 91 (Monday) WEATHER: (overcast) clearer, 5-7' seas, 1-3' chop, skitter  
 LOCATION: @ 0900 - 42° 33' 45" N, 67° 56.29' W Linderkohl Basin  
 VESSEL: R/V Endeavor SEISMIC SYSTEM: geopulse PAGE: 10 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0918	42° 33.19' N 67° 55.05' W	Z = ?	12 kHz fail
0930	42° 33.05' N 67° 55.01' W	Z = 220 m	
0937		We are turning around to try to take core from location passed over last night. Abandoning this attempted coring site because 3.5 kHz profiler isn't working properly. It has not been working properly for about 12 hours.	
0944		SOLEN-91-6 @ 0945	ADD 5m depth to @ measurement through S/S/19 1745 hours.
0941		side B tape #20 started	
0945	42° 32.51' N 67° 54.04' W	Z = 215 m	
1000	42° 31.82' N 67° 52.25' W	Z = 225 m	↓
1015	42° 31.17' N 67° 50.46' W	Z = 220	
1028		start of tape 21	
1030	42° 30.50' N 67° 48.69' W	Z = 223 m	
1045	42° 29.86' N 67° 46.93' W	Z = 235 m	
1100	42° 29.35' N 67° 45.21' W	Z = 235 m	11:01 changeover to SOLEN-91-6
1115	42° 27.87' N 67° 44.79' W	Z = 206 m	SOLEN-91-7
1130	42° 26.35' N 67° 44.57' W	Z = 210	
1145			
1200	42° 23.32' N 67° 44.10' W	Z = 200 m	1202 start tape 22
1215	42° 21.90 67° 43.86	Z = 200 m	
1230	42° 20.52 67° 43.59	Z = 206 m	
1245	42° 19.20 67° 43.33	Z = 216 m	
1300	42° 17.92 67° 43.02	Z = 223 m	

## SEISMIC PROFILING CRUISE TRACK LOG

Canning

PROJECT: GOM 1991 NSF OPERATORS: Bacchus, Britcher, Popeck  
 DATE: August 5, 1991 WEATHER: Partly sunny, 1-3 ft chop + 5-7' seas  
 LOCATION: Franklin Basin (W part of George's Basin)  
 VESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse / 12 kHz PAGE: 11 OF 46

TIME	LORAN - C	OTHER NAVIGATION Z = (m)	COMMENTS
1315	42 16.72 67 42.64	Z = 221	
1330	42 15.52 67 42.24	Z = 218	1336 Start tape #23
1345	42 14.28 67 41.90	Z = 211	
1400	42 13.02 67 41.56	Z = 220	
1415	42 11.75 67 41.26	Z = 190	
1430	42 10.47 67 40.97	Z = 182	
1445	42 09.22 67 40.64	Z = 180	
1500	42 08.00 67 40.37	Z = 179	
1515	42 06.75 67 40.14	Z = 174	1510 Start tape #24
1530	42 05.48 67 39.91	Z = 174	
1545	42 04.28 67 39.72	Z = 162	
1600	42 03.17 67 39.53	Z = 145	
1615	42 02.06 67 39.41	Z = 161	
1627	42 01.08 67 39.30	<del>88</del>	CHANGE OF COURSE EOL EN-91-7 SOL EN-91-8
1630	42 00.87 67 39.139	Z = 60	
1645	42 01.04 67 40.76	Z = 72	1644 START TAPE #25
1700	42 01.71 67 42.31	Z = 95	
1715	42 02.16 67 43.70	Z = 152	
1730	42° 02.60 67° 45.12	Z = <del>147</del> 168	
1745	42 03.07 67 46.56	Z = <del>178</del> <del>183</del> 178	ADD 5m depth to @ measurement using 12 kHz
1800	42 03.52 67 47.89	Z = 192 (corrected)	

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: Gom 1991 NSF OPERATORS: Belknap, McCray, Giray,

Meisenheimer

DATE: August 5, 1991 WEATHER: Partly sunny! Seas 5-7 ft, less chopLOCATION: Franklin Basin: 1810 42 03.86 N and 67 48.91 WVESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse r 12kHz PAGE: 12 OF 46

TIME	LORAN - C	OTHER NAVIGATION Z in (m)	COMMENTS
1815	42 04.99 67 49.27	Z = <del>195m</del> 195m	STOPPED GEOPULSE, change paper & stylus
1819		START TAPE # 26	
1820		GEOPULSE RECORD RESUMED	
1830	42 04.51 67 50.74	Z = <del>195m</del> 201m	
1838	42 04.88 67 51.66		EOL EN 91-8
1845	42 04.71 67 52.28	Z = 206 m	SOL EN 91-9
1900	42 03.50 67 52.86	Z = 195 m	
1915	42 02.34 67 53.34	Z = 190 m	
1930	42 01.13 67 53.75	Z = 187 m	
1945	41 59.90 67 54.15	Z = 174 m	
1952		START TAPE # 27	2040 course
2000	41 58.58 67 54.58	Z = 180 m	
2015	41° 57.21 N 67° 54.96 W	Z = 162 m	
2030	41° 55.89 67° 55.47	Z = 108 m	
2045	41° 54.54 67° 56.00	Z = 88 m	
2058	41 53.38 67 56.53	Z = 78	EOL - 01 - end of line 09 SOL EN 91-10 Change course to line 10
2100	41 53.29 67 56.65	Z = 77 m	
2115	41 53.88 67 57.91	Z = 85 m	
2127	<del>41 53.88 67 57.91</del>	Start tape # 28	
2130	41 54.52 67 59.13	Z = 105 m	
2145	41 55.23 68 00.33	Z = 112 m	

SEISMIC PROFILING CRUISE TRACK LOG

EOL EN91-10

PROJECT: 60M 1991 NSF

OPERATORS: Smittiger, Reynolds, Hetchey, Barkley

DATE: August 5, 1991 WEATHER: partially clear w/ a few stars

LOCATION: 41°55.23 68°00.33

VESSEL: Endeavour

SEISMIC SYSTEM: Geopulse + 12kHz

PAGE: 13 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
2200	41 58 88 ? 68 01 52	Z = 175m	seems to be a problem
2206	41° 56.12 68° 02.02		Plotted point
2215	41° 56.52 N 68° 02.86 W	Z = 180m	
2230	41° 57.17 68° 04.15	Z = 193m	
2245	41° 57.85 68° 05.51	Z = 208m	
2300	41° 58.50 N 68° 06.83 W	Z = 215m	Tape #29 started
2315	41° 59.17 N 68° 08.22 W	Z = 222m	
2330	41° 59.85 N 68° 09.60 W	Z = 230	
2345	42 00 55 68 11 05	Z = 230	
2351	42° 00.69', 68° 10.94'		EOL EN91-10 end of seismic line in preparation for core 2
0000	42° 00.84' N 68° 11.71' W	Z = 228m	CORE 2
0040	42° 00.65' N 68° 11.06' W		Core #2 on board at surface (pilot gravity)
00:56:23			Core #2 (piston covered) on board.
0100	42° 00.72' N 68° 10.81' W	Z = 229m	
0141	42° 00.84' N 68° 10.07' W		CTD down - going down to 200m
0200	42° 00.81' N 68° 09.76' W	Z = 230m	
0208	42° 00.78' N 68° 09.65' W		CTD <sup>-02</sup> retrieved
0230	42 02 80 68 13 30	Z = 218m	Deadhead to next core site
0300	42 07.56 68 06.28	Z = 206m	
0315	42 09.93 68 05.24	Z = 205m	
0330	42 68	Z = 194m	Core rigged at 0350

ties Aug 91

# Day 218

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF OPERATORS: Meisenheimer, Giray, Belknap

DATE: Aug 6, 1991 (Tue) WEATHER: Partially cloudy Fair

LOCATION: 42° 16.48'N 68° 01.79'W Lindenkohl Basin

VESSEL: Endeavor SEISMIC SYSTEM: Geopulse + 12Khz PAGE: 14 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0400	42 16.78 68 01.25	Z = 175 m	
0415	42 19.21 68 00.02	Z = 175 m	
0430	42 21.35 67 57.92	Z = 176 m	
0445	42 23.70 67 56.90	Z = 178 m	Note No Geopulse
0500	42 26.18 67 56.48	Z = 193 m	Date with 09:12
0515	42 28.67 67 56.07	Z = 218 m	
0530	42 31.14 67 55.69	Z = 227 m	
0545	42 33.51 67 55.13	Z = 225 m	
0550:50	42 34.39 67 54.90	making turn to core <sup>23</sup> site	
0600	42 33.86 67 55.10	Z = 226	
0637	42 33.81 N 67 55.18 W	Zero wire; start descent	
0644	42 33.87 67 55.37	Core hit bottom (193 m)	91-91-03
0654	42 33.83 67 55.30	Core Surfaced	
0806	42 33.39 N 67 56.05 W	Z =	Stationary
08 <sup>22</sup> <del>08</del>		<del>CTD</del> in J frame having problems	
0833	42 33.13 N 67 56.18 W	Z = 230 m	
0841	42 33.19 67 56.53	-	CTD in -
0900	42 33.05 N 67 56.25 W	Z = 220 m	CTD aboard @ 0902
0908			launching <sup>catamaran</sup> geopulse
0912		SOL EN-91-11	
0918	42 32.58 N 67 55.63 W	<del>42 32.5</del> Z = 223 m	

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF

OPERATORS: Barlag, Fletcher, Reynolds *Schmittke*

DATE: 6 Aug 91 Tues WEATHER: clear, calm sea (actually - some clouds)

LOCATION: 42° 32.58' N, 67° 55.63' W, Linderkohl Basin

VESSEL: ENDEAVOR SEISMIC SYSTEM: Geopulse + 12KHz PAGE: 15 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0916		tape #30 started	
0930	42° 31.81' N 67° 54.42' W	Z = 225 m	
0945	42° 30.98' N 67° 53.17' W	Z = 215 m	
1000	42 30.07 67 51.85	Z = 115	
1015	42 29 12 67 50 49	Z = 225	
1030	42 28.15 67 49.11	Z = 225	
1045	42 27 15 67 47 73	Z = 220	
1049	42 26 88 67 47 34		Tape # 31 started reversed 1134
1100	42 26 18 67 <del>42 52</del>	Z = 207	<del>Z</del> error
1115	42 25.22 67 44.90	Z = 210	
1130	42 24.30 67 43.64	Z = 215 m	
1145	42 23 40 67 42 33	Z = 222 m	
1200	42 22 52 67 41 08	Z = 233 m	
1215	42 21.61 67 39.76	Z = 237 m	
1224			Begin Tape - T 32 Side A Reversed 1=10
1230	42 20.80 67 38.50	Z = 242 m	
1245	42 20.04 67 37.27	Z = 250 m	
001300	42 19.27 67 36.04	Z = 252 m	
1315	42 18.53 67 34.84	Z = 252 m	
1330	42 17.73 67 33.56	Z = 267 m	
1345	42 16.86 67 32.21	Z = 267 m	

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF OPERATORS: Backhus, Batchelor, Canning, Pope,  
 DATE: 6 Aug 1991 WEATHER: Clear Fair, calm sea (1-3 ft.)  
 LOCATION: 42 16.84 N 67 32.15 W  
 VESSEL: Endeavor SEISMIC SYSTEM: Geopulse+12KHz PAGE: 16 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
1400	42 16.03 67 31.11	Z = 270 m	Tape 33 started → 1=50 Reverse = 2=43
1415	42 15.09 67 29.81	Z = 268 m	
1430	42 14.08 67 28.47	Z = 255 m	
1445	42 13.11 67 27.20	Z = 235 m	
1500	42 12.23 67 25.90	Z = 233 m	
1515	42 11.31 67 24.53	Z = 226 m	
1530	42 10.31 67 23.21	Z = 190 m	Tape 34 started → 3=32
1545	42 09.32 67 21.92	Z = 175 m	
1600	42 08.49 67 20.71	Z = 140 m	
1615	42 07.71 67 19.50	Z = 95 m	
1630	42 06.86 67 18.38	Z = 74 m	(Note layout of till at Georges Bank)
1645	42 06.17 67 17.19	Z = <del>108</del> 58 m	
1700	42 05.55 67 16.34	Z = 50 m	EOL - 91-11 Start line 12
→ 1706			1700 - started Tape 35
1715	42 06.78 67 16.65	Z = 70 m	
1730	42 07.89 67 17.09	Z = 93 m	
1745	42 07.02 67 17.53	Z = 144 m	(Red Gibson bank margin)
1800	42 10.27 67 18.09	Z = 170 m	
1815	42 11.60 67 18.61	Z = 205 m	
1830	42 12.80 67 19.09	Z = 221 m	
1845	42 13.88 67 19.49	Z = 241	
1842			Tape 46 started

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF OPERATORS: Belknap, Meisenheimer, Giray  
 DATE: 6 Aug. 1991 (Tues) WEATHER: Sunny, Seas Calm (1-3ft)  
 LOCATION: Georges Basin  
 VESSEL: Endeavor SEISMIC SYSTEM: Geopulse +12kHz PAGE: 17 OF 46

old  
2 kHz  
nop.

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
1900	42° 15.03 67° 19.88	Z = 255 m	
1915	42° 16.20 67° 20.22	Z = 274 m	
1930	42° 17.36 67° 20.67	Z = 284 m	
1945	42° 19.58 67° 20.99	Z = 292 m	
2000	42° 19.77 67° 21.27	Z = 300 m	
2008	42 20.46 67 21.52	change GEOPULSE TO .33s sweep	
2015	42° 21.04' 67 21.74'	Z = 265 m?	12K2 inoperative
2036		start tape #37	"
2030	42° 22.53 67° 22.32	Z = 300 m?	"
2045	42 23.92 67 22 71	Z = 295 m?	"
2100	42 25.24 67 23.28	Z = 300 m?	"
2115	42° 26.58' N 67° 23.57' W	Z = 330 m	12K2 ON LINE
2129	42 27 80 67 23 94	starting to turn to start line #13	
		EOL EN-91-12, SOL EN-91-13	
2130	42 27.87 67 23.76	Z = 323 m	
2145	<del>42 27.88</del> 42 27.85 → 67 22.42	Z = 325	
2208	42° 27.47 67° 20.77	Z = 334	Approximately 2149 Tape #38 started
2215	42° 27.09 67° 19.03	Z = 339 m	
2220	42 26.95 67 18.49	pull in geopulse to clean	
2225	42 26.90 67 18.17	put back in water	
2230	42 26.76 67 17.71	Z =	

## SEISMIC PROFILING CRUISE TRACK LOG

Aug 7 = Day 219

PROJECT: GOM 1991 NSFOPERATORS: Fletcher, Barlow, Shmitzer, ReynoldsDATE: 6 August 1991WEATHER: fairly clear, some stars, calm seasLOCATION: 42° 26.76 67° 17.71VESSEL: EndeavorSEISMIC SYSTEM: Geopulse 12 kHz PAGE: 18 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
2245	42° 26.35 67° 10.04	M=348	
2200	42° 25.93 67° 14.26	Z=353	
2315	42 25 44 67 12 42	Z=358	
2326	42 25 10 67 11 02	start tape #39	
2330	42° 24.89 67° 10.61	Z=362 m	
2345	42° 24.53 67° 08.68	Z=367 m	
0000	42° 23.95' N 67° 06.75' W	Z=370 m	00:13 42 23 55 67 05.05
0013	42 23.55 67 05.05	Z=335	EOL 13 off geopulse
0030	42 23. 71 67 04. 45	Z=360 m	
0045	42 24. 09 67 06. 13	Z=365 m?	
0054	42 24.22 67 07.23	slow for rigging	
0106	42° 24.22' N 67° 07.23' W	Z=365 m core over side	CORE #4
0126	42° 24.41' N 67° 06.90' W	piston cores down	
01:39:35	42° 24.51' N 67° 06.56' W	trip, pull-out	PC-91-04
01:58:35	42° 24.49' N 67° 06.21' W	core #4 at surface - pilot gravity core	
02:28:43		core #4 on board (pilot core + piston core)	
		(core #4 bent at 2nd barrel)	
		(also minor bends in 4 <sup>th</sup> and 5 <sup>th</sup> (?) barrels)	
02:45	42° 24.49' N 67° 06.21' W	Z=367 m	02:46 12 kHz stopped (others too)
03:45:20	42° 24.49' N 67° 06.21' W		CTD DOWN
03:46		12 kHz started again	

~~(CTD down twice)~~Wed  
7 Aug 91

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF OPERATORS: ~~Wynn~~ Fletcher, Barlaz, others  
 DATE: 8/19/91 wed WEATHER: calm seas  
 LOCATION: 42° 24.48' N, 67° 06.21' W Georges Basin  
 VESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse/12KHz PAGE: 19 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
03:56	<del>42° 24.49' N 67° 06.21' W</del>	<del>CTD down again</del>	
04:00	<del>42° 24.49' N 67° 06.21' W</del>	<del>Z=367m</del>	
04:02:20		<del>(CTD back up)</del> CTD up	
04:18:48		CTD on board	
04:16	<del>42° 24.49' N 67° 06.21' W</del>	<del>Z=366m</del>	
0419		Geopulse 12khz stopped while on station	
0435	<del>42° 24.49 67° 06.21</del>		
0445		start 3.5 khz search for <b>P.C. 5</b> station	
0600	<del>42° 24.49 67° 06.21</del>	Z=	Frozen Loran
0606	<del>42° 26.31 N 67° 08.250 W</del>		
0607	<del>42° 26.31 N 67° 08.27 W</del>		Crane position
0617	<del>42° 26.33 67° 07.97</del>		
0632	<del>42° 26.27 67° 07.93</del>		start deploying PC 5
0637	<del>42° 26.31 67° 07.83</del>	Z= 378m	piston core over side / Geopulse 12khz started
0643	<del>42° 26.32 67° 07.83</del>		piston core starting descent Z=378m
0653	<del>42° 26.34 67° 07.83</del>		pull out tension = 4.5 tons / wire out 338m Trip + bring up <b>PC-91-05</b> Z=378m
0708	<del>42° 26.23 67° 07.97</del>		core at surface
0720	<del>42° 26.10 67° 08.09</del>		3.5 khz shut off / piston core <sup>55</sup> in bucket
0742	<del>42° 25.84 67° 08.42</del>		launch seismic gear start line <b>EN-91-14</b>
0745	<del>42° 25.84 67° 08.69</del>		start Tape 39 side B / start Geopulse
0800	<del>42° 25.84 67° 08.71</del>	Z=368	NO POSITION SAIL SYSTEM INOP.

## SEISMIC PROFILING CRUISE TRACK LOG

McCray

PROJECT: GOM 1991 NSF OPERATORS: Belknap, Meisenheimer, Giray,  
 DATE: 8/7/91 WEATHER: sunny Seas: calm (1-3')  
 LOCATION: Georges Basin  
 VESSEL: R/V Endeavor SEISMIC SYSTEM: \_\_\_\_\_ PAGE: 20 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
	<del>33</del> 60 0		
0815	42 23 60 67 09 65	Z = 360	MAGNAVOX LORAN POSITION (800 INOP.)
0830	42 27 45 67 10 32	Z = 330	" " "
0845	42 21 25 67 12 41	Z = 305 m START TAPE 40 @ 0841	800 BACK ON LINE
0900	42 20 04 67 13 18	Z = 290	
0904:30	42 19 71 67 13 44	EOL EN91-14 SOL EN91-15	
0915	42 19 96 67 14 27	Z = 300 m	
0930	42 20 80 67 15 46	Z = 305 m	
0945	42 21 64 67 16 49	Z = 326 m	
1000	42 22 60 67 17 70	Z = 340 m	
1004		START TAPE 41	
1015	42 23 47 67 18 55	Z = 350	
1031	42 24 40 67 19 77	Z = 343	
1045	42 25 25 67 20 81	Z = 340	
1100	42 26 22 67 22 01	Z = 362	
1115	42 27 08 67 23 12	Z = 328	
1127	42 27 77 67 23 22	O/C to line #16	EOL EN91-15 SOL EN91-16
1130	42 28 08 67 23 47	Z = 349	
1139	<del>280</del>	START TAPE 42	
1145	42 29 03 67 24 15	Z = 315	
1200	42 29 88 67 24 28	Z = 315	

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: Gulf of Mexico 1991 NSF OPERATORS: Poppe, Butcher, Beehus, Canning  
 DATE: 8/7/91 WEATHER: Partly Cloudy (Srag w/ ft.)  
 LOCATION: Green Basin  
 VESSEL: Endeavor (R/V) SEISMIC SYSTEM: Geopulse PAGE: 21 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
1215	42 30.69 67 24.46	Z = 310 m	(Rev.) Tape # 42 12:26
1230	42 31.58 67 24.67	Z = 298 m	
1245	42° 32.54 67° 24.83	Z = 290 m	
1300	42 33.47 67 25.02	Z = 271 m	
1315	42 34.49 67 25.28	Z = 260	Start <del>set</del> tape 43 1313
1330	42 35.62 67 25.54	Z = 254 m	
1345	42 36.81 67 25.76	Z = 227 m	
1400	42 38.14 67 25.93	Z = 243	
1415	42 39.50 67 26.15	Z = 243	
1430	42 40.85 67 26.36	Z = 235 m	
1445	42 42.32 67 26.58	Z = 215	1447 start tape 44
1500	42 43.71 67 26.78	Z = 205	
1515	42 45.08 67 27.01	Z = 220	
1530	42 46.19 67 27.23	Z = 233	Retired geopulse to remove seaweed 1524 42 45.89 67 27.17
1545	42 47.29 67 27.45	Z = 240	1528 power on 42 46.06 67 27.23
1600	42 48.45 67 27.72	Z = 227	
1615	42° 49.69 67° 28.02	Z = 205	
1630	42° 50.95 67° 28.37	Z = 230	
1645	42° 52.12 67° 28.72	Z = 240	
1655 <del>1700</del>	42° 67°		Tape # 45 started
1700	42° 53.33 67° 29.08	Z = 245	

## SEISMIC PROFILING CRUISE TRACK LOG

Meisenheimer, Giroux

PROJECT: GOM 1991 NSF OPERATORS: Belknap/Schmitker  
 DATE: 8/7/91 WEATHER: clear, calm 2' swell, 1' chop  
 LOCATION: Crowell Basin  
 VESSEL: R/V Endeavour SEISMIC SYSTEM: ORE Geopulse PAGE: 22 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
1715	42° 54.63' N 67° 29.34' W	Z = 263m	
1730	42° 55.94 67° 29.29	Z = 230m	start line 17 EOL-91-16 SOL-91-17
1745	42° 56.50 67° 30.72	242 m Z = <del>235</del>	
1800	42° 56.60 67° 32.47	Z = 238m	
1806 <del>1815</del>	42° 56.59 67° 33.27		Change course (line 17)
1809	42° 56.64 67° 33.49	Z = 227m	
1815	42° 57.07 67° 33.52	Z = 229m	
1829			Start Tape #46
1830	42° 57.12 67° 31.87	Z = 237m	
1845	42° 57.27 67° 30.30	Z = 236m	
1900	42° 57.24 67° <del>28.22</del> 28.68	Z = 238m	
1915	42° 57.14 67° 26.78	Z = 229m	
1930	42° 57.12 67° 25.01	Z = 240m	
1945	42° 57.10 67° 23.37	Z = 232	
2000	42° 56.99 67° 21.56	Z = 267	← ?
2003			Started Tape #47
2015	42° 57.03' N 67° 19.68' W	Z = 260m	
2030	42° 54.84' N 67° 27.80' W	Z = 265	
2040			EOL set
			Frozen computer screen

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: 60M 1991 NSF OPERATORS: Fletcher, Barlas, Reynolds,  
 DATE: wed 7 Aug 91 WEATHER: calm, clear, seas Schmittner  
 LOCATION: ~~Cowell Basin~~ Jordan Basin Cowell Basin  
 VESSEL: Endeavor SEISMIC SYSTEM: Geopulse+12KHz PAGE: 23 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
<del>2039:30</del>	<del>42° 54.84' N 67° 19.33' W</del>	<del>error</del> <del>EOL EN-91-17</del>	<del>42° 57.10' N 67° 16.57' W</del>
2043		tape stopped @ 2043	
<del>2045</del>	<del>42° 56.94' N 67° 29.33' W</del>	<del>Z=290</del>	
2046	42° 56.94' N 67° 16.30' W	Z=	
2100	42° 57.02' N 67° 19.53' W	Z=	
22:08:15	42° 55.67' N 67° 19.86' W	core started down	(CORE #6)
22:15:40	42° 56.91' N 67° 19.80' W	trips	PL-91-06
22:27	42° 56.80' N 67° 19.79' W	pilot core at surface	
22:42	42° 56.53' N 67° 19.54' W	piston + pilot cores on board	
23:35	42° 56.96' N 67° 19.73' W		
23:30		CTD down	CTD 91-05
<del>2340</del>		CTD on board	
2345	42° 56.98' N 67° 19.72' W	Z=258 m	
<del>2304</del>			
<del>23</del>			Day 220
0000	42° 59.39' N 67° 20.00' W	Roll 3 for Geopulse Started SOL EN-91-18	Z=267m
0015	42° 58.19' N 67° 20.62' W	0015 retrieve seismic gear 0019 fix back in water	Z=268m
0019	42° 58.26' N 67° 20.69' W	Seismic gear back in water	
0030	42 58. 87 67 21. 10	Z=224	
0045	42 59. 89 67 21.89	Z=236 m	T48 00:50 started
0100	43 00. 84 67 22. 76	Z=227 m	

prox. there 7 Aug 91

8 Aug 91

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GERT 1991 NSF OPERATORS: Bacchus, Batchelor, Pope  
 DATE: Thur 8<sup>th</sup> Aug. 1991 WEATHER: Clear, calm seas (1-2 ft.)  
 LOCATION: Crowell Basin to Jordan Basin  
 VESSEL: Endeavor SEISMIC SYSTEM: Geopulse + 12kHz PAGE: 24 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
<del>0115</del> 0130	43° 01.71 67° 23.59	Z = 219 m	
0130	43° 02.66 67° 24.53	Z = 197	
0145	43° 03.59 67° 25.42	Z = 195	
0200	43° 04.66 67° 26.49	Z = 203	
0215	43° 05.67 67° 27.33	Z = 209 m	
0230	43° 06.67 67° 28.20	Z = 202 m	Start tape # 49 0232
0245	43° 07.71 67° 28.95	Z = 203	
0300	43° 08.73 67° 29.66	Z = 192	
0315	43° 09.81 67° 30.58	Z = 192	
0330	43° 10.97 67° 31.46	Z = 196	
0345	43° 12.18 67° 32.41	Z = 191	
0400	43° 13.32 67° 33.25	Z = 211	
0411:30			Start tape # 50
0415	43° 14.45 67° 34.16	Z = 208 m	
0430	43° 15.56 67° 35.06	Z = 231 m	
0445	43° 16.68 67° 36.05	Z = 233 m	Deep Basin at GM or till tongue
0500	43° 17.77 67° 36.96	Z = 220 m	
0515	43° 18.96 67° 37.93	Z = 240 m	
0530	43° 20.07 67° 38.73	Z = 244 m	
0545	43° 21.21 67° 39.62	Z = 247 m	Start Tape 51
0600	43° 22.27 67° 40.59	Z = 248 m	

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF OPERATORS: Belknap, Giray, MeisenheimerDATE: 8 Aug. 1991 WEATHER: Sunny, Clear, seas: calm 1-3'LOCATION: Jordan BasinVESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse + 12khz PAGE: 25 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0615	43° 23.39 67° 41.58	Z = 251m	
0630	43° 24.65 67° 42.25	Z = 251m	
0645	43° 25.57 67° 43.46	Z = 254m	
0649	43° 25.86 67° 43.84	EOL EN-91-18 SOL EN-91-19	
0700	43° 25.41 67° 44.91	Z 252m	Tape 51 Restarted (off ~4min)
0715	43° 24.70 67° 46.36	Z = 259m	
0725			Tape #52 Started
0730	43° 23.94 67° 47.89	Z = 255m	Geopulse off to clear off weed
0736	43° 23.78 67° 48.15		Back on
0745	43° 23.37 67° 48.91	Z = 240m	
0800	43° 22.71 67° 50.30	Z = 254m	
0816	43° 22.02 67° 51.88	Z = 251m	
0830	43° 21.42' N 67° 53.24' W	Z = 252m	
0845	43° 20.73 67° 54.70	Z = 250m	
0900	43° 20.02' N 67° 56.25' W	Z = 250m	
0915	43° 19.30' N 67° 57.77' W	Z = 248m	~ 15 MINUTES DATA NOT RECORDED PRIOR TO 0918
0918	43° 18.59' N 67° 59.25' W		Tape #53 started
0930	43° 18.59' N 67° 59.25' W	Z = 242m	
0945	43° 17.87' N 68° 00.79' W	Z = 235m	
1000	43° 17.17' N 68° 02.32' W	Z = 235m	
1015	43° 16.51' N 68° 03.82' W	Z = 226m	

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 91 NSF

OPERATORS: Barlag, Fletcher, Reynolds, Schmitzer

DATE: Thurs 8 Aug 91

WEATHER: clear, calm

LOCATION: 43° 15.81' N, 68° 05.39' W - Southern Jordan Basin

VESSEL: Endeavour

SEISMIC SYSTEM: Geopulse, 12 kHz

PAGE: 26 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
10 30	43° 15.81' N 68° 05.39' W	Z=220m	
10 31	43° 15.74' N 68° 05.54' W		slowing down to clean seaweed from catamaran
10:36:30	43° 15.57' N 68° 05.90' W		seismic gear back on line
10:45	43° 15.20' N 68° 06.71' W	Z=215m	
10:52	43° 14.85' N 68° 07.44' W		start of tape #54
1100	43° 14.45' N 68° 08.18' W	Z=210m	
1115	43° 13.70' N 68° 09.68' W	Z=208m	
1130	43° 12.94' N 68° 11.18' W	Z=206m	
1145	43° 12.25' N 68° 12.68' W	Z=203m	
1200	43 11.54 68 14.17	Z 202m	
1215	43 10.84 68 15.68	Z= 197m	start tape #55 1225
1230	43 10.14 68 17.16	Z= 195m	
1241	43 09.64 68 18.31		clean off seaweed.
1245	43 09.54 68 18.57	Z= 212m	1246 power on Geopulse
1300	43 08.86 68 20.17	Z= 205m	
1315	43 08.16 68 21.80	Z= 196m	43 07.5 68 23.2 1328 → <del>1328</del> <del>1328</del> crossed old line #7
1330	43 07.40 68 23.37	Z= 210m	
1337	43 07.07 68 24.12	EOL #19	Break for covering
1400	43° 07.72 N 68° 22.70 W	Z=208m	
			Maneuvers to locate station #7

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM-91-NSF OPERATORS: Bellenger, Schmitter, Fletcher  
 DATE: Thurs 8 Aug 91 WEATHER: clear + calm  
 LOCATION: Truxton Basin (43° 08.16' N, 68° 22.74' W <sup>+ thereabouts</sup>)  
 VESSEL: Endeavor SEISMIC SYSTEM: Geopulse-12KHz PAGE: 27 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
1430	43° 07.95' N 68° 22.81' W	Z = 205m	
1505	43° 07.74 68° 23.11	core down	(core #7)
15:11:20	43° 07.73 68° 23.08	trip	PC-91-07
15:20		pull core at surface	
16:47	43° 08.29' N 68° 23.06' W	CTD & Station 7	
1652	43° 8.40 68° 23.05	CTD up	
1700	43° 08.56 68° 23.03	Z = 205m Geopulse turned on / seismic gear latched	XEOL EN-91-19 SOL EN-91-20 Truxton Basin
1706		restart Tape # 55	
1715	43° 10.03 68° 22.69	Z = 185m	
1730	43° 11.50 68° 22.26	Z = 188m	
1745	43° 12.87 68° 21.54	Z = 175m	
1800	43° 14.11 68° 21.02	Z = 182m	
1802	43° 14.31 68° 20.96		slow to clear sea weed from catamaran
1805	43° 14.51 68° 20.92		catamaran back in
1802			start Tape # 56
1815	43° 15.27 68° 20.76	Z = 179m	
1830	43° 16.58 68° 20.49	Z = 172m	
1845	43° 17.77 68° 19.78	Z = 176m	
1900	43° 19.01 68° 19.24	Z = 178m	
1901			Tape # 57 started
1915	43° 20.26 68° 18.92	Z = 182m	

SEISMIC PROFILING CRUISE TRACK LOG

Julian Day 221 at 0000  
Meisenheimer

PROJECT: GOM-91-NSF OPERATORS: Belknap, Gray, McCray  
 DATE: 8 Aug. 1991 WEATHER: clear calm-flat  
 LOCATION: Jordan Basin  
 VESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse, 12khz PAGE: 28 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
1930	43° 21.54 68° 18.84	z = 178m	
1945	43° 22.73 68° 18.50	z = 173m	
1951			shut down to clean weeds
1956			Geopulse back on line
2000	43 23 75 68 18 19	z = 180m	
2015	43° 25.05' N 68° 18.11' W	z = 188m	
2030	43° 26 30 68° 18 10	z = 172m	
2046	43° 27.65 68° 18.10	z = 172m	START TAPE 58 @ 2050
2100	43° 28.79 N 68° 18.08 W	z = 170m	
2115	43° 29.99' N 68° 18.09' W	z = 190m	
2130	43° 31 19 68° 18 03	z = 194m	
2136	43° 31 60 68° 17 96		CROSSING GOM JB-90 = 6°
2145	43° 32 16 68° 17 99	z = 195m	
2148	43 32 41 68 18 00	SOL 20	Stop to retrieve Calanoida
2217	43 31 74 68 18 00		Stop Station Search, Start Maneuvering for Station
2301	43 31 93 68 17 86	z = 195m	PC-8-91 Hit
0009	43 31 33 68 18 28	CTD start	z = 195
0020	43 31 25 68 18 33	CTD bottom	180m wire out CTD-07
0028	43 31 20 68 18 37	CTD up	out of H <sub>2</sub> O
0036	43 31 16 68 18 52		deploy geopulse / on <del>PC-8-91</del>
0038	43 31 17 68 18 64		SOL 21

7/9/91

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 91 - NSFOPERATORS: Bachus, Batchelor, Conway, PopekDATE: 8/9/91WEATHER: calmLOCATION: NW Indian BasinVESSEL: R/V EndeavorSEISMIC SYSTEM: GeopulsePAGE: 29 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0045	43 31. 34 68 19. 33	Z = 200 m	Near duplicate of 90-06 until 02:40
0100	43 31. 82 68 20. 93	Z = 194	Start tape #59 0113
0115	43 32. 28 68 22. 51	Z = 178	
0130	43 32. 73 68 24. 06	Z = 182	
0145	43 33. 21 68 25. 63	Z = 169 m	
0200	43 33. 72 68 27. 21	Z = 160 m	
0215	43 34. 22 68 28. 72	Z = 168	
0230	43 34. 71 68 30. 41	Z = 146	<i>c/c</i>
0245	43 34. 51 68 32. 26	Z = 154	Near end of 90-06 Start tape #60 0247
0246			alter course to avoid traffic
0300	43 34. 36 68 34. 08	Z = 132	
0315	43 34. 26 68 35. 89	Z = 131	
0330	43 34. 19 68 37. 67	Z = 128	
0345	43 34. 04 68 39. 46	Z = 144	
0400	43 33. 84 68 41. 09	Z = 149	
0407	43 33. 77 68 41. 96		shut off geopulse slow down to clean catamaran
0417	43 33. 67 68 42. 62		Catamaran back in
0427	43 33. 58 68 43. 78		power on → geopulse
0430	43 33. 55 68 44. 14	Z = 138 m	
0423			Start Tape 61
0445	43 33. 43 68 45. 89	Z = 150 m	

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF

OPERATORS: *Belknap*  
Gray, Meisenheimer

DATE: 8/9/91

WEATHER: *Clear, calm*

LOCATION: NW Jordan Basin to Platts Basin

VESSEL: R/V Endeavor

SEISMIC SYSTEM: *Regulus, 12kHz*

PAGE: 30 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0500	43° 33.37 68° 47.59	Z = 169m	
0515	43° 33.47 68° 49.25	Z = 140m	Nice Sunrise
0530	43° 33.56 68° 50.90	Z = 138m	
0545	43° 33.58 68° 52.64	Z = 127m <i>(got tickler)</i>	
0557	43° 33.85 68° 54.32	Start tape # 62	
0600	43° 33.85 68° 54.32	Z = 137m	<i>c/c</i>
0615	43° 34.38 68° 55.93	Z = 108m	
0630	43° 34.87 68° 57.58	Z = 140m	<i>c/c</i> <i># Northern limit</i>
0645	43° 34.57 68° 59.24	Z = 134m	
0700	43° 34.12 69° 01.01	Z = 126m	
0715	43° 33.67 69° 02.76	Z = 130m	
0731	43° 33.20 69° 04.79	Z = 144m	
0732		clean weed from catamaran	
0736	43° 33.08 69° 05.17W	Restart	
0737		Start Tape # 63	
0745	43° 32.84 69° 06.06	Z = 127m	
0800	43° 32.38 69° 07.57	Z = 145m	
0811	43° 31.99 69° 08.69	change of course to N250°	
0815	43° 31.92 69° 09.08	Z = 142m	
0830	43° 31.57 N 69° 10.63 W	Z = 130m	
0845	43° 31.20 69° 12.16	Z = 140m	

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: 60M 1991 NSFOPERATORS: Hatcher Bulag, Smutsker, ReynoldsDATE: 8/9/91WEATHER: clear calm totally beautifulLOCATION: unnamed - offshore central Maine coastVESSEL: EndeavorSEISMIC SYSTEM: Seipulse 12kHz PAGE: 31 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
<del>0853</del> <del>0900</del>	43° 31.02' N 69° 12.96' W		<del>slow down to clear seaweed from geopulse</del>
0858	43° 30.98' N 69° 13.11' W		restart geopulse
0900	43° 30.97' N 69° 13.25' W	Z = 148 m	
<del>0915</del> 0915			Tape # 64 started
0916	43° 30.47 69° 14.89	Z = 170 m	
0930	43° 30.14 69° 16.29	Z = 150 m	
0945	43° 29.73 69° 17.80	Z = 162 m	
1000	43° 29.31 69° 19.37	Z = 152 m	
1015	43° 28.91 69° 20.95	Z = 166 m	
1030	43° 28.43 69° 22.57	Z = 153 m	
1045	43° 28.04 69° 24.30	Check TAPES Z = 112 m	
1047	43° 28.00 69° 24.51	c/c	E.O.L # 21 S.O.L # 22
1048	43° 27.89 69° 24.63		Tape # 65 started
<del>1100</del> 1100	43° 27.04 69° 25.07	Z = 153 m	
1115	43° 25.89 69° 25.64	Z = 161 m	
1130	43° 24.73 69° 26.23	Z = 180 m	
11:40	43° 23.92 69° 26.61		slow to clean out seaweed from geopulse
11:44	43° 23.78' N 69° 26.66' W		restart geopulse
1145	43° 23.72' N 69° 26.69' W	Z = 190 m	
1200	43° 22.01 69° 27.20	Z = 158	
1215	43° 21.44 69° 27.83	Z = 183	

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF OPERATORS: Batchelor, Bacchus, Canning, Popok  
 DATE: 8/9/91 WEATHER: overcast, calm seas  
 LOCATION: 43° 21.15 69° 28.00 Platts Basin  
 VESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse + 12KHz PAGE: 32 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
1219	43° 21.15 69° 28.00	Core site PC-9	Doppler Current Meter Now Working Properly
1222	43° 21.04 69° 27.00	start Tape T-66	
1226	43° 20.88 69° 28.05		
1230	43° 20.62 69° 28.18	Z 186	
1232	↑	Geopulse off Gear Shutdown	E.O.L. 22 @ 1230
1234		start search for coring site	
13:16:30	43° 21.37 69° 27.42	core down (#9 CORE)	PC-91-09
13:23:00	43° 21.40 69° 27.34	trip	
1347		core on board	
1433	43° 21.44 N 69° 26.94 W	CTD in	CTD-08
1508	43° 21.54 69° 26.55	Geopulse in	S.O.L # 23
1515	43° 21.27 69° 27.17	Z=183	
1530	43° 20.97 69° 28.68	Z=187	
1545	43° 20.67 69° 30.23	Z=167	
1600	43° 20.36 69° 31.80	Z=170	
1615	43° 20.06 69° 33.40	Z=162 m	
1630	43° 19.77 69° 35.05	Z=167 m	
1634	<del>43° 19.52</del> <del>69° 36.38</del>	Started Tape # 67	
1645	43° 19.52 69° 36.38	Z=165 m	
1700	43° 19.25 69° 38.33	Z=177 m	
1715	43° 18.95 69° 40.02	Z=176 m	

## SEISMIC PROFILING CRUISE TRACK LOG

Meisenheimer

PROJECT: GOM 1991 NSF OPERATORS: Belknap, Giray, McCray,  
 DATE: 9 Aug. 1991 WEATHER: overcast Seas: 1-3' building  
 LOCATION: N Flank of Platts Bank → Wilkinson Basin  
 VESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse + 12kHz PAGE: 33 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
1730	43° 18.67 69° 41.76	z = 168 m	Continues 91-23
1732	<del>43 18.67</del> <del>69 41.76</del>	power off catamaran out	for cleaning
1735	43 18.59 69 42.18	power on	
1739		adjust stylus	
1742		resume Geopulse printing	
1745	43° 18.43' N 69° 43.11' W	z = 158 m	
1800	43° 18.18 69° 44.67	z = 149 m	
1808		Start tape #68	
1815	43° 17.92 69° 46.31	z = 130 m	
1830	43° 17.67 69° 47.95	z = 150 m	
1830 → 1838	43° 17.51 69° 48.91	Change geopulse paper + stylus / power back on	Roll 4 ←
1845	43° 17.39 69° 49.60	z = 162 m	Wilkinson Basin
1900	43° 17.12 69° 51.25	z = 190 m	
1915	43° 16.81 69° 52.85	z = 184 m	
1930	43° 16.51 69° 54.46	z = 167 m	
1946	43° 16.22 69° 56.14	z = 162 m	19:53 - start T-69
2000	43° 15.96 69° 57.59	z = 145 m	
2015	43° 15.65 69° 59.22	z = 123 m	
2030	43° 15.36 70° 00.90	z = 120 m	
2045	43° 15.00 70° 02.76	z = 146 m	
2100	43° 14.72 70° 04.39	z = 155 m	

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF OPERATORS: Belknap, Gray, McCray, Meszken  
 DATE: 9 Aug 1991 Fri WEATHER: overcast rain 3' sea  
 LOCATION: ~~Watts Bank~~ Jeffreys Basin  
 VESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse, 12Khz PAGE: 34 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
2115	43° 14' 42" 70° 05' 93"	Z = 162 m	
<del>2125</del>	43° 14.18' N 70° 07.03' W	SOL crossing line #21 (1990)	
		(GOM-WB-90-21)	
2128	<del>43° 14' 09"</del> <del>70° 07' 51"</del>	START TAPE 70	
✓ 2130	43° 14' 09" 70° 07' 51"	Z = 147 m	
2145	43° 13' 69" 70° 09' 12"	Z = 130 m	
✓ 2200	43° 13' 29" 70° 10' 80"	Z = 120 m	
2215	43° 12.93' N 70° 12.49' W	Z = 125 m	
✓ 2230	43° 12.56' N 70° 14.17' W	Z = 120 m	
2245	43° 12.16' N 70° 15.92' W	Z = 118 m	
✓ 2251	43° 11.99' N 70° 16.63' W	SOL EN-91-24	EOL 23
✓ 2300	43° 11.29' N 70° 17.14' W	Z = 112 m	
2302		tape # 71 started	
<del>2315</del>	43° 10.10' N 70° 17.97' W	Z = 121 m	
✓ 2330	43° 08.95' N 70° 18.69' W	Z = 120 m	
2346	43° 07.69' N 70° 19.52' W	Z = 104 m	
0000	43° 06.55' N 70° 20.27' W	Z = 120 m	Julian Day 222
0015	43° 05.32' 70° 21.07'	Z = 109 m	
✓ 0030	43 04.08 70 21.87	Z = 106 m	0030 Start tape 72
0045	43 02.91 70 22.67	Z = 112 m	
0100	43 01.74 70 23.49	Z = 113	

Act  
10  
Aug 91

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF OPERATORS: Barthel, Batchelor, Popek  
 DATE: 10<sup>th</sup> August WEATHER: Raining, overcast, 3' seas  
 LOCATION: ~~Jeffreys Basin~~ → Wilkeson Basin  
 VESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse + 12 kHz PAGE: 35 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0115	43 00.58 70 24.23	Z = 114	FOL 24 SOL 25
0130	43 00.50 70 22.72	Z = 127	
0145	43 00.62 70 21.28	Z = 131	
0200	43 00.67 70 19.81	Z = 141	0210 start tape 73
0215	43 00.71 70 18.21	Z = 153	
0228	43 00.75 70 16.87		off geopulse to check, resumed
0230	43 00.77 70 16.71	Z = 152	
0235	43 00.80 70 16.52		power on
0237	43 00.82 70 16.27		Geopulse back on + stylus check
0245	43 00.87 70 15.59	Z = 148	
0300	43 00.92 70 14.94	Z = 158	
0315	43 00.92 70 12.32	Z = 158	
0330	43 00.88 70 10.54	Z = 173	
0343	43 00.84 70 08.95		GOM-WB-90-22 cross over 90 line site PC8 {43 00.91} 1990 {70 08.95}
0345	43 00.85 70 08.76	Z = 172	0344 start tape 74
0400	43 00.90 70 07.01	Z = 150	Jeffreys ledge
0415:30	43 01.01 70 05.32	Z = 117 m	
0430	43 01.23 70 03.80	Z = 69 m	
0445	43 01.49 70 02.33	Z = 60 m	Sand bodies on Jeffreys ledge
0500	43 01.62 70 00.90	Z = 122 m	
0515	43 01.70 69 59.51	Z = 170 m	

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF OPERATORS: Relknap, Giray, Meisenheimer  
 DATE: 10 Aug. 1991 WEATHER: Raining Overcast Seas: ~~5' swell~~, 1-3' chop  
 LOCATION: Wilkinson Basin 8' swell  
 VESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse + 12khz PAGE: 36 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0530	43° 01.74 69° 58.14	Z = 201 m	Continue EN-91-25
0527		Start Tape # 75	
0545	43° 01.80 69° 56.91	Z = 212 m	Multiple till tongues
0600	43° 01.79 69° 55.68	Z = 215 m	
0615	43° 01.78 69° 54.10	Z = 211 m	
0630	43° 01.82 69° 52.53	Z = 209 m	
0645	43° 01.84 69° 50.89	Z = 203 m	
0700	43° 01.86 69° 49.22	Z = 189 m	1
0702	<del>43°</del>	End Tape 75 - Do not restart - weather	
0715	43° 01.91 69° 47.48	Z = 176 m	
0728		TWTT ON 3.5 kHz	
0730	43° 01.99 69° 45.72	Z = 157 m	
0745:30	43° 02.06 69° 43.91	Z = 149 m	
0800	43° 02.17 69° 42.15	Z = 132 m	
0815	43° 02.05 69° 40.55	Z = 123 m	
0820	43° 01.89 69° 40.11	Passing point G	{ EOL EN 91-25 SOL EN 91-26
0830	43° 01.49 69° 40.62	Z = 120 m	
0845	43 00 77 69 41 59	Z = 125 m	
0900	42 59 90 69 42 64	Z = 137 m	
0915	42 59 10 69 43 68	Z = 140 m	
0930	42 58 26 69 44 79	Z = 160 m	

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF

OPERATORS: ~~Beth~~ Schnitker Reynolds

DATE: 10 Aug 1991

WEATHER: Drizzling Rain, seas 8'-10' with chop 30 knot wind

LOCATION: Wilkinson Basin

VESSEL: RV Endeavor

SEISMIC SYSTEM: Geopulse 935 PAGE: 37 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
<del>0945</del>	42 57.36 69 45.95	Z = 185	
1000	42 56.49 69 42.09	Z = 202	
1015	42 55.54 69 48.37	Z = 225 m	
1030	42 54.66 69 49.53	Z =	
1045	42° 53.76 69° 50.71	Z = 250	
1056	42° 53.04 69° 51.67	off - Geopulse Profiler	Spontaneously turned off
1105	42° 52.85 69° 51.91	Z = 230	
1106	42° 52.49 69° 52.36	on - Geopulse Profiler	Spontaneously turned on
1115	42° 51.97 69° 53.03	Z = 261	
1130	42° 51.10 69° 54.13	Z = 225	
1142	42° 50.69 69° 54.35		Geopulse coming in - records not clear
1144	42 50.63 69 54.25	EOL 26	
1151	42 50.52 69 53.89	off 3.5 KHz	
1200	42 50.44 69 53.42	Navigation Only - Once/hour	
1300	42 50.17 69 49.91		
1308			Doppler Current Meter or suspended operations in storm
1400	42 49.71 69 46.84		
1500	42 49.61 69 44.06		
1600	42 49.14 69 41.43		
1700	42° 48.43' 69° 39.04'		
1800	42° 47.38 69° 37.07		

## SEISMIC PROFILING CRUISE TRACK LOG

Meisenheimer

PROJECT: GOM 1991 NSF OPERATORS: Schnittker + Belknap  
 DATE: 10 August 1991 WEATHER: 20kts wind, rough seas  
 LOCATION: Willifusou Basin  
 VESSEL: Endeavour SEISMIC SYSTEM: suspended opera PAGE: 38 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
1900	42° 45.86 69° 35.50		
1930	42° 45.16' 69° 34.88'		
<del>2000</del> <del>1945</del>	42° 44.90 69° 34.59	Z = 230 m	
2020	42° 45.79 69° 36.75	Z = 232 m	Resume 3.5 kHz Geopulse NOT ON LINE
2030	42° 46.48 69° 39.15	Z = 248 m	
2045	42° 47.45 69° 42.99	Z = 240 m	
2100	42° 48.45 69° 46.49	Z = 255 m	
2115	42° 49.48 69° 50.20	Z = 255	
2130	42° 50.58 69° 53.83	Z = 227	
2134	42° 50.68 69° 54.37		On position to deploy gear - <del>Person</del>
2141	42° 50.44 69° 54.75		Resume geopulse - testing data quality
2145	42° 50.20 69° 54.99	SOL#27	Z = 217 m
2146	42° 50.17 69° 55.12		Start #76 tape
2156	42° 50.24		3.5 kHz OFF Resume 12 kHz
2200	42° 49.24 69° 56.40	Z = 238 m	
2215	42° 48.35 69° 57.63	Z = 220 m	
2230	42° 47.37 69° 58.93	Z = 190 m	
2245	42° 46.41 70° 00.27	Z = 180 m	
2300	42° 45.47 70° 01.48	Z = 155 m	
2315	42° 44.50 70° 02.84	Z = 158 m	
2320	42° 44.24 70° 03.41		Tape #77 Start

8/4 Julian Day 213

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991

OPERATORS: Fletcher, Dunlop, Carling, Reynolds

DATE: August 04 1991

WEATHER: clear, fairly calm

LOCATION: Stellwagen Basin/Bank

VESSEL: Endeavor

SEISMIC SYSTEM: Geopulse 12kHz

PAGE: 39 OF 46

8/11/91

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
2330	42° 43.69 70° 04.29	Z = 154 m	Point EOL
2331	42 43.61 70 04.39		EOL 27 SOL 28
2345	42° 43.44 70° 03.70	Z = 160 m	
0000	42° 43.87 70° 02.50	Z = 162 m	Gyro compass and Sail System OFF.
0015	42 44.55 70 01.46		Geopulse off to allow
0019	42 44.65 70 01.37		No power to plotter / bad connection Voltage on
0030	42 44.91 70 00.61	Z = 170	
0045	42 45.28 69 59.19	Z = 183	Start tape 78 0054
0100	42 45.63 69 57.73	Z = 198	
0115	42 45.96 69 56.21	Z = 225	
0130	42 46.33 69 54.68	Z = 252	
0139	42 46.58 69 53.69		cut power to Geopulse
0143	42 46.68 69 53.32		Recheck above (not resume) replace stylus
0145	42 46.74 69 53.08	Z = 228	Resume Geopulse
0200	42 47.14 69 51.04	Z = 228	
0215	42 47.51 69 50.11	Z = 240	
0230	42 47.87 69 48.59	Z = 252	Tape stopped @ 0234 Shutting down tape deck
0245	42 48.25 69 47.14	Z = 265	
0300	42 48.65 69 45.69	Z = 260	
0315	42 49.00 69 44.22	Z = 250	
0330	42 49.34 69 42.75	Z = 235	

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF OPERATORS: Bacchus, Batchelder, CanningDATE: 11<sup>th</sup> August WEATHER: Clear, 3-6' seas with swellsLOCATION: Wilkinson BasinVESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse, 12 kHz PAGE: 40 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0345	42° 49.69 69° 41.30	Z = 210 m	
0400	42° 50.02 69° 39.78	Z = 190 m	
0415	42° 50.46 69° 38.28	Z = 174 m	
0427	42° 50.80 69° 37.06	<del>EOL EN 91-27</del> EOL EN-91-28 <del>SOL EN-91-28</del> SOL EN-91-29	
0430	42° 50.77 69° 36.83	Z = 162 m	
0445	42° 49.66 69° 36.59	Z = 164 m	
0500	42° 49.55 69° 36.37	Z = 177 m	
0515	42° 47.46 69° 36.16	Z = 160 m	
0522:30	42° 46.91 69° 36.07	(Roll 5 put on) <del>Geopulse</del> Paper changed on printer. Geopulse turned off.	
0525:30	42° 46.69 69° 35.99	Restart printing. Geopulse turned back on.	
0530	42° 46.40 69° 35.94	Z = 207 m	
0545	42° 45.33 69° 35.69	Z = 213 m	
0600	42° 44.29 69° 35.45	Z = 241 m	
0615:30	42° 43.16 69° 35.26	Z = 248	
0630	42° 42.09 69° 34.99	Z = 251 m	
0645	42° 40.94 69° 34.74	Z = 263 m	
0700	42° 39.81 69° 34.52	Z = 265 m	
0715	42° 38.57 69° 34.36	Z = 275 m	
0730	42° 37.29 69° 34.07	Z = 282 m	
0745	42° 35.98 69° 33.85	Z = 282 m	
0800	42° 34.69 69° 33.55	Z = 280 m	

## SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM1991 NSFOPERATORS: Reynolds, Parlan, Inuites, KetcherDATE: Aug. 11, 1991WEATHER: absolutely gorgeousLOCATION: Wilkinson BasinVESSEL: EndeavourSEISMIC SYSTEM: Geopulse 12kHz PAGE: 41 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0815	42° 33.43 69° 33.40	Z = 280 m	
0830	42° 32.03 N 69° 33.10 W	Z = 288 m	
0846	42° 30.73 69° 32.85	Z = 270 m	
0900	42° 29.49 69° 32.60	Z = 264 m	
0915	42° 28.16 69° 32.37	Z = 258 m	
0930	42° 26.80 N 69° 32.09 W	Z = 262 m	
0945 <del>1000</del>	42 25.52 69 31.82	Z = 252 m	
1000	42 24.22 69 31.62	Z = 250 m	
1015	42 22.98 69 31.35	Z = <del>222</del> <sup>242</sup> m	
1030	42° 21.74 69° 31.12	Z = 235 m	
1045	42° 20.42 69° 30.93	Z = 232 m	
1100	42 19.16 69 30.75	Z = 238 m	
1115	42 17.85 69 30.50	Z = 243 m	
1130	42 16.52 69 30.23	Z = 235	
1136	42 15.94 69 30.15	Z	Cleaning off geopulse
1143	42° 15.54 69° 30.12		resume geopulse
1145	42° 15.41 69° 30.30	Z = 232	
1200	42° 14.20 69° 29.84	Z = 217	End 29 SOL 30
1215	42 13.20 69 28.85	Z = 227	
1230	42 12.16 69 27.80	Z = 218	
1245	42 11.16 69 26.91	Z = 197	

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: GOM 1991 NSF

OPERATORS: Buehler, Pablik, Cameron, Poppe

DATE: Aug 11, 1991

WEATHER: sunny, wind picking up ~ 20 knots

LOCATION: S Wilkinson Basin

VESSEL: R/V Endeavor

SEISMIC SYSTEM: Impulse

PAGE: 42 OF 46

TIME	LORAN - C	OTHER NAVIGATION (m)	COMMENTS
1300	42 10. 13 N 69 25. 91 W	Z = 196	
1315	42 9. 16 69 24. 98	Z = 203	
1330	42 8. 19 69 24. 02	Z = 207	
1345	42 7. 18 69 23. 10	Z = 212	
1400	42 6. 17 69 22. 14	Z = 203	
1415	42 5. 15 69 21. 14	Z = <del>212</del> 216	
1430	42 4. 11 69 20. 10	Z = 213	
1445	42 3. 03 69 19. 09	Z = 213	
1500	42 1. 40 69 18. 11	Z = 215	
1515	42 00. 77 69 17. 14	Z = 212	
1530	41 59. 47 69 16. 15	Z = 209	
1545	41 58. 58 69 15. 15	Z = 211	
1600	41 57. 55 69 14. 15	Z = 207	
1615	41 56. 57 69 13. 13	Z = 217	
16:22:45	41 56. 05 69 12. 61		NAV. PT., possible core site
16:28:20	41 55. 69 69 12. 27	Z = 218	, possible core site
1630	41 55. 58 69 12. 16	Z = 218	
1632:30	41 55. 40 69 11. 99	Z = 218	original nav. core site BEST SO THIS FAR, 15 ft!
1637	41 55. 05 69 11. 67		EOL # 30
1723	41 55. 32 69 11. 89		Core 91-10 Hit
1800			core on board 1800

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: 60M-91-NSF

OPERATORS: \_\_\_\_\_

DATE: 11 Aug 91 sun

WEATHER: windy, fairly calm seas, sunny

LOCATION: Wilkinson Basin

VESSEL: Endeavor

SEISMIC SYSTEM: geopulse, 12kHz

PAGE: 43 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
1830	<del>41° 54.53' N</del> 69° 11.66' W	CTD down	41° 55' 69° 11.6' <b>CTD-09</b>
1900	41° 54.53' N 69° 11.66' W	Z = 214m	seismic gear in: SOL # 31
1915	41° 55.03 69° 13.03	Z = 218m	
1930	41° 55.70 69° 14.33	Z = 208m	
1945	41° 56.38 69° 15.75	Z = 206m	
2000	41° 57.04 69° 17.18	Z = 207m	
2015	41° 57.74 69° 18.58	Z = 208m	
2030	41° 58.44 69° 20.06	Z = 200m	
2045	41° 59.13' N 69° 21.55' W	Z = 209m	
2100	41° 59.86 69° 23.14	Z = 174m	
2115	42° 00.59 69° 24.73	Z = 202m	
2130	42° 01.32 69° 26.32	Z = 207m	
2146	42° 02.13 69° 28.09	Z = 206m	
2200	42° 02.87 69° 29.71	Z = 212m	
2215	42° 03.68 69° 31.37	Z = 212m	
2230	42° 04.39 69° 32.98	Z = 221m	
2245	42° 05.18 69° 34.53	Z = 229m	
2300	42° 05.93 69° 36.07	Z = 225m	
2315	42° 06.60 69° 37.52	Z = 232m	
2330	42° 07.27 69° 38.91	Z = 232m	
2336	42° 07.55 69° 39.54	EOL 31 SOL 32	at end of 90-23

SEISMIC PROFILING CRUISE TRACK LOG

Julian Day 224

PROJECT: GOM-91 NSF

OPERATORS: Schwitter et al.

DATE: 11-12 AUG 1991 WEATHER: calm, clear

LOCATION: ~20NM east of Provincetown (Truro)

VESSEL: Endeavor SEISMIC SYSTEM: Geoprise, 12 KHz PAGE: 44 OF 46

Aug  
12

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
2345	07 96 40 07	Z = 218	
2358	<del>42° 08.08</del> 69° 41.11		Deviating to avoid traffic
0000	42° 08.08 69° 41.11	Z = 238 m	
0015	42 09.74 69 42.20	Z = 234	
0030	42 10.52 69 43.28	Z = 232	alter to avoid traffic
0045	42 11.68 69 43.61	Z = 238	
0046	42.11.75 69 43.69		returning to course
0100	42 12.37 69 44.66	Z = 235	
0115	42 13.03 69 45.74	Z = 236	
0130	42 13.64 69 46.84	Z = 235	
0145	42 14.21 69 47.91	Z = 236	
0200	42 14.77 69 48.98	Z = 234	
0215	42° 15.43 69° 49.88	Z = 230	
0230	42° 16.09 69° 50.76	Z = 228	
0235	42° 16.29 69° 51.12	Z = 220 CC	E.O.L. 32 S.O.L. 33
0246	42 16.35 69 52.09	Z = 220	
0300	42 16.49 69 53.33	Z = 190	
0315	42 16.63 69 54.68	Z = 187	
0330	42 16.79 69 56.08	Z = 190	
0345	42 16.97 69 57.51	Z = 135	
0400	42 17.13 69 58.94	Z = 195	

## SEISMIC PROFILING CRUISE TRACK LOG

meisenheimer

PROJECT: GOM - 91 NSFOPERATORS: Belknap, Gray, McCray,DATE: August 12, 1991 WEATHER: clear & calm, DARK 1-3' seasLOCATION: ~~Stellwagen Bank~~ Provincetown, Into Stellwagen Bank + BasinVESSEL: R/V Endeavor SEISMIC SYSTEM: Geopulse, 12kHz PAGE: 45 OF 46

TIME	LORAN - C	OTHER NAVIGATION (m)	COMMENTS
0415	42 17.33 70 00.47	Z = 194	
0430	42 17.52 70 01.97	Z = 184	
0445	42 17.73 70 03.50	Z = 182	
0500	42 18.15 70 04.59	Z = 105	
0515	42 18.19 70 05.72	Z = 110	
0524	42 18.11 70 04.78		course change to avoid traffic (turn to the South)
0530	42 17.72 70 04.74	Z = 95	
0532	42 17.60 70 04.87		25° off course, coming back to line
0545	42 17.23 70 06.10	Z = 99	
0600	42° 16.72 70° 07.92	Z = 70 m	
0605:20	42° 16.82 70° 08.47		change course to avoid traffic ((350°) - 0°)
0615	42° 17.59 70° 08.36	Z = 75 m	
0620	42° 18.00 70° 08.25		turning change course back on line
0622:50	42° 18.14 70° 08.47		Back on course (283°)
0630	42 18.18 70 09.33	Z = 64	
0645	42° 18.46 70° 11.05	Z = 53	
0700	42° 18.76 70° 12.83	Z = 45 m	
0715	42° 19.04 70° 14.64	Z = 38 m	
0730	42 19.31 70 16.44	Z = 34	
0745	42 19.59 70 18.22	Z = 30 m	
0800	42° 19.81 70° 20.09	Z = 84 m	

SEISMIC PROFILING CRUISE TRACK LOG

PROJECT: 60 M-91 NSF

OPERATORS: Barlow, Fletcher, Reynolds, Schmitzer

DATE: 12 Aug 91 Monday WEATHER: clear, calm

LOCATION: Hellinger Basin

VESSEL: Endeavor

SEISMIC SYSTEM: Geopulse, 12kHz

PAGE: 46 OF 46

TIME	LORAN - C	OTHER NAVIGATION	COMMENTS
0815	42 20 08 70 21 76	Z = 91 m	
0830	42° 20.37 70° 23.47	Z = 94 m	
0837	42° 20.48 70° 24.55	<del>EOL 33, SOL 20-91-34</del>	
0839	42° 20.42 70° 24.54	SOL 91-34	
0845	42° 19.92 70° 24.59	Z = 94 m	
0900	42° 18.52' N 70° 24.57' W	Z = 93 m	
0915	42° 17.06 70° 24.59	Z = 90 m	
0930	42° 15.78 70° 24.59	Z = 82 m	
0945	42° 14.29' N 70° 24.50' W	Z = 72 m	
1000	42° 12.81 70° 24.67	Z = 68	
1015	42 11.32 70 24.67	Z = 65	
1030	42 09.82 70 24.66	Z = 65 m	
1045	42 08.33 70 24.74	Z = 65 m	
1100	42 06.80 70 24.85	Z = 63	
1115	42 05.21 70 24.95	Z = 60	Cape Cod Bay
1130	42 03.63 70 24.93	Z = 58	
1145	42 02.04 70 24.97	Z = 55	
1200	42° 00.43 70° 24.96	Z = 50	
1203	42.00.12 70° 24.96	Z = 50 End of cruise	E.O.L. 34

Daniel F. Belknap  
Field Book #13  
Sept. 1a, 1990 -  
Aug 7 1992



**FIELD BOOK**

No. 8152-60

8/1/91 Ororo to pickup  
vans for cruise  
PM: Load seismic gear

8/2/91 0545 Depart Walpole  
for Kingston, RI.

R/V Endeavor, URI

Dan Belknap Detmar Schritter  
Barbara Batchelor Tania Baechus  
Dawn Meisenheimer Sarah Fletcher  
Dora Carrington Cem Gray

Breakfast for crew \$13.50 Kornelberg

CAMERA PROBLEMS [most exposures  
guessed - many lost]

8/3/91 Depart Narragansett,  
URI Bayside Lab, 10:00 AM

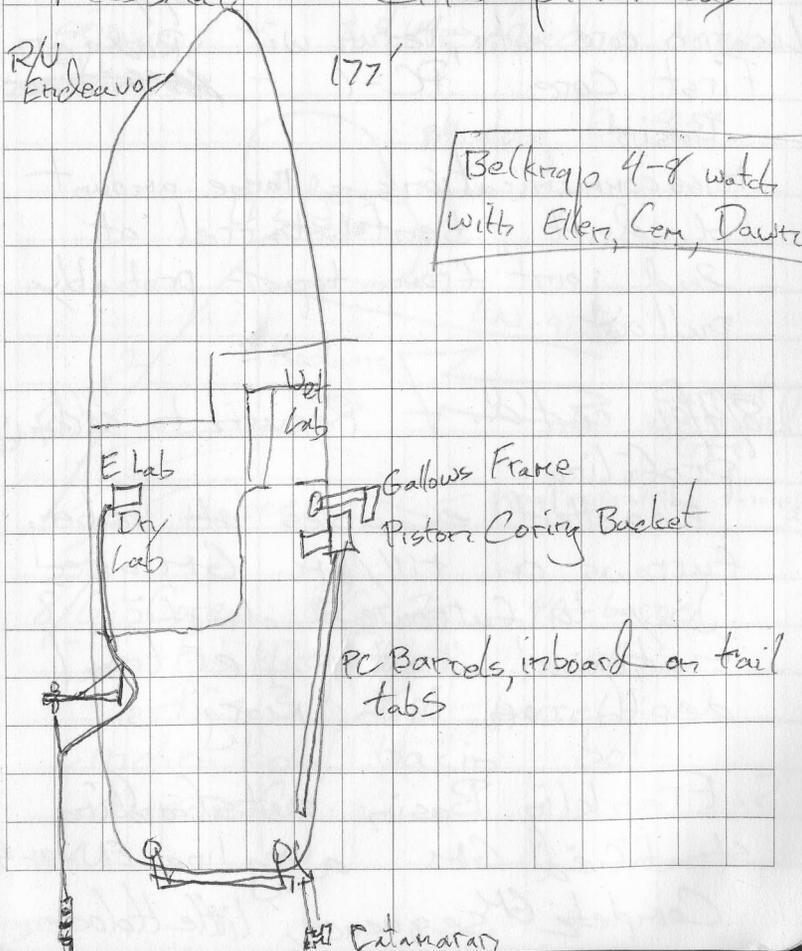
Meet at boat:

Dora Barlaz Ellen McCray  
Packer Coll. Inck URI  
Larry Reynolds UM

Techs: Tom Crotty URI  
Paul Andrews WHOI (  
Jim Broda's sub)

Master Thomas Tyler  
Chief Mate Everett McMurray  
2nd Mate Richard Chase  
Boatswain Jack Buss

Chief Eng	William Appleton
Asst Eng	James Cobleigh
Asst Eng	Eric Frazer
Able Seaman	Michael Keatts
"	Robert Brennan
	Kerry Hood
Cook Steward	Michael Brennan
Messman	Christopher Moody



Stearn through Cape Cod Canal,  
to NE of Provincetown, at  
100 fm contour.

Set up Piston Core, 60' barrel.  
Deploy gear in S. Wilkeson Basin.

Seismic running well 8/4/91  
Location core site, return with Rodgers  
First Core PC-1 - ~~Franklin~~  
Basin

Misscommunications - large amount  
of drift, bent barrel at  
2nd joint from top - probably  
pullout

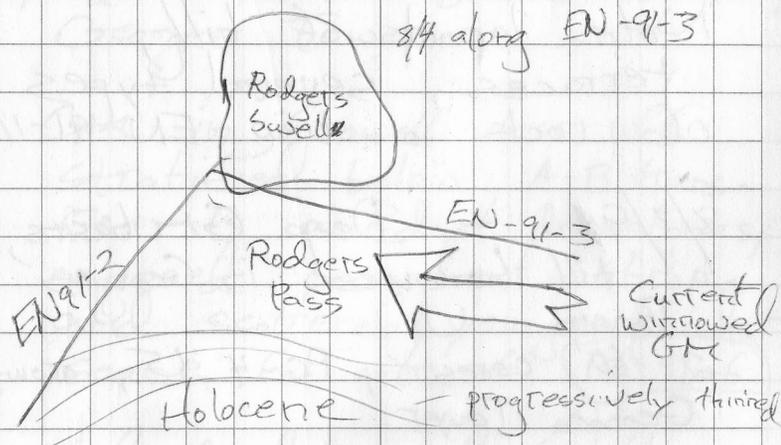
8/4/91 cont'd. - Return to seismic  
profiling.

Excellent examples of iceberg  
furrows on till/GM. GM gives  
way to furrowed chaotic  
material at top, critical  
depth on basin margins

S. Franklin Basin outstanding  
stratified GM along line EN-91-4  
Complete GM sequence, little Holocene

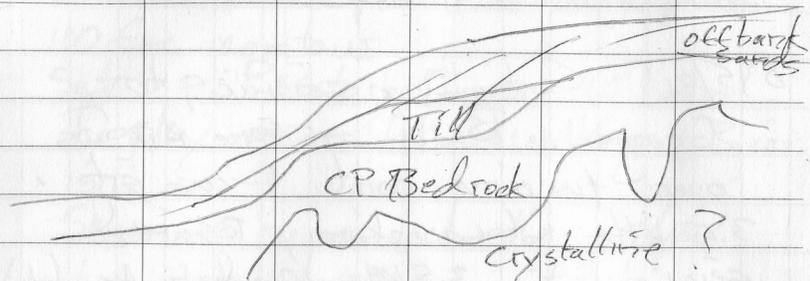
Ellen McGray ran magnetic  
susceptibility, excellent results.

8/5/91 Continuing seismic to  
Georges Bank. some mix ups  
over furling points + core site.  
3.5 kHz not working, resumed  
seismic. 3.5 kHz fixed by Arwatch



8/6 Cores PC-2 40' barrel  
in Franklin Basin and  
PC-3 60' barrel in  
Linden Kohl basin, both  
successful.

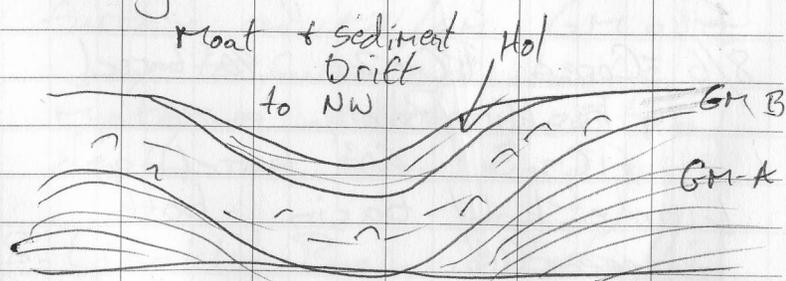
Numerous crossings of  
Georges Bank Margin



Note layout of till,  
terraces, several types  
of rock on line EN-91-11

8/7/91 - Deep GM basins,  
till tongues in Georges  
Basin.

2 60' cores, PC-4 & 5, around  
Georges Tower.



PC-91-5 Thick Holocene?  
gas extrusion. Imploded  
liner at top.

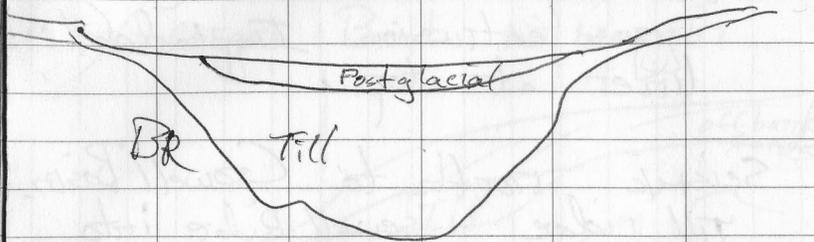
Seismic north to Crowell Basin,  
till ridge - Sewall Ridge into  
Crowell Basin.

Note deep scout holes &  
moat along EN-91-16.  
Moat & drift similar to  
Georges Tower.

GM in Crowell less well  
stratified below A-B trans-  
GM-B abundant dropstones,  
exposed concordant outcrop,  
and scattered younger ponds.  
Search for site of PC-91-6

End of day with good core  
in Crowell Basin, into  
Truxton Event.

8/8/91 0445 70m thick  
till in basin, sharp contact,  
overlain by post glacial (?)



Powderwell, J.A. + Scourse, J.D. eds, *Glacimarine Environments: Processes & Sediments*, Geol. Soc. Spec. Pub. No 53. 1990 - The Geological Society, London, 423 pp.

PC-6 in Crowell Basin

PC-7 Truxton Basin

PC-8 N Jordan Basin -

All straight, good recovery

8/9/91 - seismic profiling across Platts Basin. Till, BR, scattered sediment ponds.

PC-91-9 Platts Basin - 60', straight, good recovery

Magnetics showing transition from Post glacial to GM very clearly.

[Laser printers on board, but Zenith doesn't have proper drivers - mags traced off screen]

Resume seismic across Platts Bank NW flank, Wilkison Basin, Jeffreys Ledge. Problems with seaweed etc. weather building.

8/10/91 Seas building on morning watch. By 0700 decided to forego coring.

By 10 too rough to run seismic. 8-10' seas, driving rain, 30 knts

Stand by hove-to all day, preparing to relocate catamaran early evening.

By 9:00 seas decreasing  
sufficiently to resume  
seismic -

8/11/91 Seismic to southern-  
most point - core 10 in  
Murray Basin.

Seismic lines back to  
Stellwagen Bank & Basin  
8/12/91  
Excellent detailed seismic  
inside Stellwagen Bank.

Complete seismic to  
Cape Cod Bay -  
end 1 hr from Canal.  
Pack gear during return run.  
High speed run through  
canal (14.8 kts!)  
scattering waders, &  
eventual overheating of  
diesel

Arrive at Naragansett  
dock 5:30 PM.

Swimming Party PM.

8/13/91 Depart 0630 -  
Vans to Maine.

Arrive Brunswick.  
Arrive ICDC 1400.  
Unload vans.

8/14/91 Return van to Orono  
& pick up car. Return to  
Biscay.

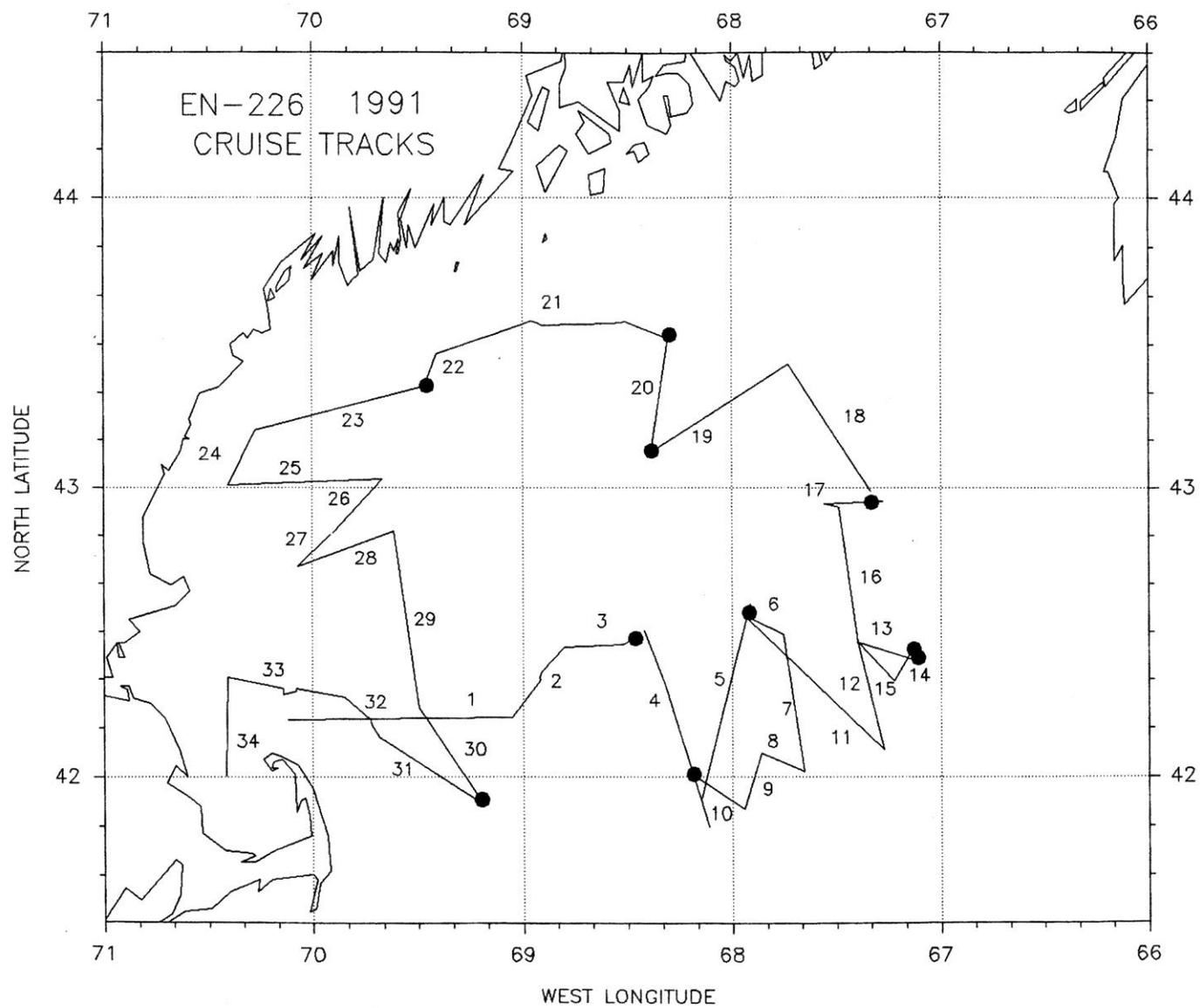
8/19 Hurricane Bob!

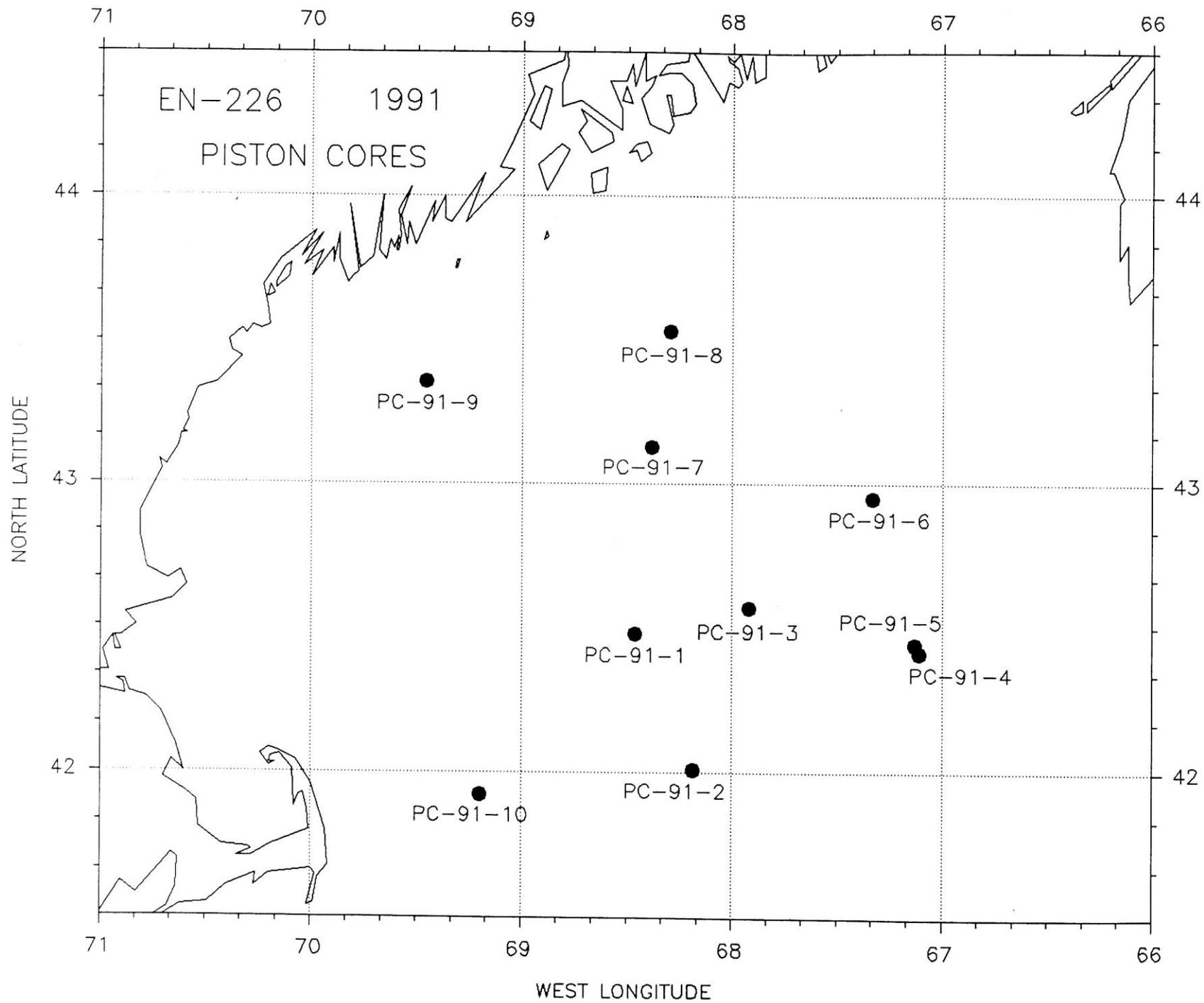
8/19 - 8/23 Open 5 cores  
at ICDC with Detmar,  
Tania Barbara & Dawit.

8/26 <sup>Monday</sup> Pack & move back to  
Old Town  
Tues - Weds deal with  
mail etc. in office

8/29/91 Old Town - Biscay  
Pack for Israel trip

Year	Day of Year	Hour	Minute	Second	Latitude	Longitude
1991	215	23	35	57	42.266702	-69.756035
1991	215	23	36	59	42.266615	-69.753441
1991	215	23	37	57	42.266508	-69.75087
1991	215	23	38	58	42.266443	-69.749603
1991	215	23	39	59	42.266336	-69.747025
1991	215	23	41	0	42.266252	-69.744431
1991	215	23	42	1	42.266146	-69.741875
1991	215	23	42	58	42.266081	-69.740608
1991	215	23	43	59	42.260244	-69.730888
1991	215	23	45	1	42.260092	-69.728294
1991	215	23	46	2	42.260031	-69.727028
1991	215	23	47	3	42.259878	-69.724472
1991	215	23	48	0	42.259748	-69.721916
1991	215	23	48	50	42.259641	-69.719521
1991	215	23	50	3	42.259558	-69.717094
1991	215	23	51	4	42.259516	-69.715889
1991	215	23	52	5	42.259428	-69.71357
1991	215	23	53	3	42.259321	-69.711296
1991	215	23	54	5	42.259191	-69.709
1991	215	23	55	6	42.259149	-69.707825
1991	215	23	56	7	42.259062	-69.705505
1991	215	23	57	4	42.258955	-69.703209
1991	215	23	58	6	42.258871	-69.700981
1991	215	23	59	7	42.258825	-69.699844
1991	216	0	0	8	42.258783	-69.697563
1991	216	0	1	9	42.258701	-69.692802
1991	216	0	2	10	42.258659	-69.690353
1991	216	0	3	7	42.258636	-69.689133
1991	216	0	4	8	42.258613	-69.686684
1991	216	0	5	10	42.258571	-69.684303
1991	216	0	6	11	42.258529	-69.681877
1991	216	0	7	12	42.258487	-69.679474
1991	216	0	8	9	42.258464	-69.678253
1991	216	0	9	10	42.258399	-69.675812
1991	216	0	10	12	42.258335	-69.673363
1991	216	0	11	13	42.25827	-69.670891
1991	216	0	12	14	42.25827	-69.66967
1991	216	0	13	13	42.258228	-69.667206
1991	216	0	14	12	42.258163	-69.664757
1991	216	0	15	13	42.258121	-69.662331
1991	216	0	16	15	42.258098	-69.66111
1991	216	0	16	56	42.258033	-69.658577
1991	216	0	21	0	42.257842	-69.650017





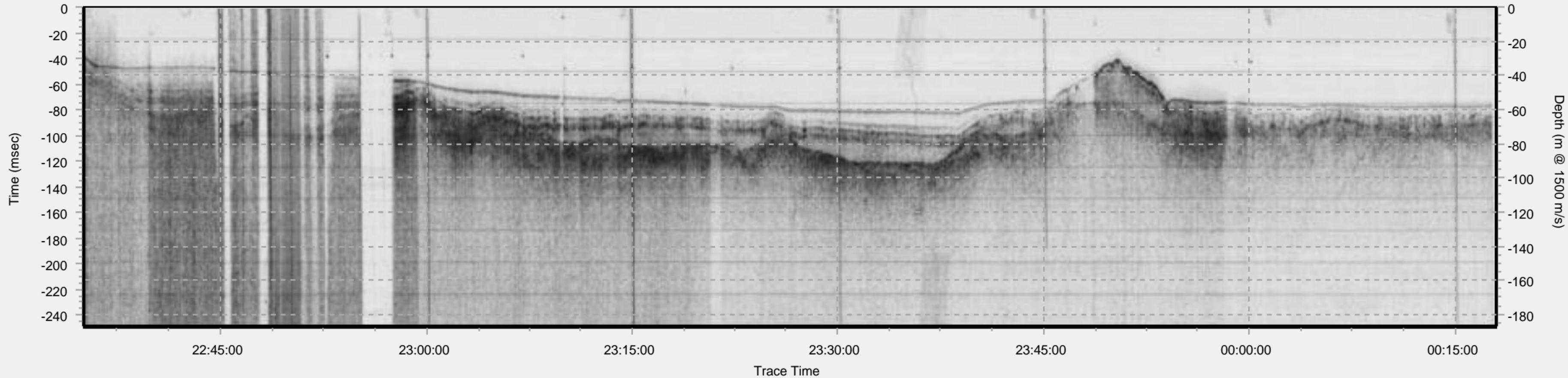
SEISMIC DATA INVENTORY  
1991 NSF ENDEAVOR CRUISE

LINE #	LINE	START TIME	START TIME	GROPULSE ROLL #
1	8/3	1700	8/3 0148	1
2	8/4	0148	8/4 0524	1
3	8/4	0524	8/4 0819	1
END OF LINE EN-91-3 @ 0819 MOVING TO CORE SITE PC-91-1				
4	8/4	1250	8/4 2226	1
5	8/5	0016	8/5 0804	1
6	8/5	0945	8/5 1101	1
7	8/5	1101	8/5 1627	1
8	8/5	1627	8/5 1820	1,2
8			8/5 1838	2
9	8/5	1838	8/5 2058	2
10	8/5	2058	8/5 2351	2
END OF LINE EN-91-10 @ 2351 MOVING TO CORE SITE PC-91-2 & PC-91-3				
11	8/6	0912	8/6 1700	2
12	8/6	1700	8/6 2129	2
13	8/6	2129	8/7 0013	2
END OF LINE EN-91-13 @ 0013 MOVING TO CORE SITES PC-91-4 & PC-91-5				
14	8/7	0742	8/7 0904	2
15	8/7	0904	8/7 1127	2
16	8/7	1127	8/7 1730	2
17	8/7	1730	8/7 2039	2
END OF LINE EN-91-17 @ 2039 MOVING TO CORE SITE PC-91-6				
18	8/8	0000	8/8 0649	3
19	8/8	0649	8/8 1337	3
END OF LINE EN-91-19 @ 1337 MOVING TO CORE SITE PC-91-7				
20	8/8	1700	8/8 2148	3
END OF LINE EN-91-20 @ 2148 MOVING TO CORE SITE PC-91-8				
21	8/9	0038	8/9 1047	3
22	8/9	1047	8/9 1230	3
END OF LINE EN-91-22 @ 1230 MOVING TO CORE SITE PC-91-9				
23	8/9	1508	8/9 1838	3,4
23			8/9 2251	4
24	8/9	2251	8/10 0015	4
25	8/10	0015	8/10 0820	4
26	8/10	0820	8/10 1144	4
BREAK IN SURVEY DUE TO BAD WEATHER				
27	8/10	2145	8/10 2331	4
28	8/10	2331	8/11 0427	4
29	8/11	0427	8/11 0524	4,5
29			8/11 1200	5
30	8/11	1200	8/11 1637	5
END OF LINE EN-91-30 @ 1637 MOVING TO CORE SITE PC-91-10				
31	8/11	1900	8/11 2336	5
32	8/11	2336	8/12 0235	5
33	8/12	0235	8/12 0837	5
34	8/12	0839		5,6
34			8/12 1203	6

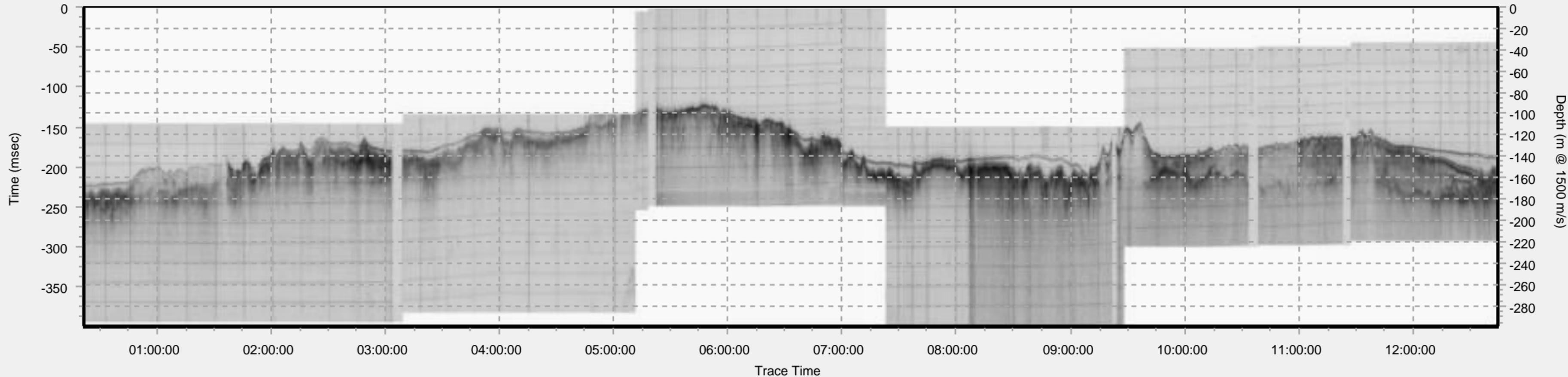
<b>SEISMIC DATA INVENTORY</b>					
<b>GULF OF MAINE</b>		<b>R/V Endeavor</b>	<b>CRUISE EN-226</b>		
<b>University of Maine</b>		<i>Compiled by Daniel F. Belknap, 2021</i>			
		(add + 4 hr for GMT (Z) found on SAIL data)			
<b>ROLL number</b>	<b>Subroll</b>	<b>Tracklines</b>	<b>Date</b>	<b>Time (EDT)</b>	<b>Location</b>
<b>ORE Geopulse - 9" Rolls</b>					
Roll - 01	Roll 1A	EN226-91-01	08/03/91	17:00 to	S. Wilkinson Basin W - E
			08/04/91	01:45	
		EN226-91-02	08/04/91	01:45 - 05:24	Franklin Swell to Rodgers SW - NE
		EN226-91-03	08/04/91	05:24 - 08:19	Rodgers Basin W - E
		Break for core 91-01			
		EN226-91-04	08/04/91	12:50 - 22:15	Rodgers Basin - Franklin Basin - Georges Bank, NNW - SSE
		Break for core search			
	Roll 1B	EN226-91-05	08/05/91	00:16 - 08:04	Wright Swell - Lindenkohl Basin, SSW - NNE
		EN226-91-06	08/05/91	09:45 - 11:00	Lindenkohl Basin
		Break for core search			
		EN226-91-07	08/05/91	11:00 - 16:27	Lindenkohl Knoll - W. Georges Basin - Georges Bank N - S
		EN226-91-08 (partial)	08/05/91	16:27 - 18:15	Georges Bank - Georges Basin
Roll - 02	Roll 2A	EN226-91-08 (cont'd)	08/05/91	18:20 - 18:38	Georges Basin ESE - WNW
		EN226-91-09	08/05/91	18:38 - 20:58	Georges Bank NNE - SSW
		EN226-91-10	08/05/91	20:58 - 23:47	W. Georges Basin SE - NW
		Break for cores 91-02 and 03			
		EN226-91-11	08/06/91	09:12 - 17:00	Georges Basin NW - SE
		EN226-91-12	08/06/91	17:00-21:30	Georges Basin S - N
		EN226-91-13	08/06/91	21:30 to	Deepest Georges Basin W - E
			08/07/91	00:13	
		Break for cores 91-04, 05			
	Roll 2B	EN226-91-14	08/07/91	07:45 - 09:04	Deepest Georges Basin NE - SW
		EN226-91-15	08/07/91	09:04 - 11:27	Deepest Georges Basin SE - NW
		EN226-91-16	08/07/91	11:27 - 17:30	Gerges Basin to Crowell Basin S-N
		EN226-91-17	08/07/91	17:30 - 20:40	Crowell Basin W - E
		Break for core 91-06			
Roll - 03	Roll 3A	EN226-91-18	08/08/91	00:00 - 06:49	Crowell Basin - Truxton Swell - Jordan Basin, SE - NW
		EN226-91-19	08/08/91	06:49 - 13:37	Jordan Basin SE - NW
		Break for core 91-07			
		EN226-91-20	08/08/91	17:00 - 21:48	W. Jordan Basin S - N
		Break for core 91-08			
	Roll 3B	EN226-91-21	08/09/91	00:38 - 10:46	Jordan Bas. - Platts Bas. ENE-WSW
		EN226-91-22	08/09/91	10:46 - 12:32	Platts Basin NNE - SSW
		Break for core 91-09			
		EN226-91-23 (partial)	08/09/91	15:07 - 18:30	Platts Bas. - Wilkinson ENE - WSW
Roll - 04	Roll 4A	EN226-91-23 (cont'd)	08/09/91	18:38 - 22:51	Jedge - Jeffreys Basin NNE - SSW
		EN226-91-24	08/09/91	22:51 to	Jeffreys Basin NNE - SSW
			08/10/91	01:15	
		EN226-91-25	08/10/91	01:15 - 08:20	Jeffreys Basin - Jeffreys Ledge - N. Wilkinson Basin W - E
	Roll 4B	EN226-91-26	08/10/91	08:20 - 11:42	Platts Bnk - Wilkinson Bas. NE-SW

		Break for high seas			resume at 91-26 end location
		EN226-91-27	08/10/91	21:43 -23:31	Wilkinson Basin NE-SW
		EN226-91-28	08/10/91	23:31 to	C. Wilkinson Basin WSW - ENE
			08/11/91	04:27	
		EN226-91-29 (partial)	08/11/91	04:27 - 05:22	Wilkinson Basin N - S
Roll - 05	Roll 5A	EN226-91-29 (cont'd)	08/11/91	05:22 - 12:00	Wilkinson Basin N - S
		EN226-91-30	08/11/91	12:00 - 16:38	S. Wilkinson Basin NW - SE
		Break for core 91-10			
	Roll 5B	EN226-91-31	08/11/91	19:01 - 23:36	S. Wilkinson Basin SE - NW
		EN226-91-32	08/11/91	23:36 to	Wilkinson Nasin NE of Cape Cod
			08/12/91	02:35	SE - NW
		EN226-91-33	08/12/91	02:35 - 08:37	Canyons NE of Cape Cod - Stellwagen Bank - Stellwagen Basin ESE - WNW
Roll - 06	Roll 6	EN226-91-34	08/12/91	08:40 - 12:03	Stellwagen Basin - Cape Cod Bay N-S
END OF SEISMIC DATA					
<b>3.5 kHz and 12 kHz PDR - 19" Rolls</b>			*12 kHz for standard Precision Depth Recorder		
			*3.5 kHz generally in support of coring operations		
		<b>Tracklines</b>	<b>Date</b>	<b>Time (EDT)</b>	<b>Location</b>
Roll - 01	12 kHz	EN226-91-01	08/03/91	18:46 to	Wilkinson Basin W - E to Rodgers
		EN226-91-05 (partial)	08/05/91	06:37	Rodgers Bas. SE to Franklin Basin
Roll - 02	12 kHz	EN226-91-05 (cont'd)	08/05/91	06:45 - 09:18	Lindenkohl Basin
		recorder failure			
Roll - 03	3.5 kHz	Coring PC-91-01	08/04/91	09:03 to	Rodgers Basin
		3.5 kHz failure	08/05/91	00:00	
		switch 12 kHz to this recorder			
	12 kHz	EN226-91-06 to	08/05/91	09:00 to	Georges Basin and Georges Bank
		EN226-91-12	08/06/91	20:10	
Roll - 04	3.5 kHz	PC-91-01 traverse	08/04/91	10:00 - 12:37	Hit 10:05 Rodgers Basin
In support of		PC-91-02 traverse	08/05/91	23:58 to	
coring ops			08/06/91	00:45	Hit 00:30 Franklin Basin
(traverses involve		PC-91-03 traverse	08/06/91	05:25 - 08:06	Hit 06:44 Lindenkohl Basin
considerable		PC-91-04 traverse	08/07/91	00:16 - 02:15	Hit 01:39 Georges Basin
course changes		PC-91-05 traverse	08/07/91	04:45 - 07:20	Hit 06:53 Georges Basin
and reversals)		PC-91-06 traverse	08/07/91	20:44 - 22:22	Hit 22:15 Crowell Basin
		PC-91-07 traverse	08/08/91	13:40 - 15:13	Hit 15:11 Truxton Basin
		PC-91-08 traverse	08/08/91	21:56 - 23:08	Hit 23:01 NW Jordan Basin
		PC-91-09 traverse	08/09/91	12:34 - 13:27	Hit 13:27 Platts Basin
		EN226-91-25	08/10/91	07:30 - 08:20	Franklin Basin - Franklin Ridge - Wilkinson Basin W - E
		EN226-91-26 (partial)	08/10/91	08:20 - 11:45	Wilkinson Basin NE - SW
			Weather break		
		EN226-91-26 (cont'd)	08/10/91	19:31 - 21:56	Wilkinson Basin NE - SW
		PC-91-10 traverse	08/11/91	16:38 - 17:28	Hit 17:25 Wilkinson Basin
END OF PDR DATA					

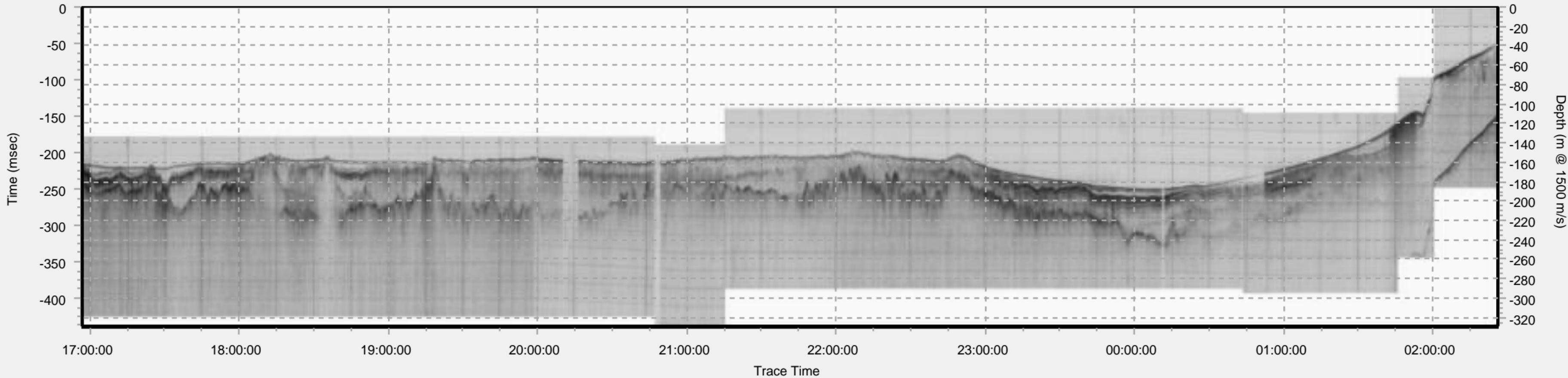
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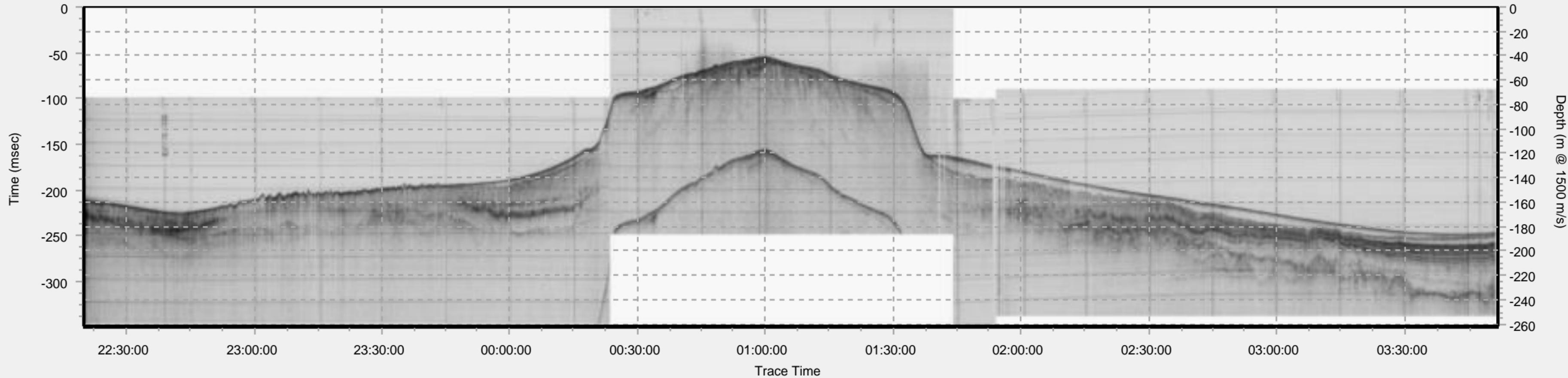
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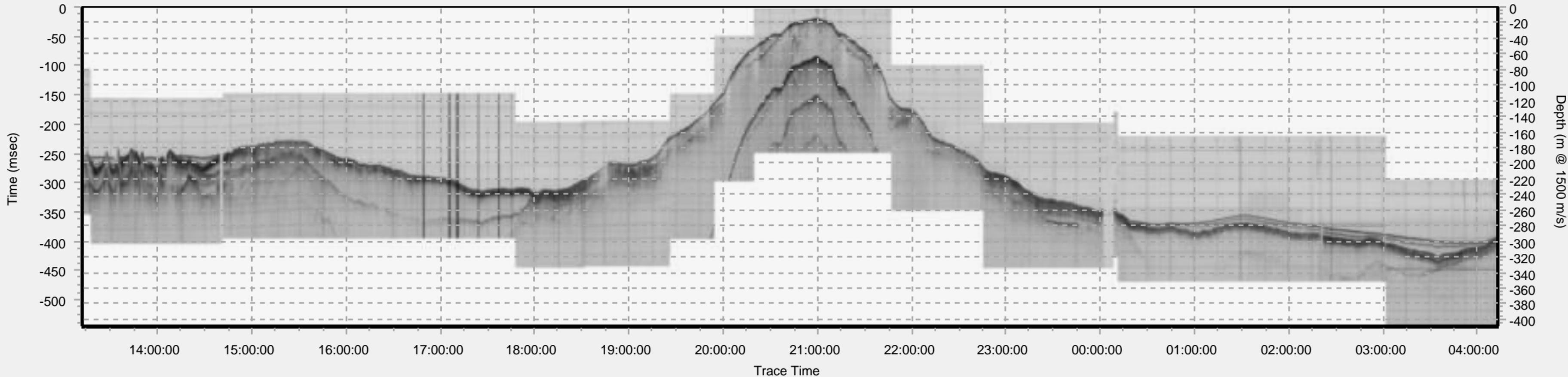
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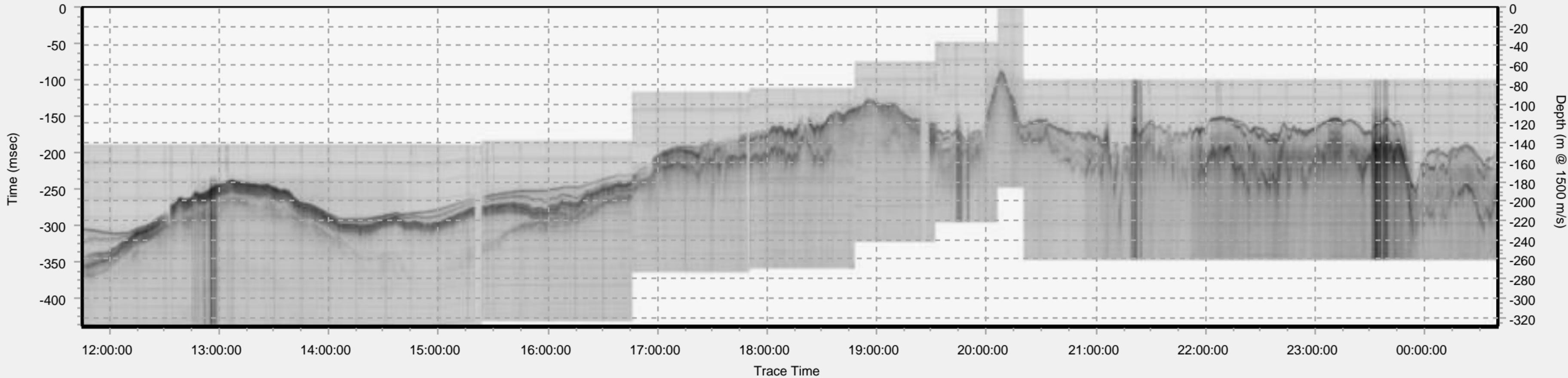
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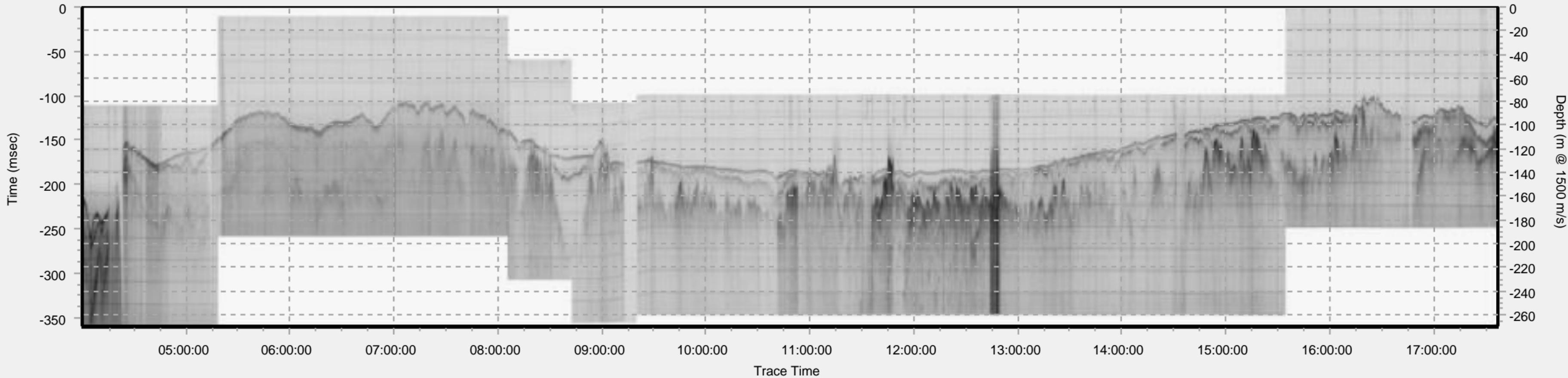
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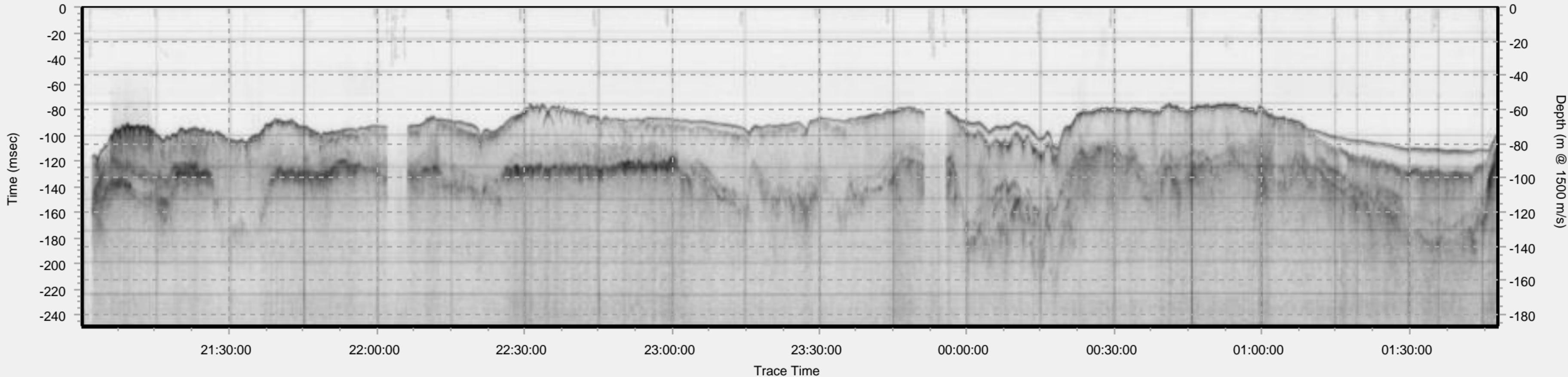
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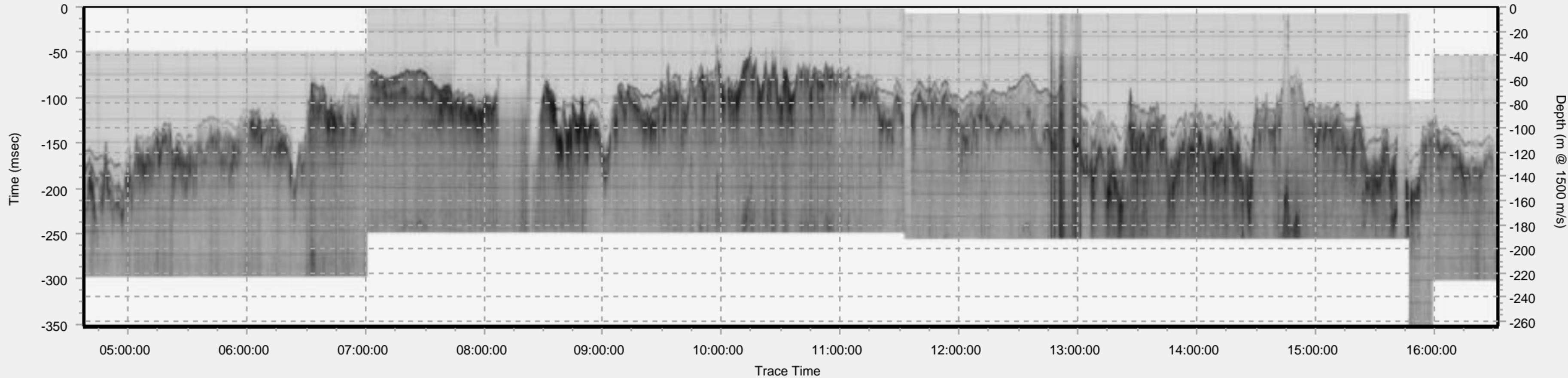
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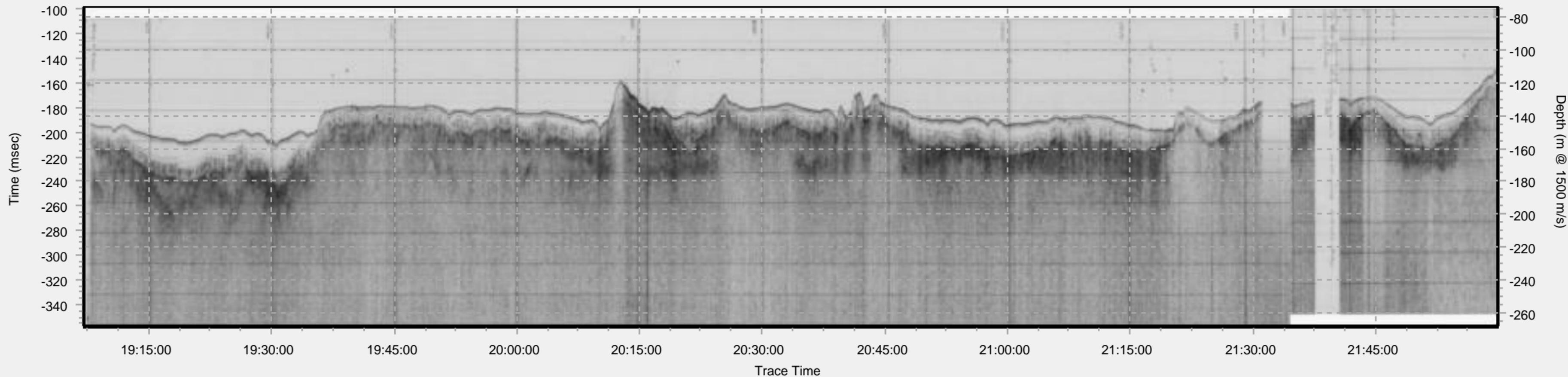
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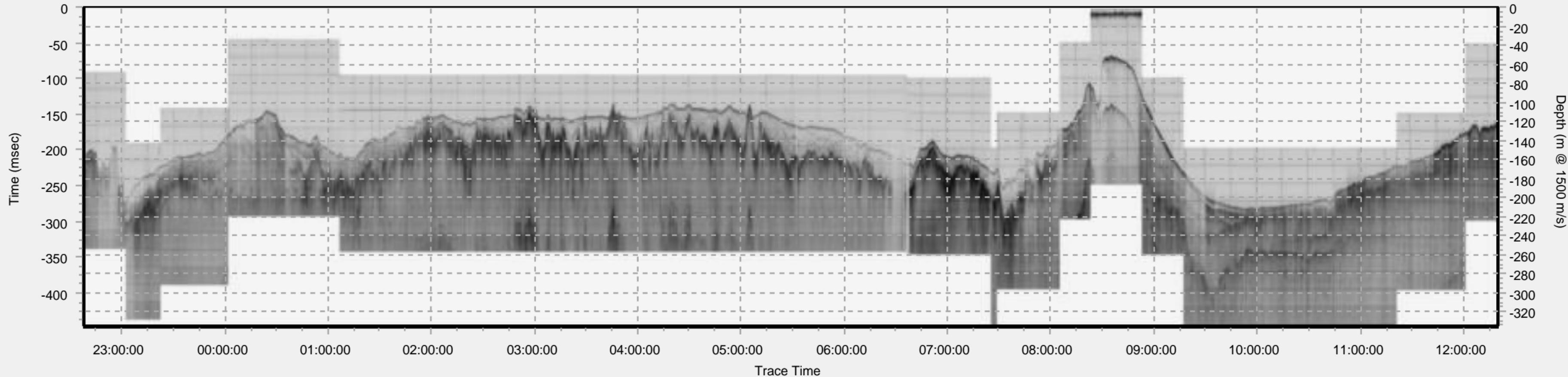
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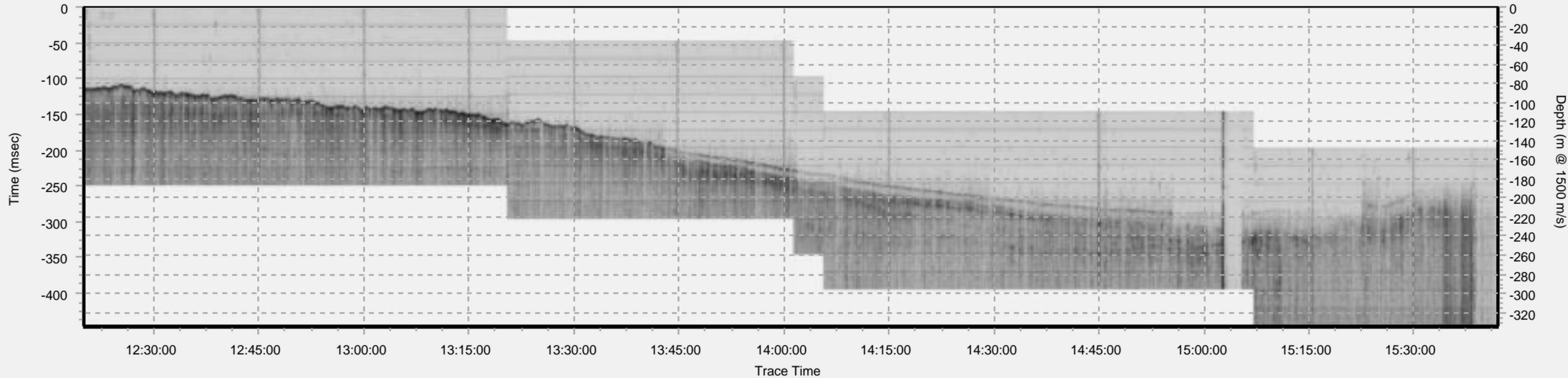
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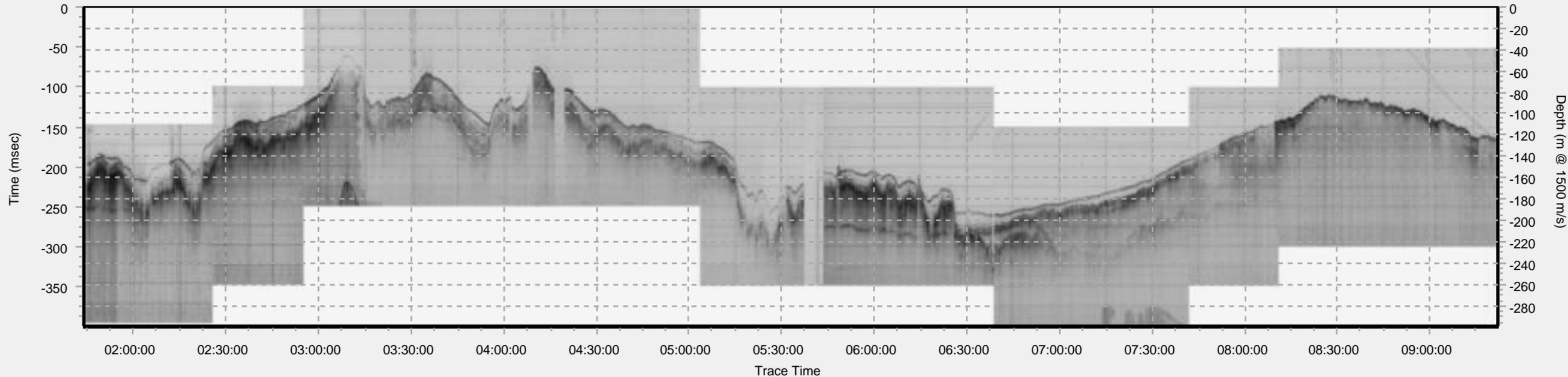
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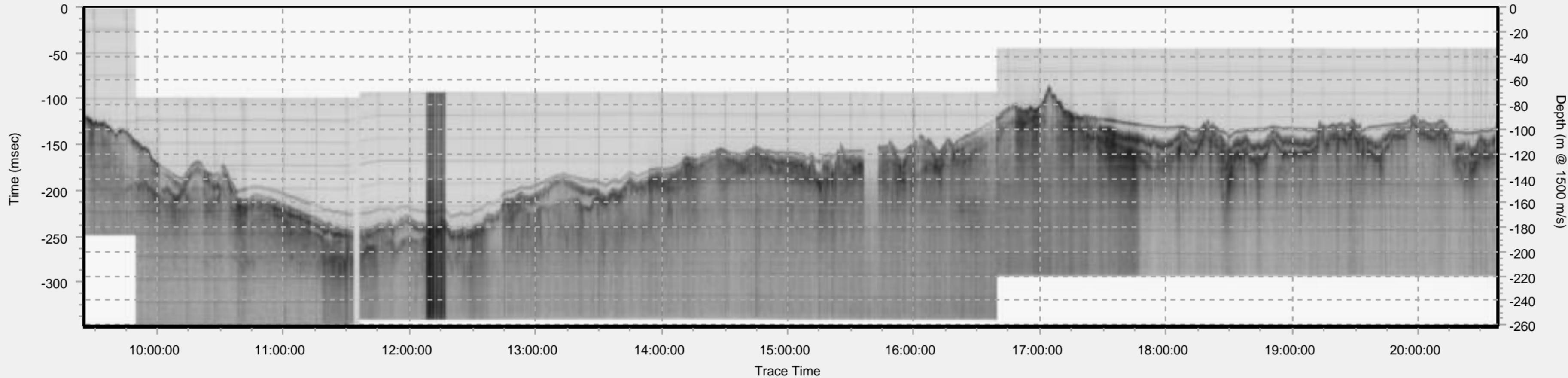
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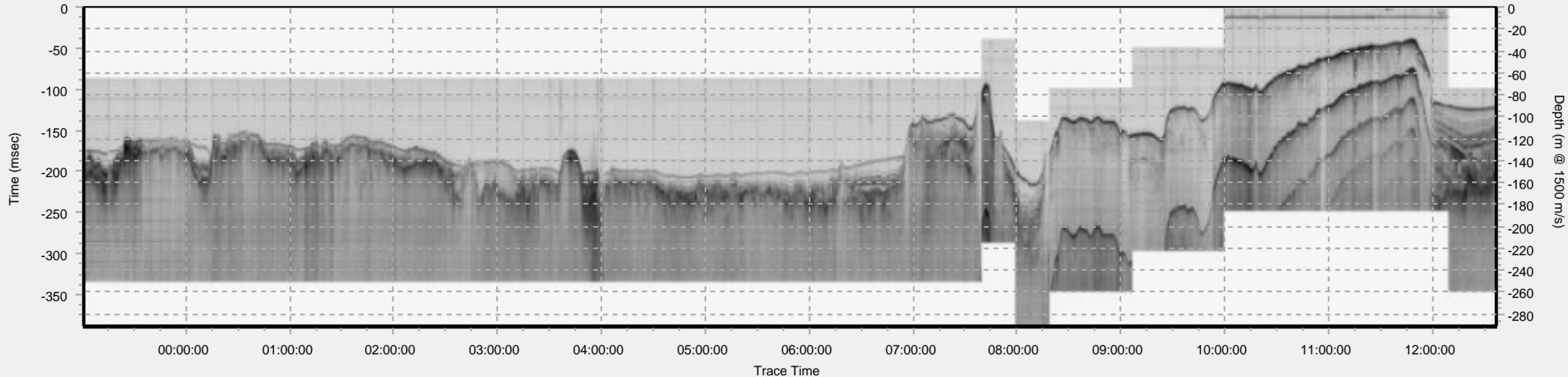
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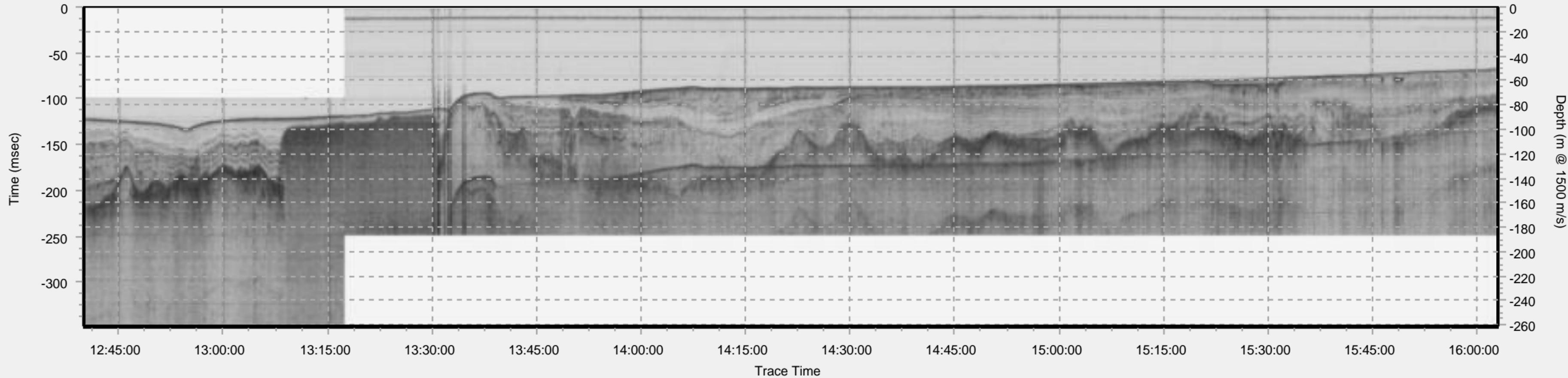
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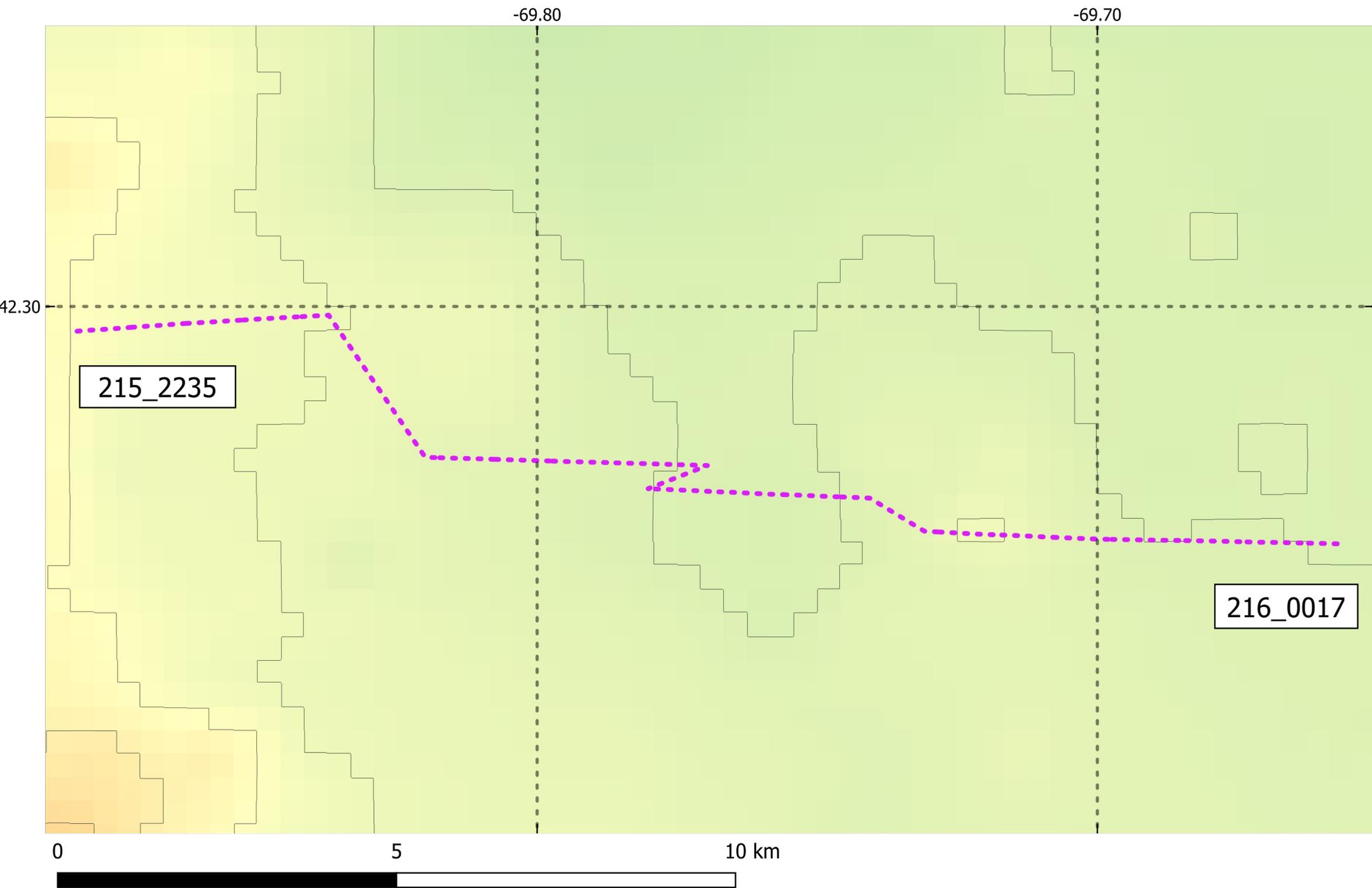
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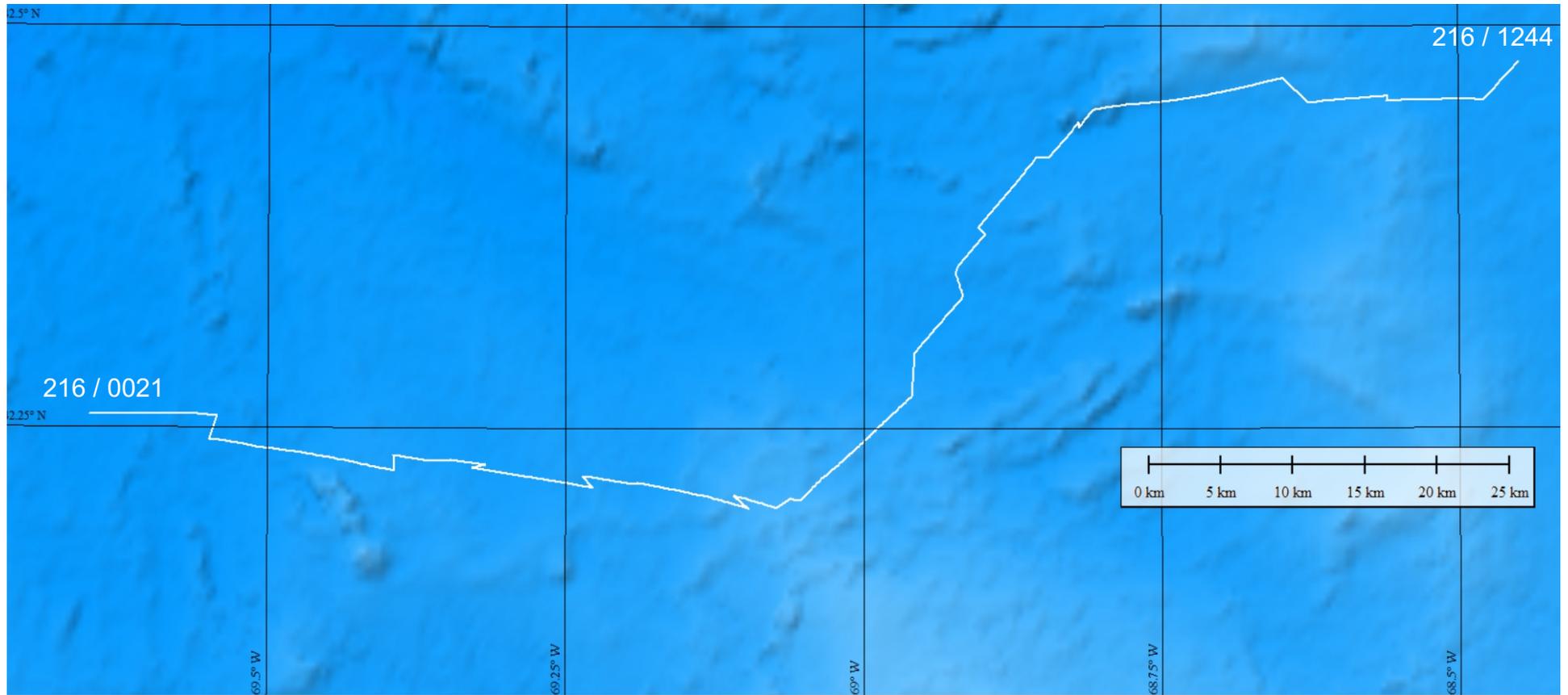
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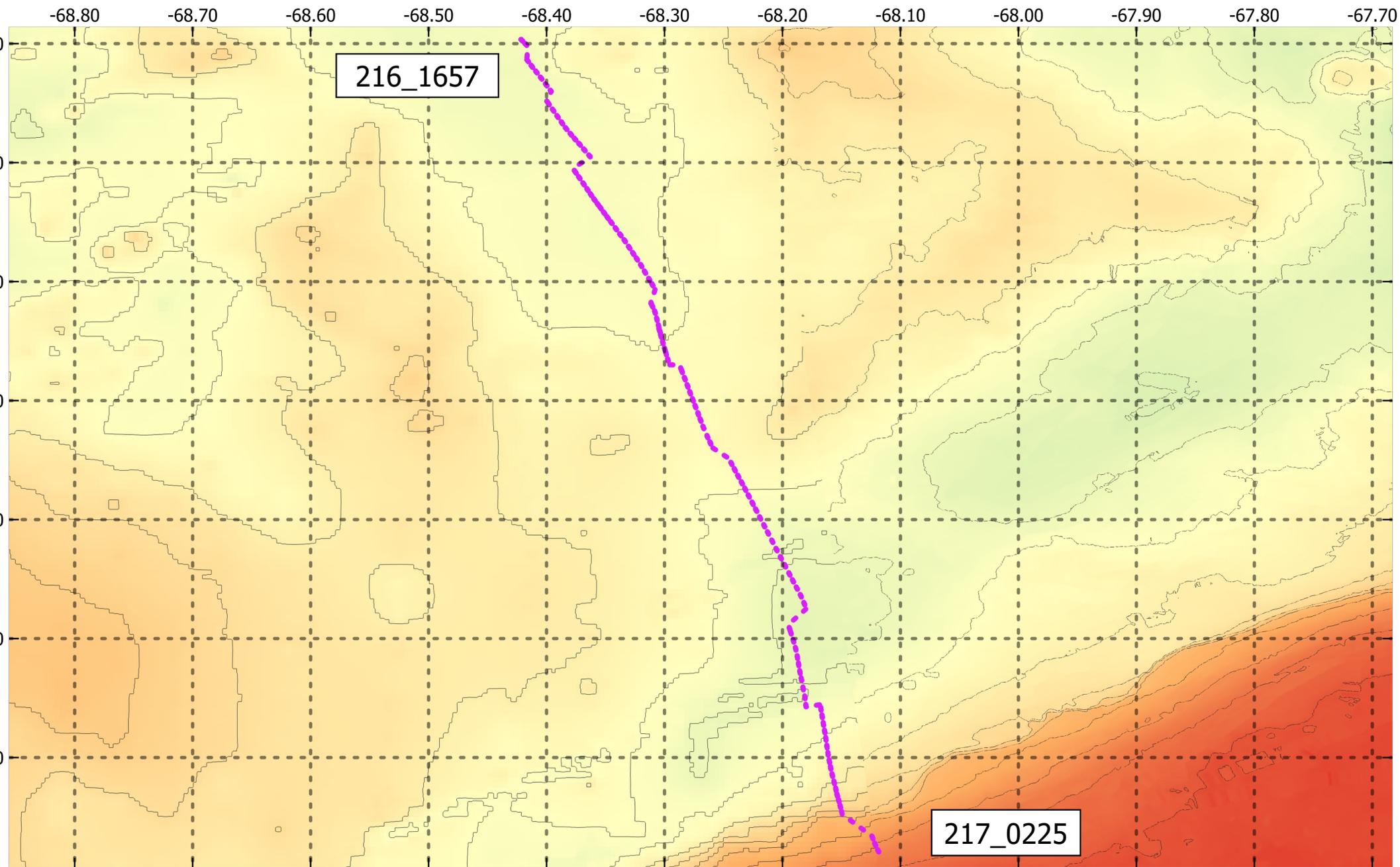
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91ENDEAVOR\_ORE\_SEISMIC\_GEOPULSE\_216\_0021\_to\_216\_1244



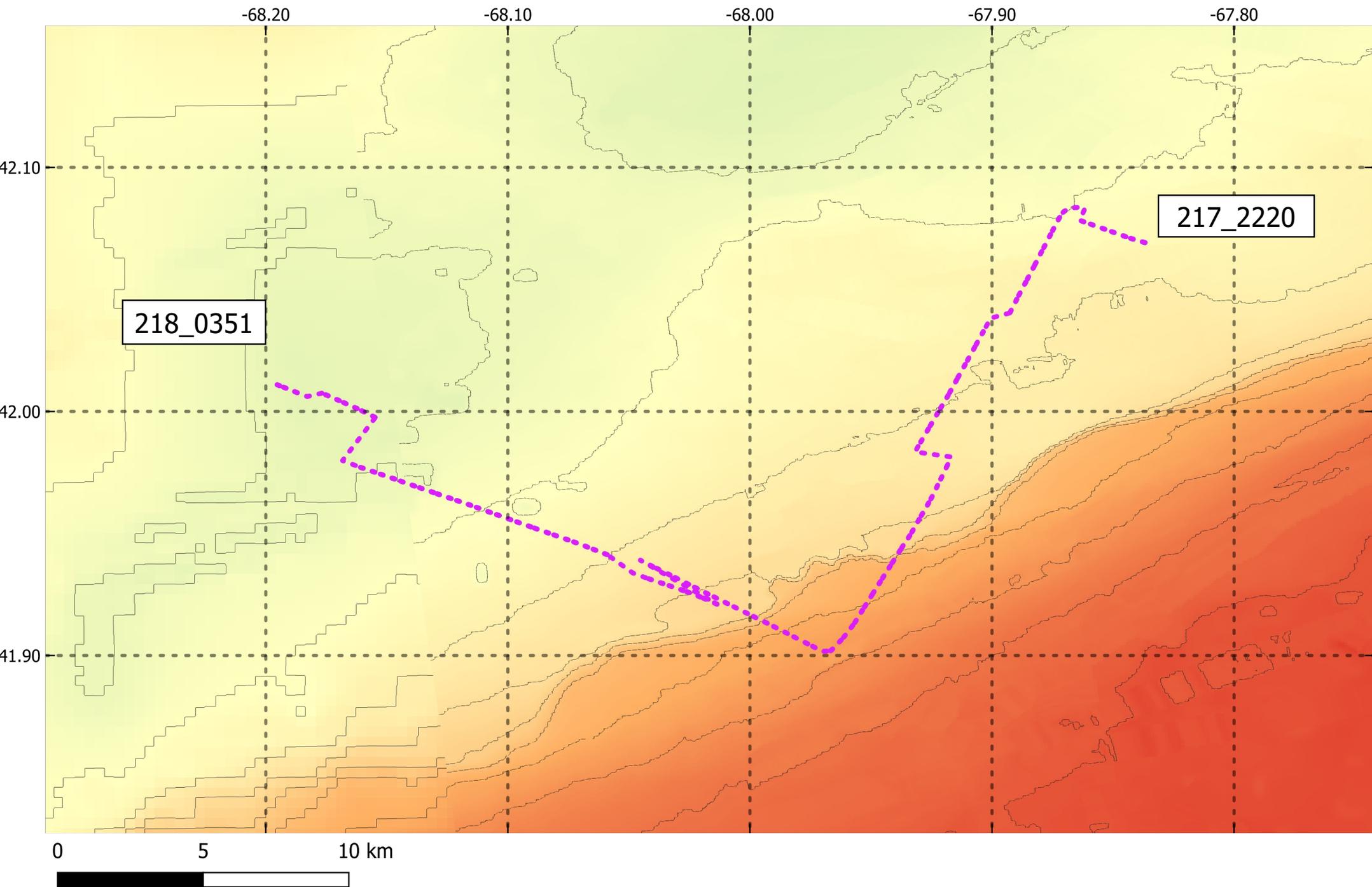
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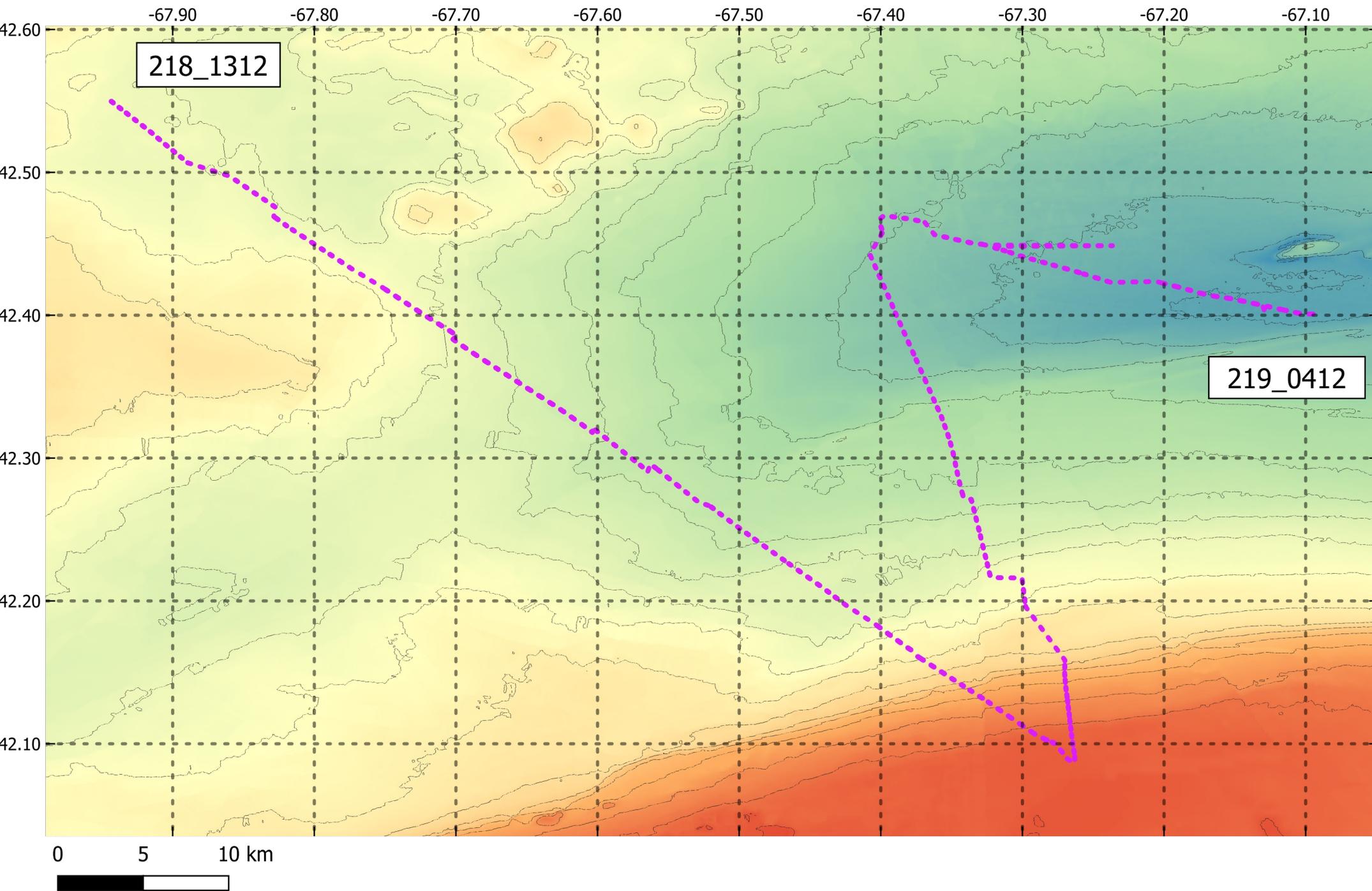
0 5 10 km



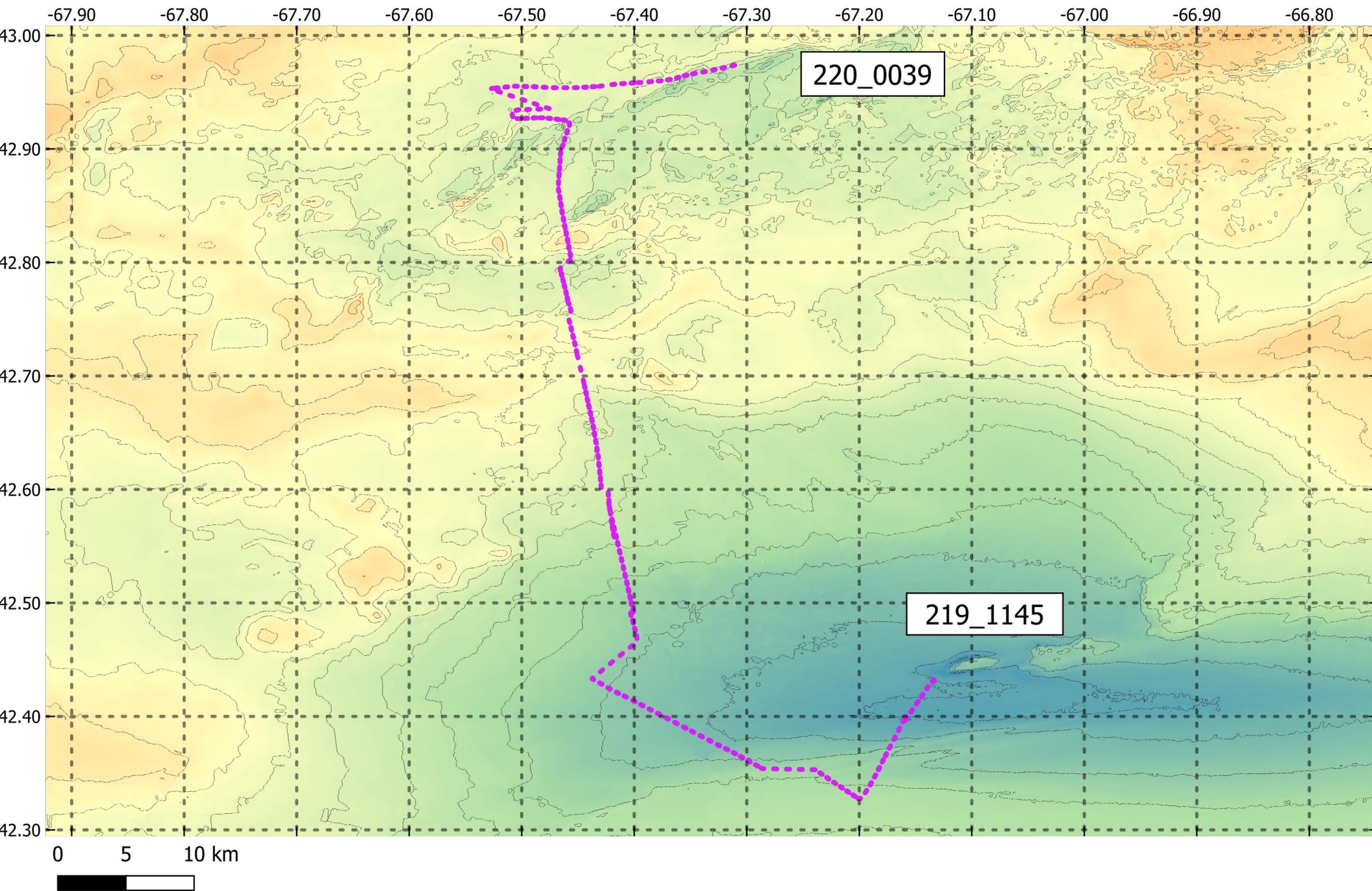
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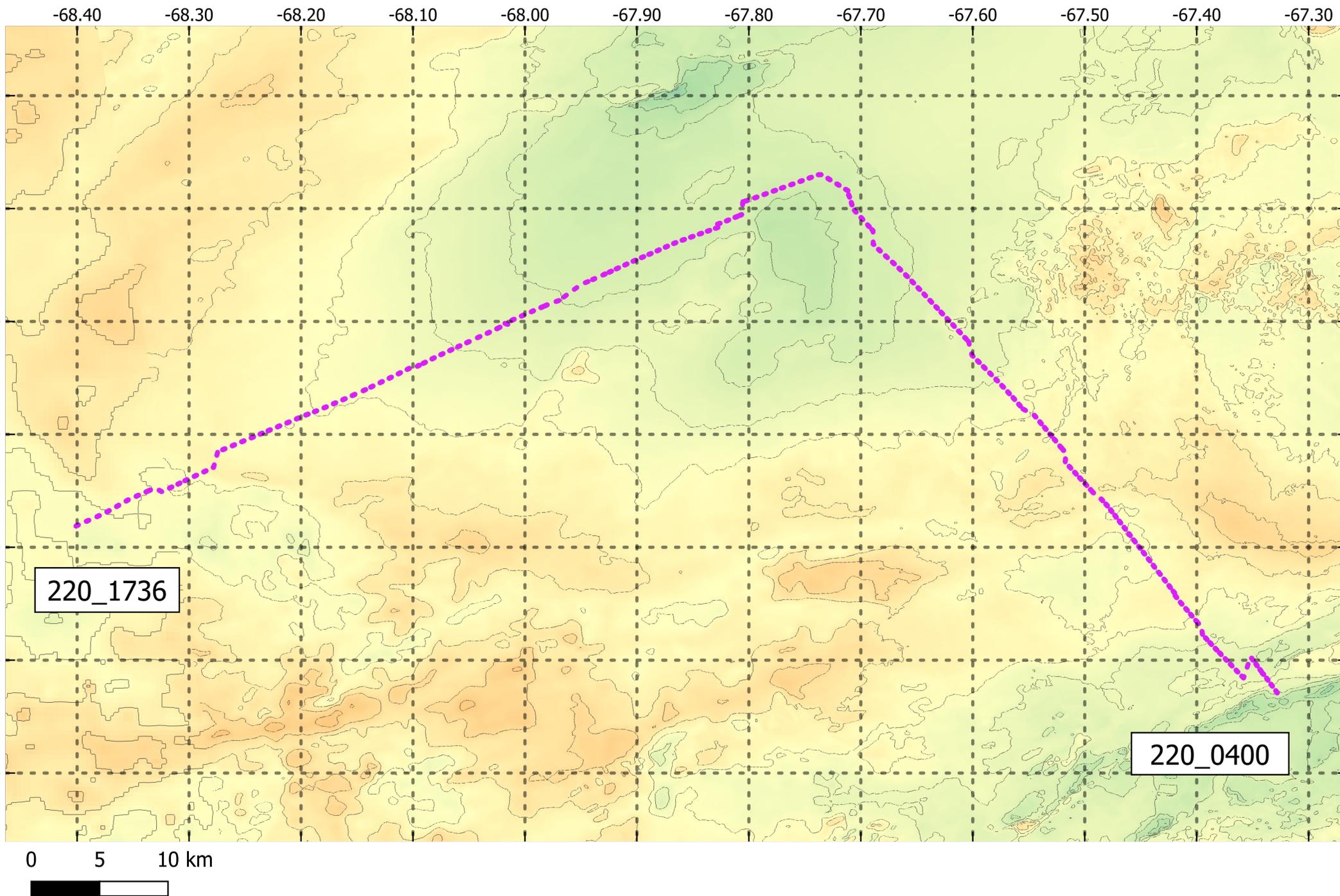
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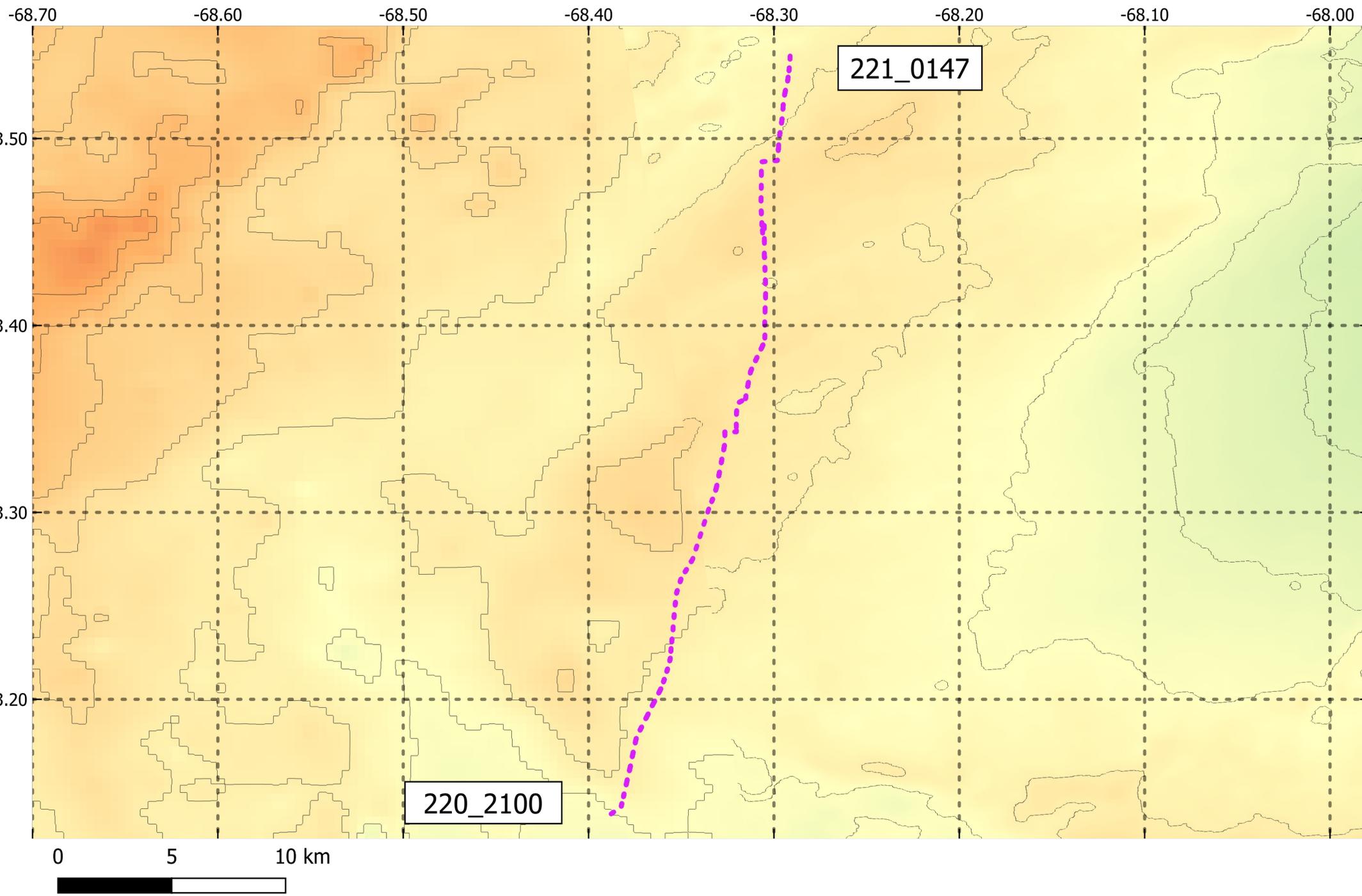
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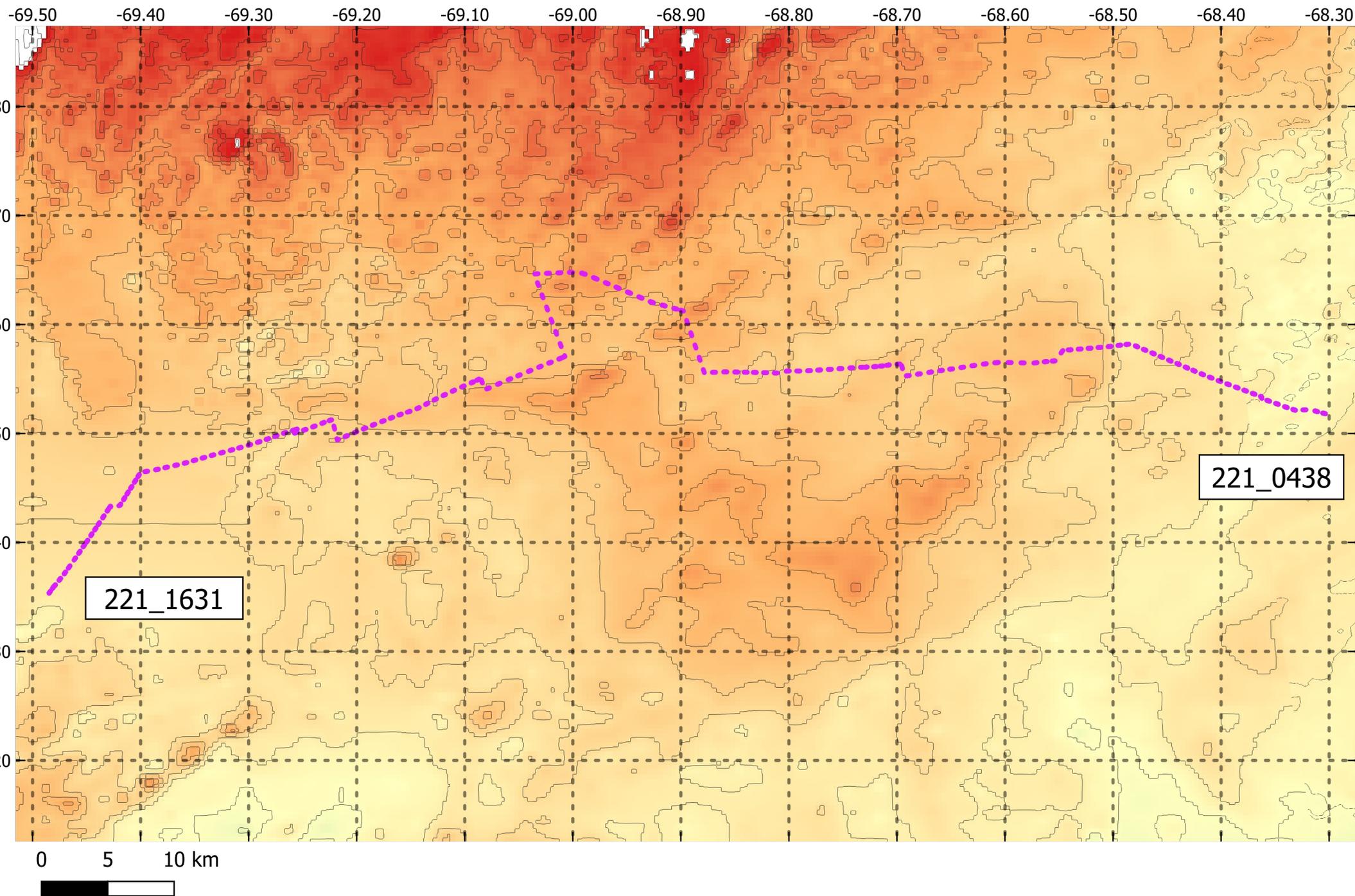
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91ENDEAVOR\_ORE\_SEISMIC\_GEOPULSE\_220\_2100\_to\_221\_0147



91ENDEAVOR\_ORE\_SEISMIC\_GEOPULSE\_221\_0438\_to\_221\_1631



91ENDEAVOR\_ORE\_SEISMIC\_GEOPULSE\_221\_1907\_to\_221\_2159

-69.70

-69.60

-69.50

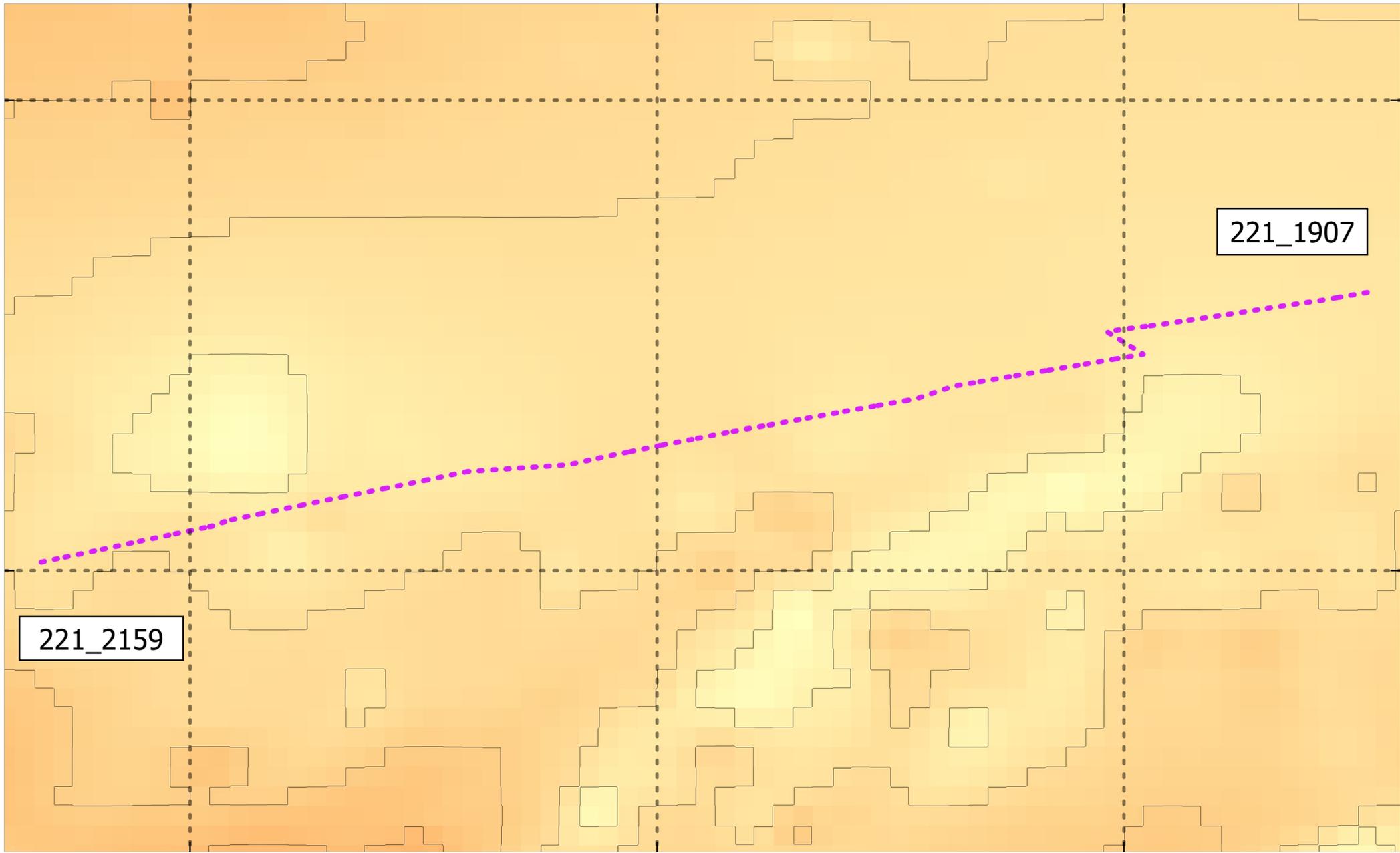
3.40

221\_1907

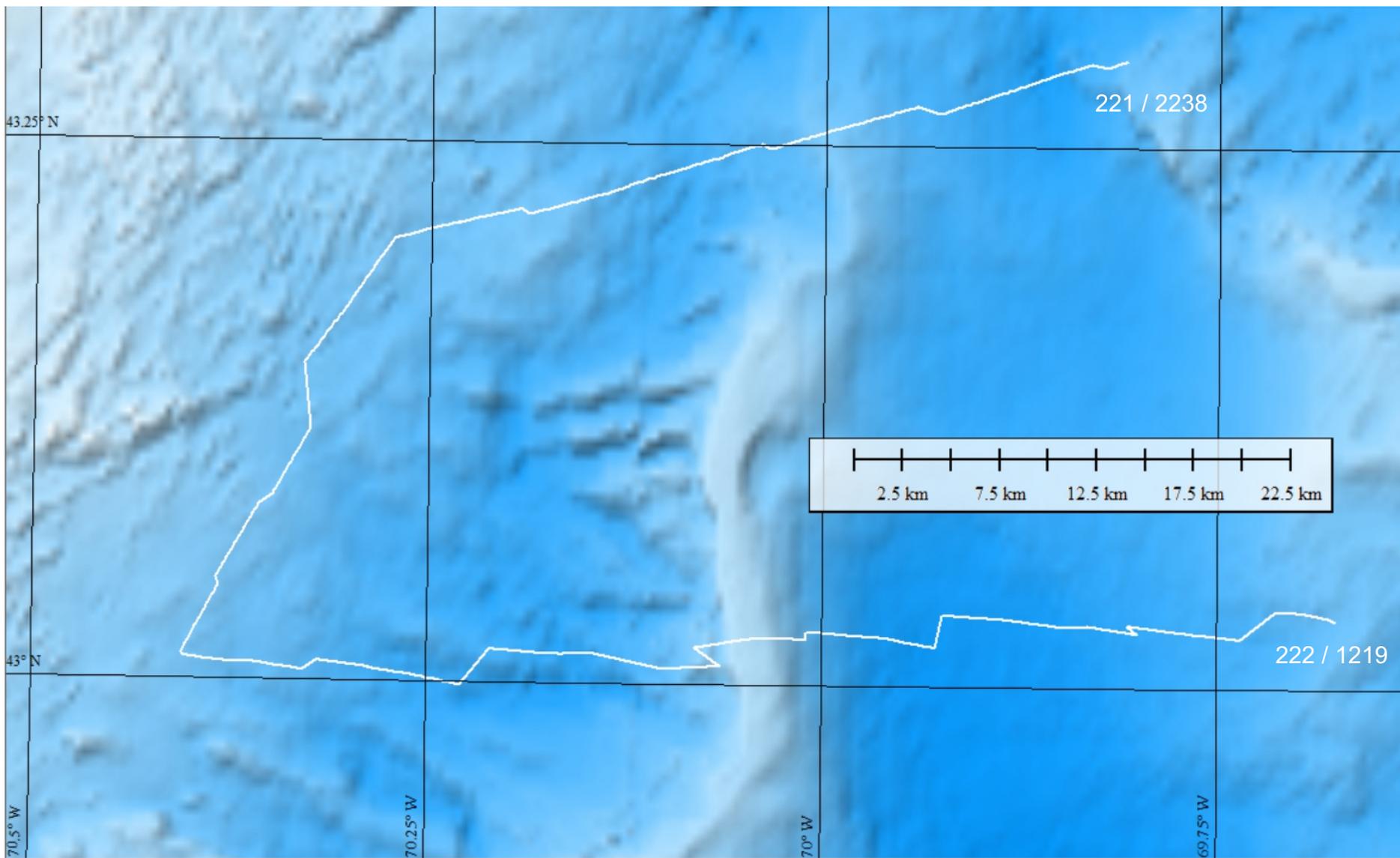
3.30

221\_2159

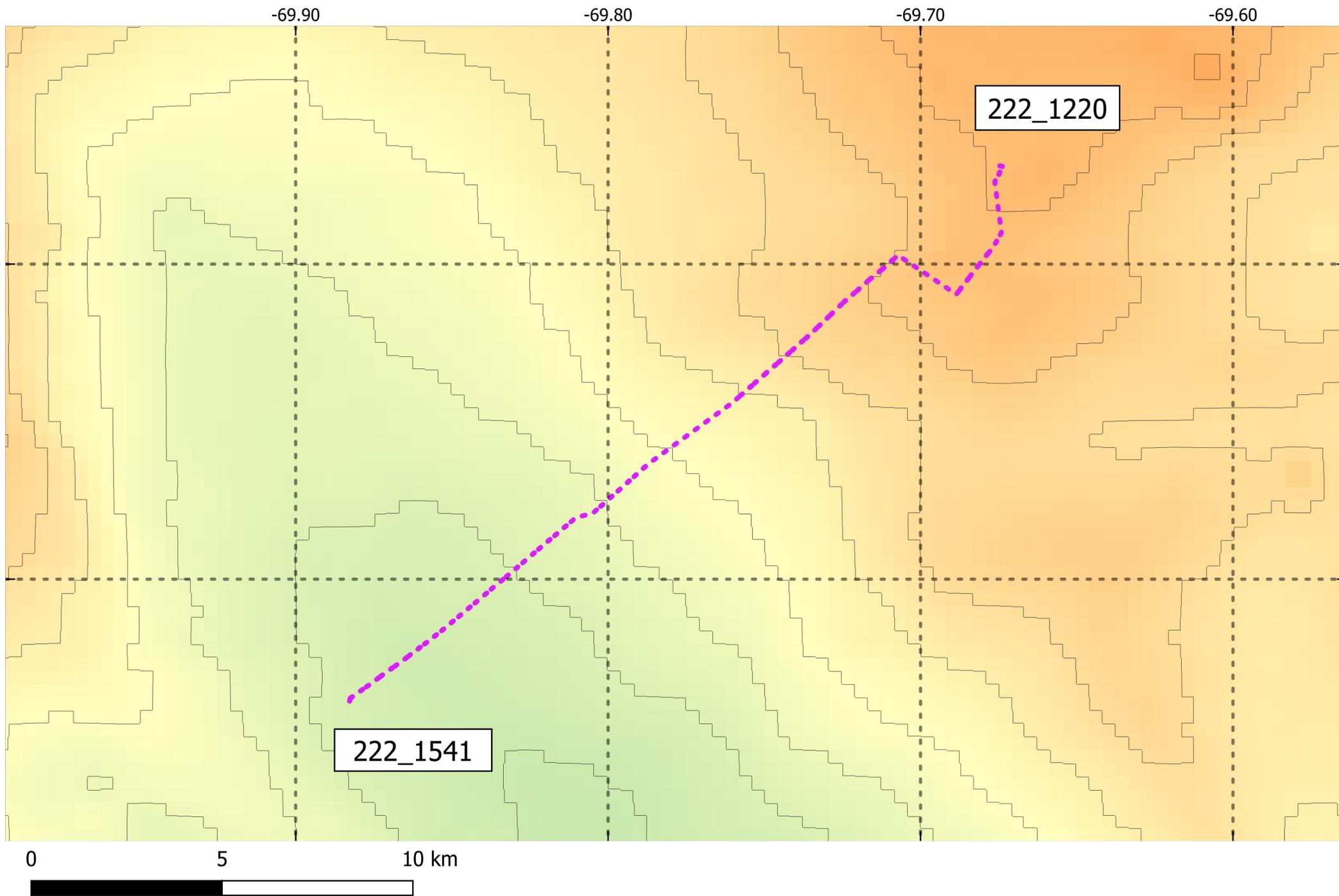
0 5 10 km



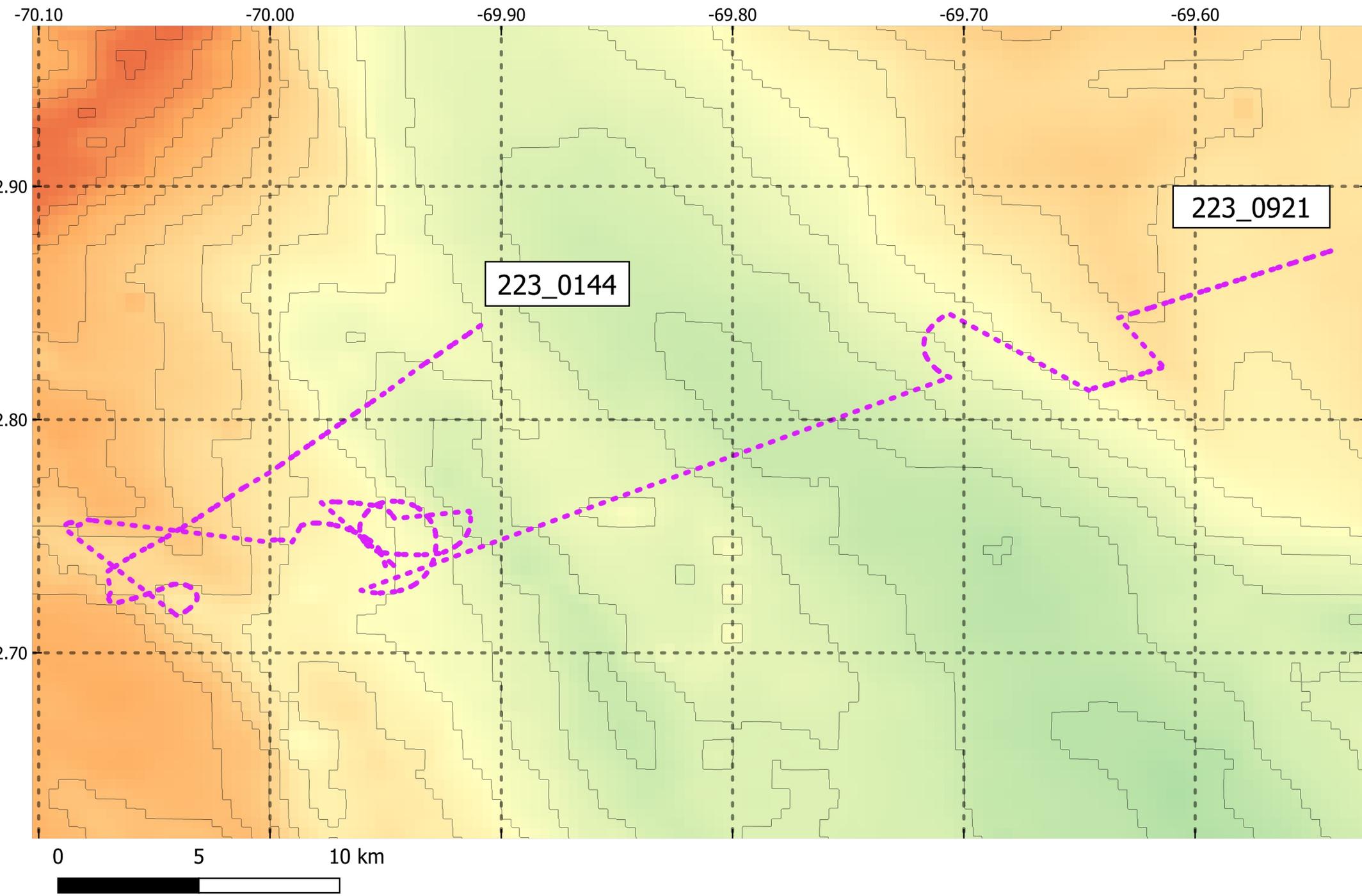
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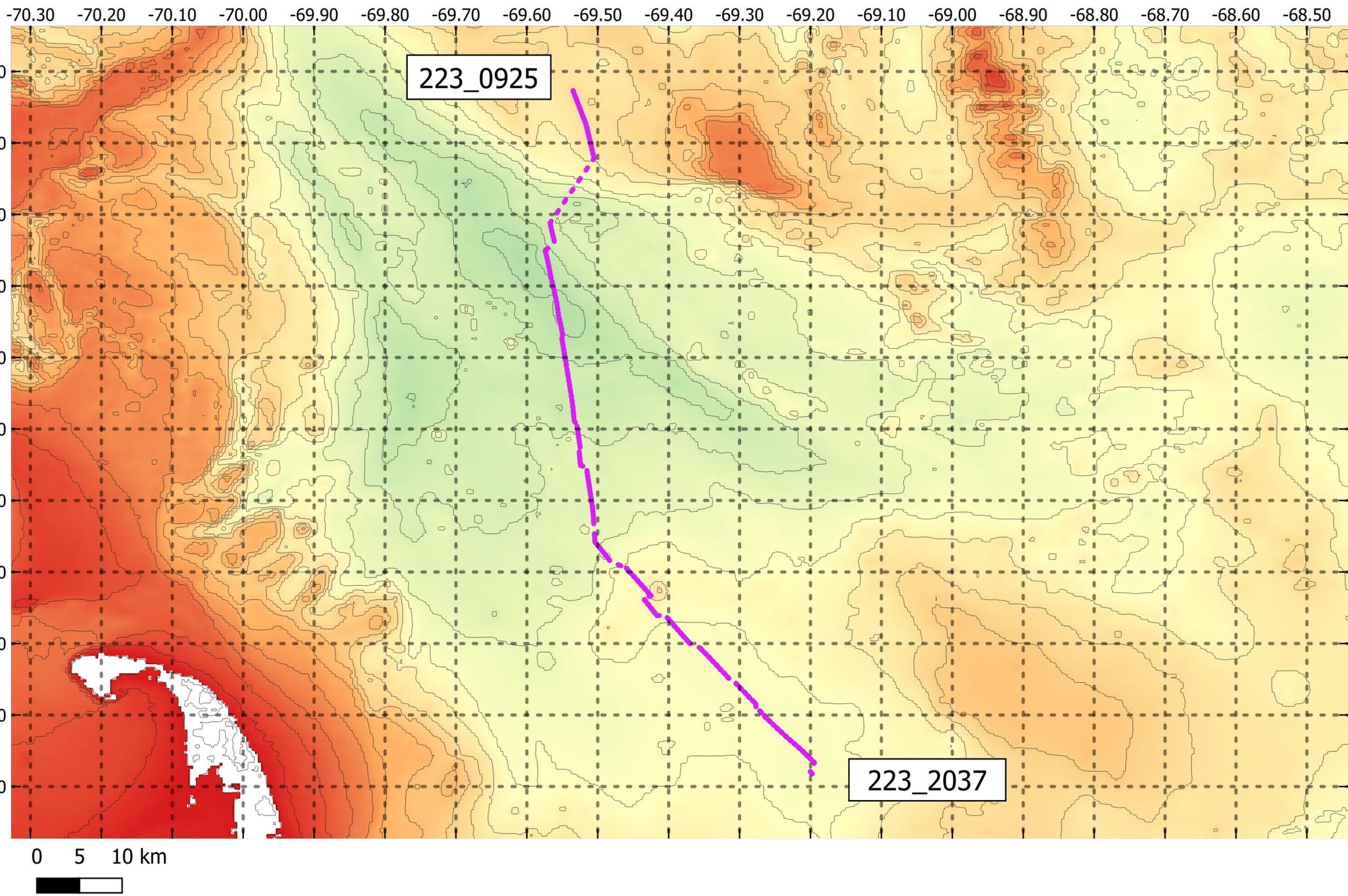
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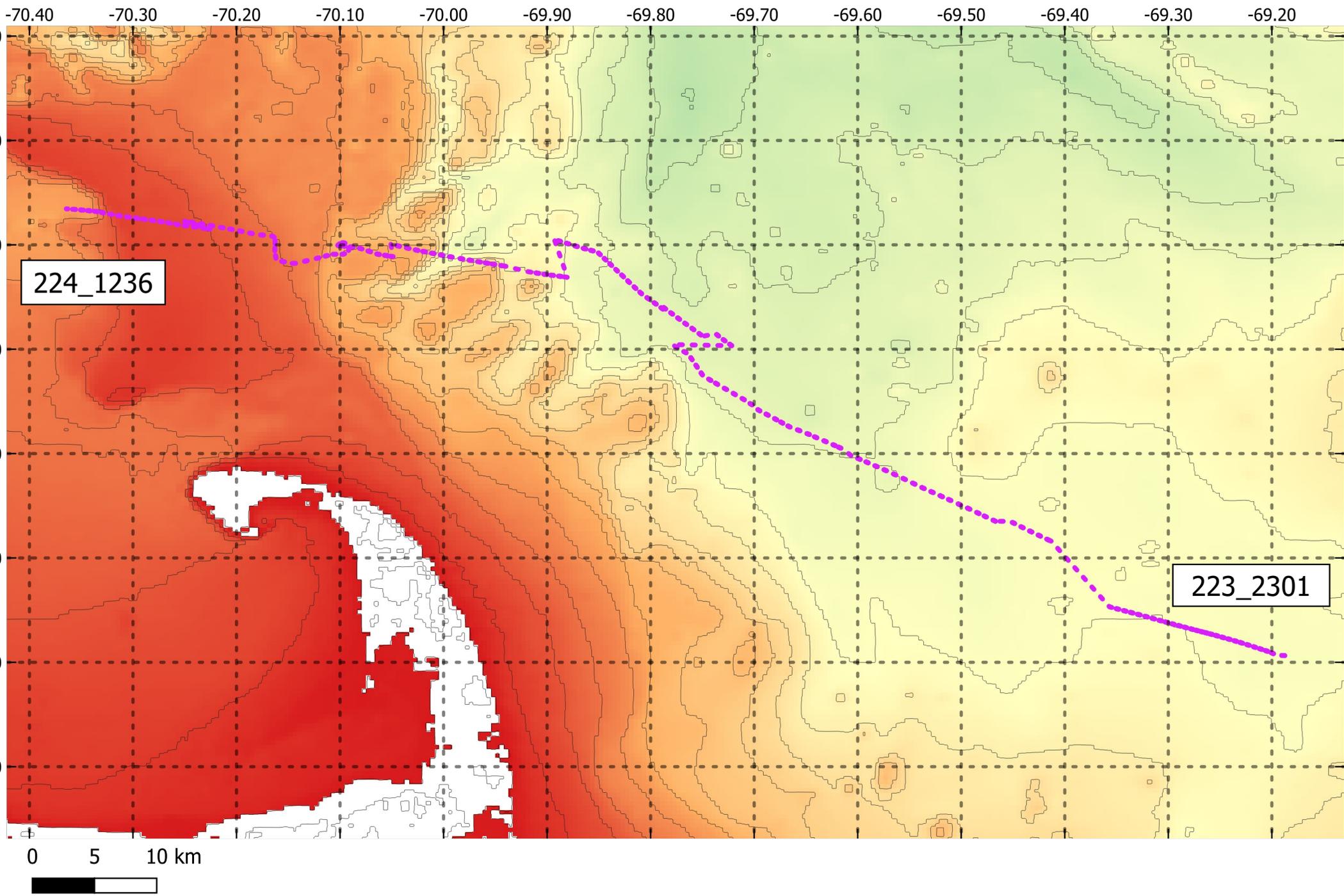
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91ENDEAVOR\_ORE\_SEISMIC\_GEOPULSE\_223\_0925\_to\_223\_2037



91ENDEAVOR\_ORE\_SEISMIC\_GEOPULSE\_223\_2301\_to\_224\_1236



91ENDEAVOR\_ORE\_SEISMIC\_GEOPULSE\_224\_1240\_to\_224\_1602

