



NBP0101 ODEC BATHY2000 CHIRP DATA

In SEGY Format

[Abstract](#)

This document details the processing sequence employed to convert ODEC Bathy2000 data files derived from expedition NBP0101 to SEGY and other derived products.

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Contents

Introduction	2
JPEG2000 SEGY Format (SGYJP2)	3
SEGY File Nomenclature	5
Shape Files	6
3D Imaging	7
Appendix I – Profile Images	8
Disk1A	8
Disk2A (No Navigation in .DAT files)	11
Disk2B (No Navigation in .DAT files)	13
Disk3A (No Navigation in .DAT files)	14
Disk4A (No Navigation in .DAT files)	15
Disk4B (No Navigation in .DAT files)	18
Disk5A (No Navigation in .DAT files)	22
Disk5B	26
Disk6A	31
Disk6B	36
Disk7A	41
Disk7B	44
Disk8A	46
Disk8B	50
Disk9A	53

Introduction

A series of digital CHIRP seismic data files were collected using a ODEC Bathy2000 survey system on expedition NBP0101. These data were transcribed from the original magneto-optical disks to a 64 GB thumbnail USB drive by the client and, then, mailed to Geoforce Group Ltd for assessment and conversion to SEGY format.

A total of 1019 files comprising 5.3 Gbyte of raw ODEC Bathy2000 .DAT-formatted files were received and converted to SEGY standard format. These first-pass SEGY files were then examined and edited to address errors generated during the transcription process. It is not known whether the errors in the files were generated when the original data were recorded or whether errors arose from reading the 17 year-old magneto-optical storage media. It was commonly observed that the last 82 values of each of the echo traces were unset, and sometimes corrupt, and these values were zeroed out in each trace. Some files had many extra false traces with illegal trace header structures. Files containing these features were truncated at the end of the valid data stream.

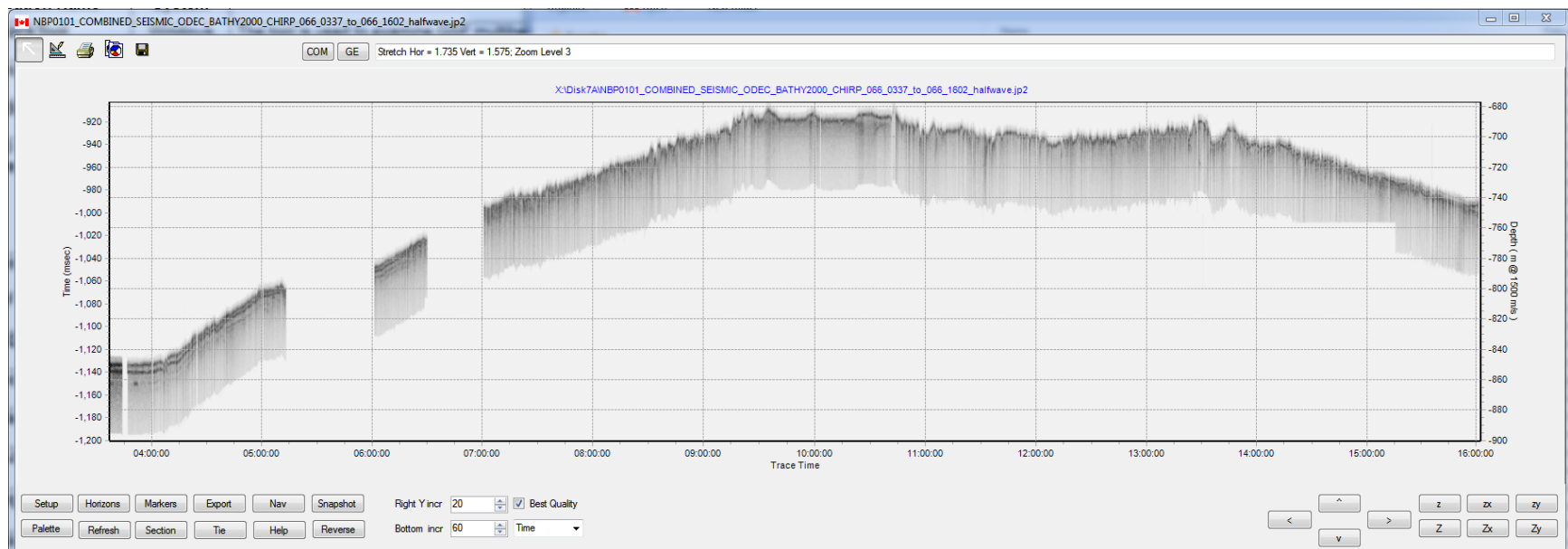
Since the average time duration of each of the files was roughly one hour, individual SEGY files were collated into composite SEGY files with approximately 12 hours of duration. By default, these SEGY files have traces with varying trace delay. Since some seismic interpretation software (e.g., Kingdom Suite) require a fixed trace delay , these files will have to be further processed to add zero padding to achieve a constant trace delay (e.g, http://ftp.maps.canada.ca/pub/nrcan_rncan/raster/marine_geoscience/Seismic_Reflection_Scanned/tools/FixSEGyRecordLength/FixSegyRecordLengthInstall.zip); however, the size of the resultant files may increase substantially.

Images were generated for each of the composite SEGY files and, when navigation was included in the .DAT files, shape files and 3D Google Earth kmz files were produced. Navigation was not present on data disks, Disk2A through Disk5A.

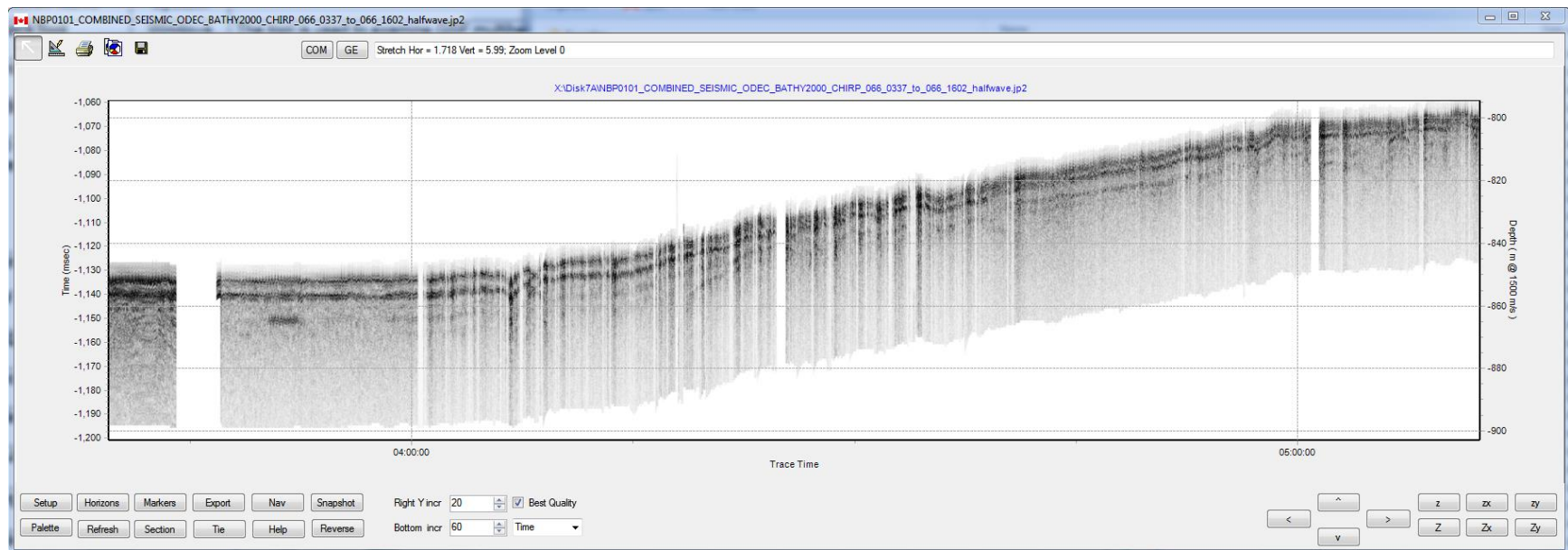
JPEG2000 SEGYP2 Format (SGYJP2)

The combined SEGYP files were then converted to NRCan's JPEG2000 seismic format for imaging; shape files for navigation were extracted where possible.

The JPEG2000 seismic formatted files are included in the processed data and can be viewed using free SEGYP2Viewer (http://ftp.maps.canada.ca/pub/nrcan_rncan/raster/marine_geoscience/Seismic_Reflection_Scanned/tools/SegyJp2Viewer/SegyJp2_Viewer.zip) on Windows 7 or higher platforms.



SegyViewer for segy-formatted JPEG2000 (SGYJP2) files



SGYJP2 files maintain image fidelity across multiple levels of zoom. Data volume is also compressed by 90%. Targets or features of interest can be directly digitized on top of the image and then exported as shape files for inclusion in a GIS.

SEG Y File Nomenclature

The self-documenting nomenclature for the SEG Y files are as follows :

NBP0101_COMBINED_SEISMIC_ODEC BATHY2000_CHIRP_061_1519_to_061_1600.sgy

Where NBP0101_COMBINED_SEISMIC_ODEC BATHY2000_CHIRP identifies the expedition and instruments, 061_1519 denotes the starting time (day_hhmm) in the file and 061_1600 denote the end time of data in the file;

and

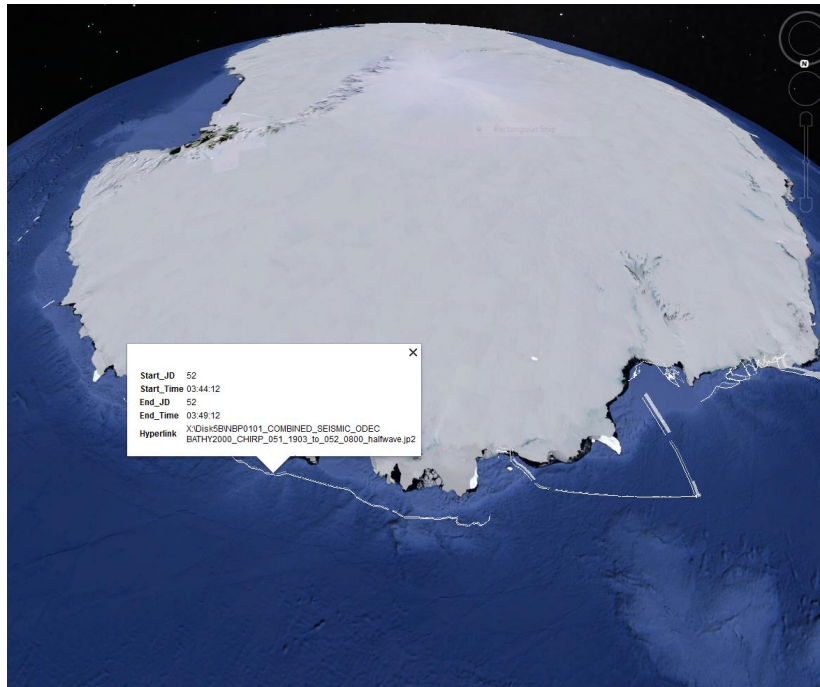
NBP0101_SEISMIC_ODEC BATHY2000_CHIRP_056_0822_to_056_0831.sgy

Designates a single SEG Y file corresponding to one of the ODEC source data files.

Shape Files

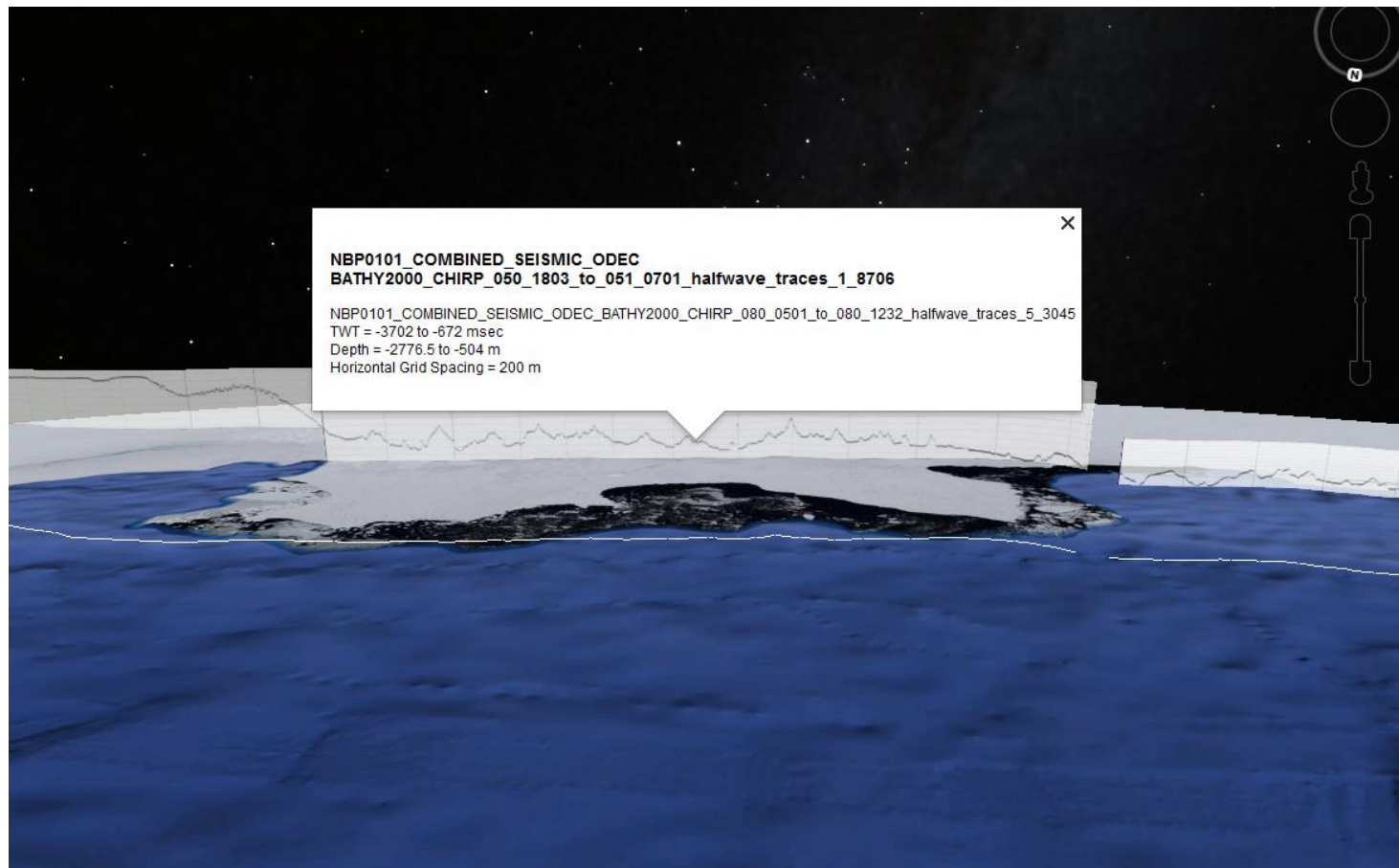
Each composite SEGY file was imaged to assess data quality. Letter-sized PNG images were produced and thumbnails of the printed are in Appendix I. Shape files were generated and are included in the data package produced for this report. Shape files were imported into Google Earth Pro and can be interrogated to identify the SEGY file name and the Day/Time segment of the chosen location on the line. A KMZ containing these shape files is included with the data distribution.

For Disks 2A through 5A, there was no shotpoint navigation included in the .DAT files. In these cases, shape files could not be generated but the SEGY and image files are included. Navigation from another source could potentially be merged in at a later time where available.



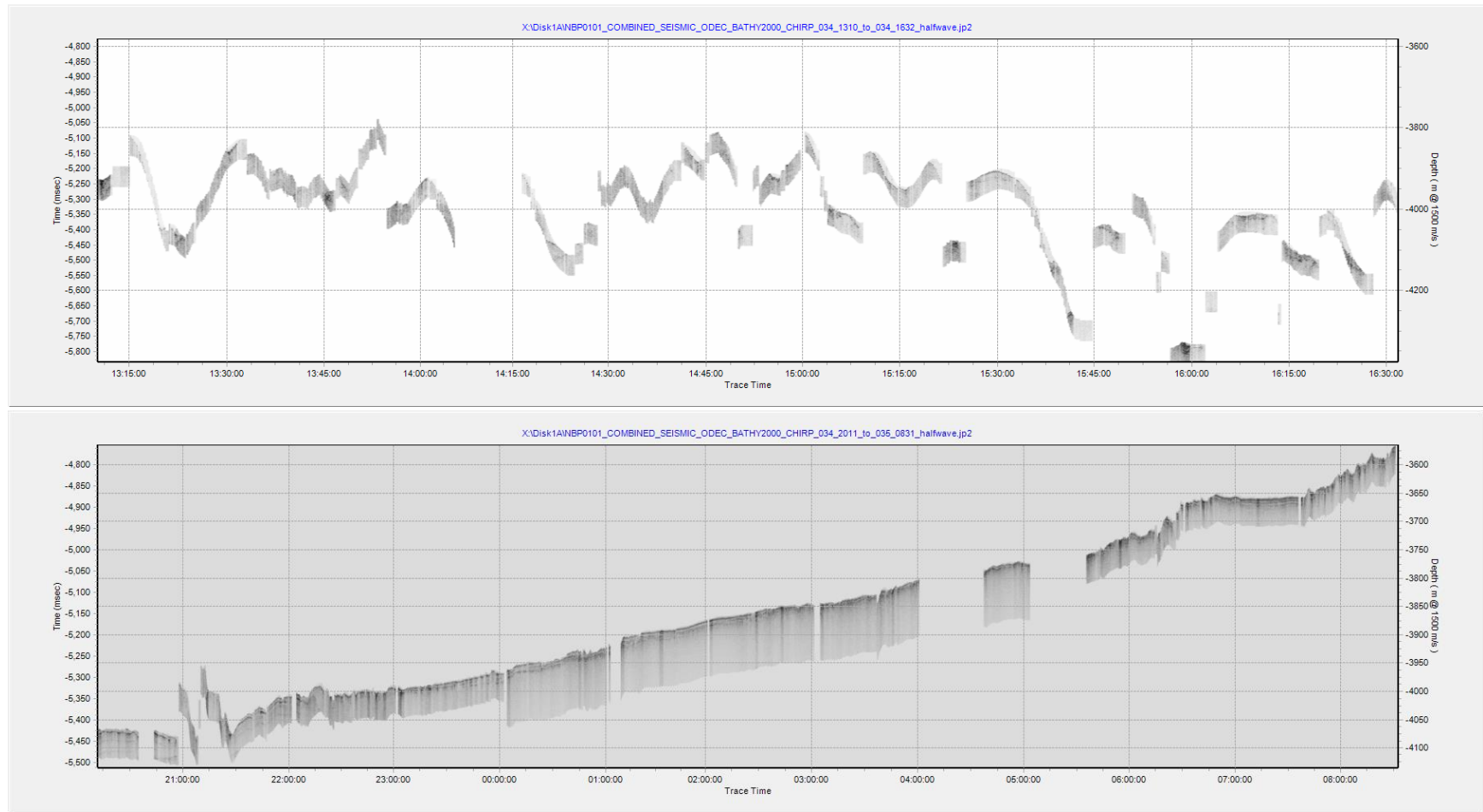
3D Imaging

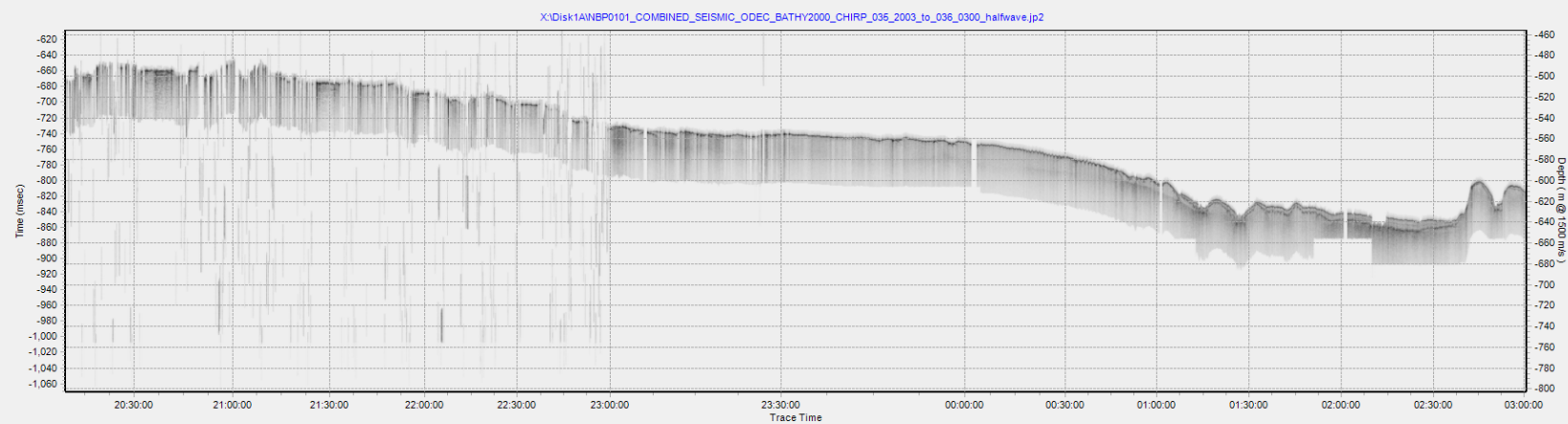
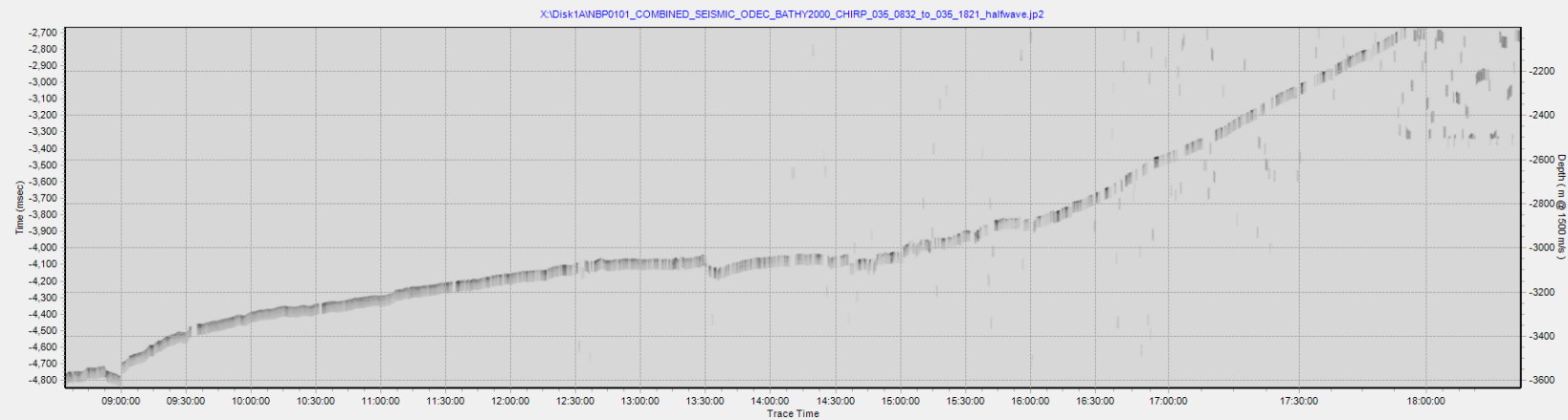
The PNG image files of the combined SEGY data were mapped into 3D along the survey track and imported into Google Earth Pro at a 10:1 vertical exaggeration. These are included in the distribution as a beta-test product.



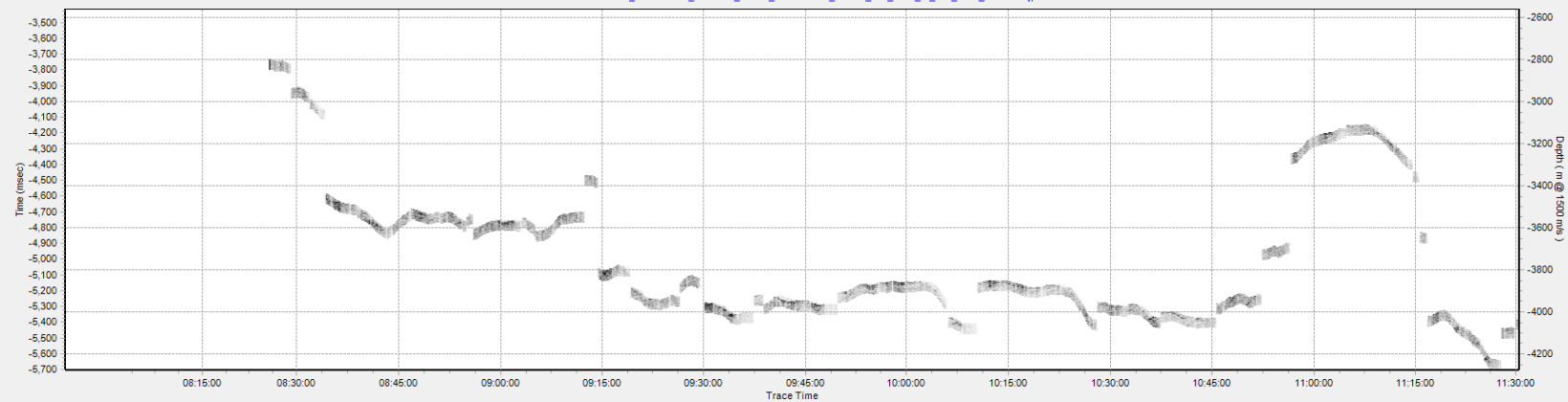
Appendix I – Profile Images

Disk1A

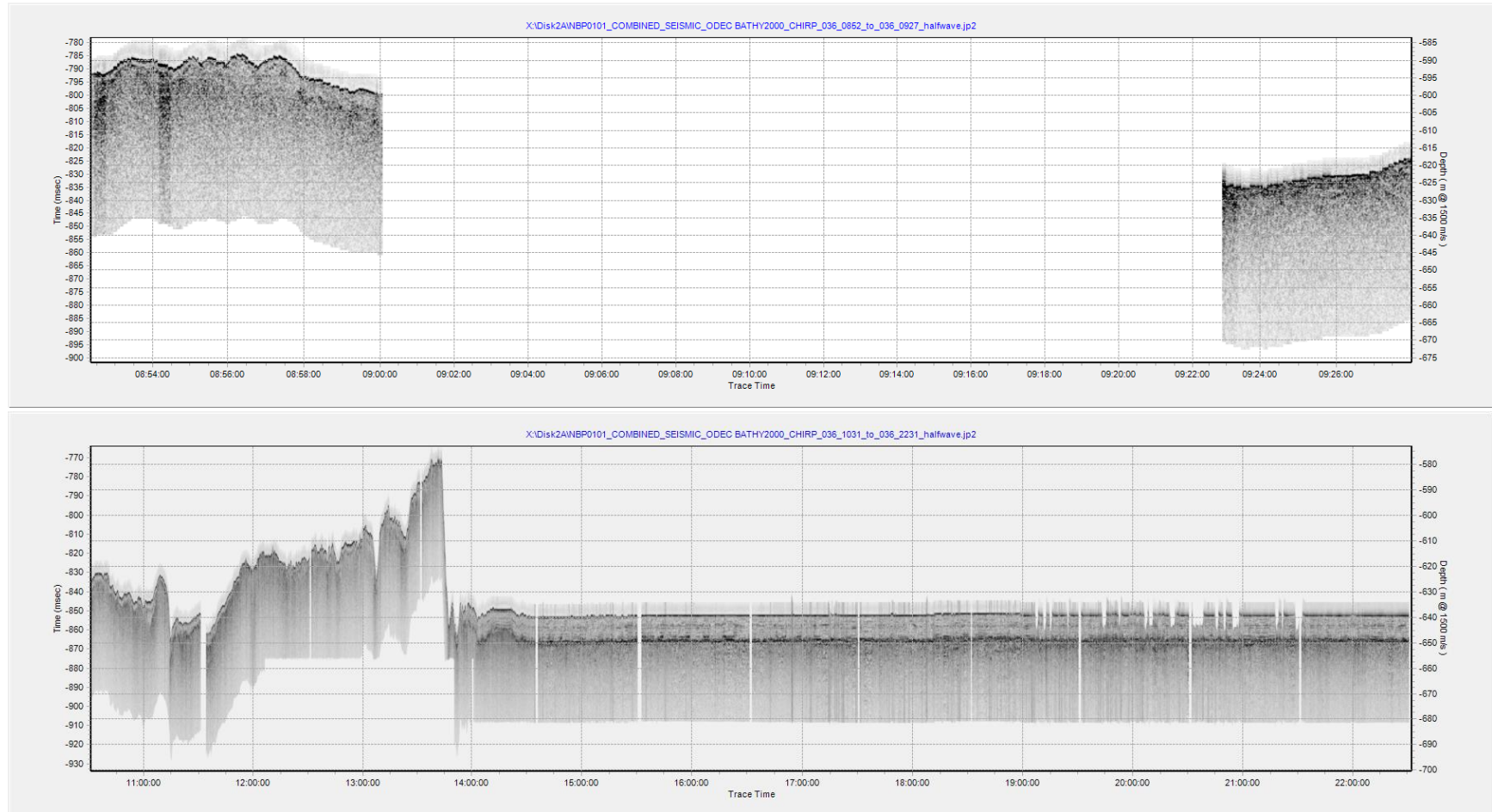


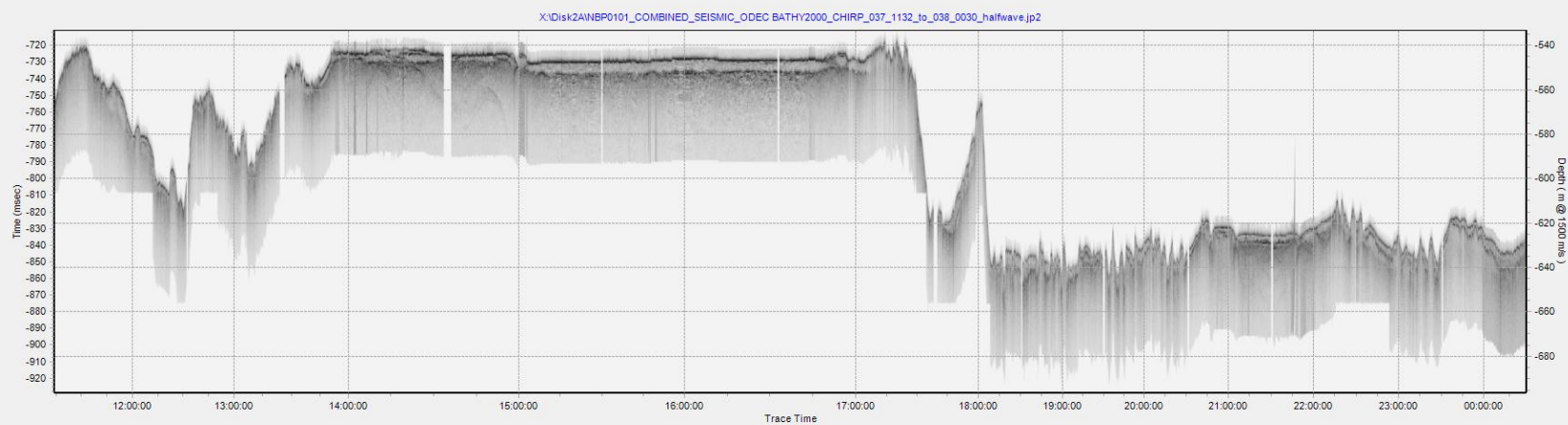
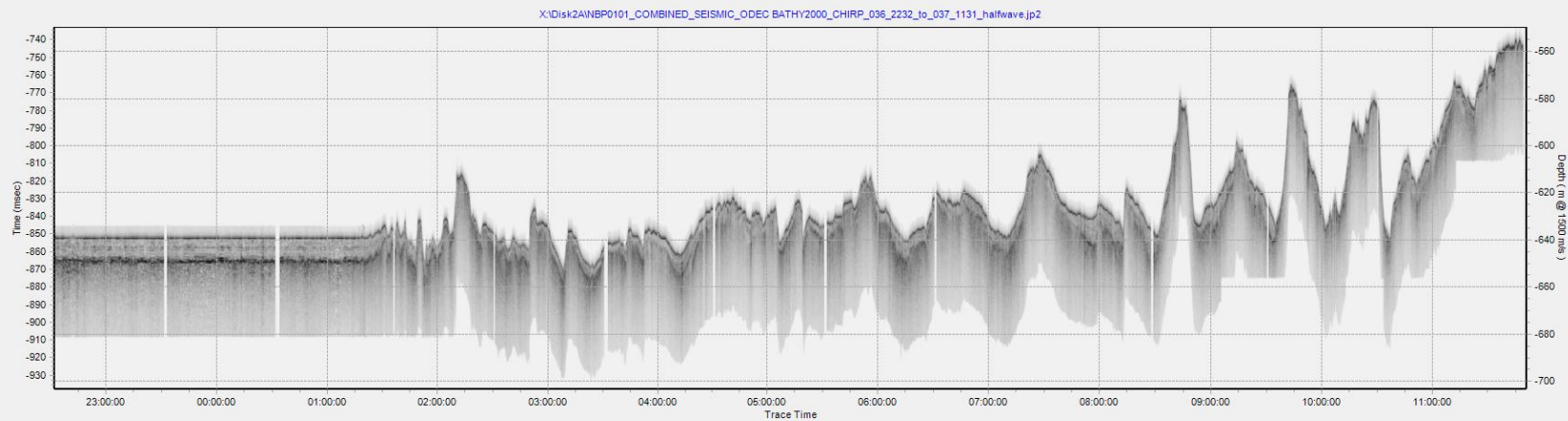


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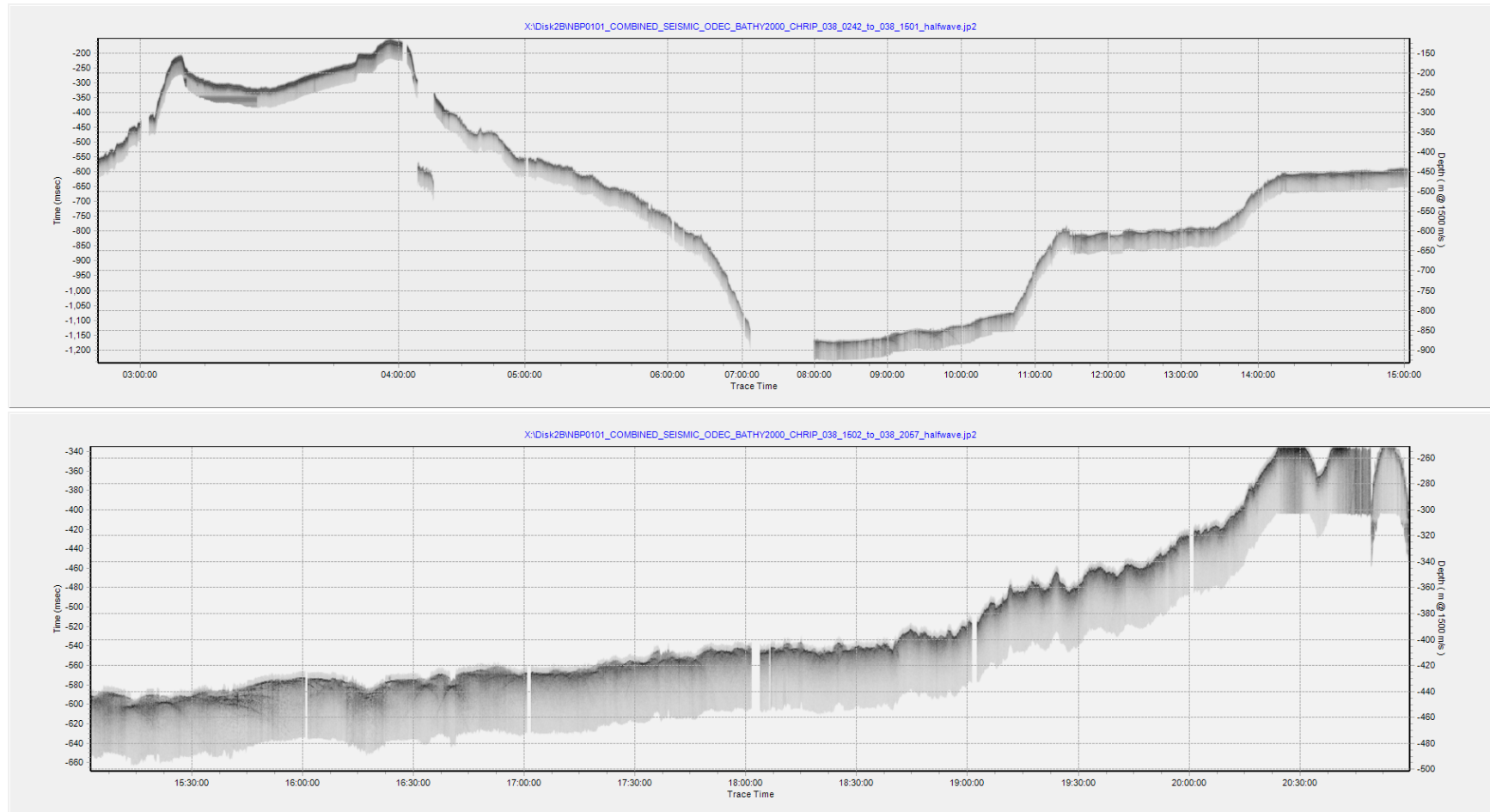


Disk2A (No Navigation in .DAT files)

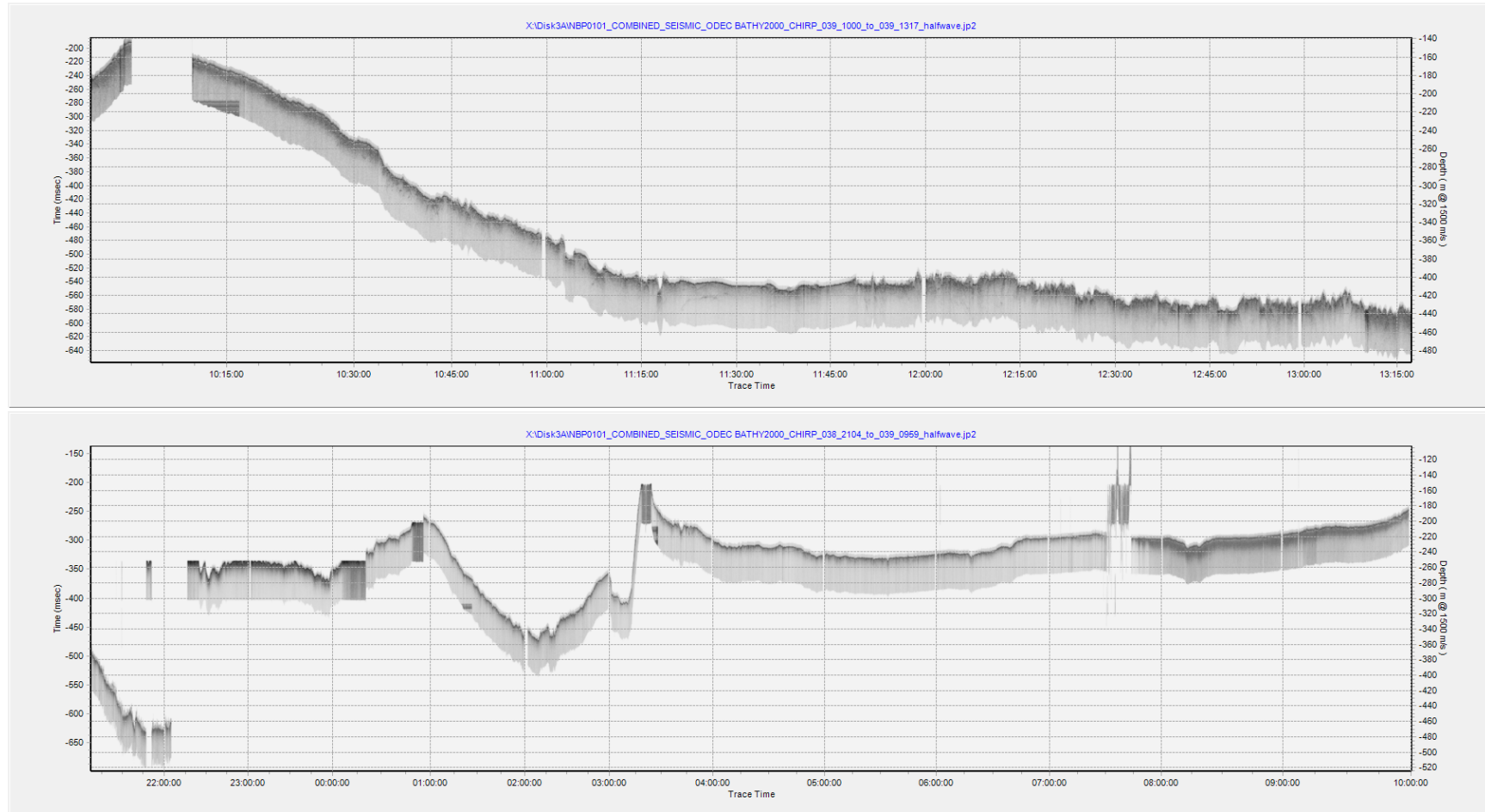




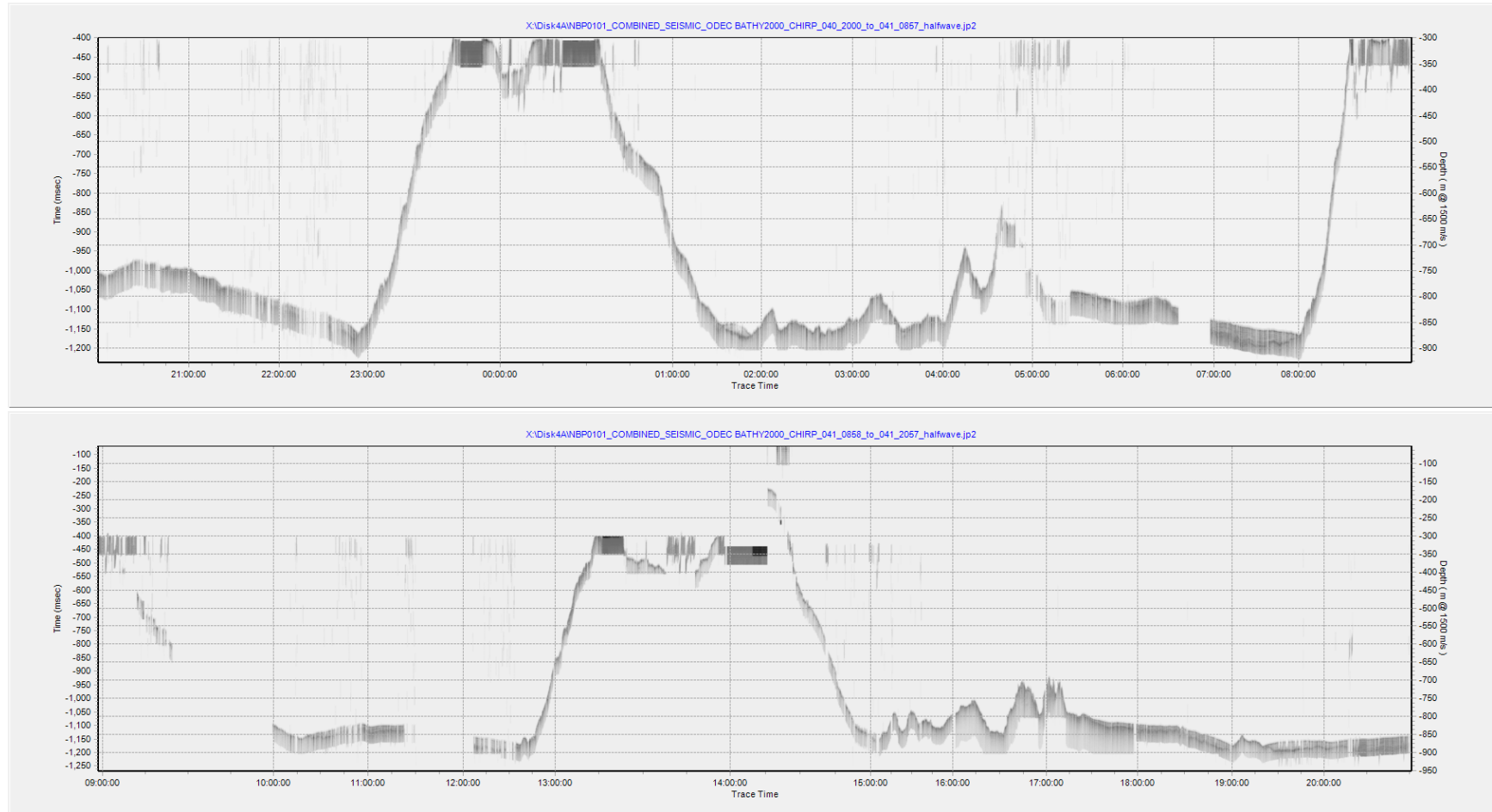
Disk2B (No Navigation in .DAT files)



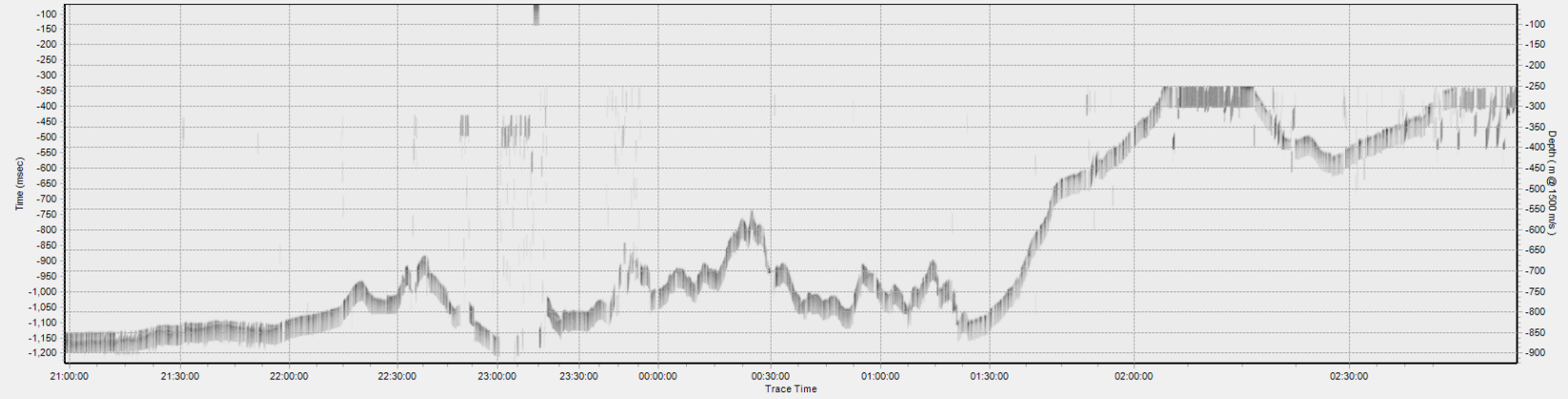
Disk3A (No Navigation in .DAT files)



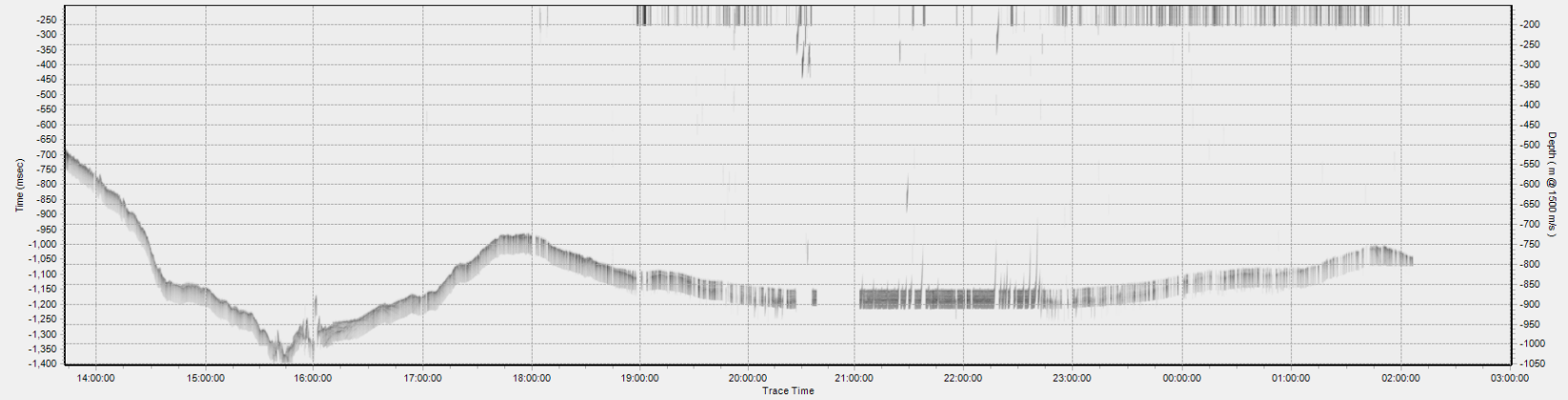
Disk4A (No Navigation in .DAT files)



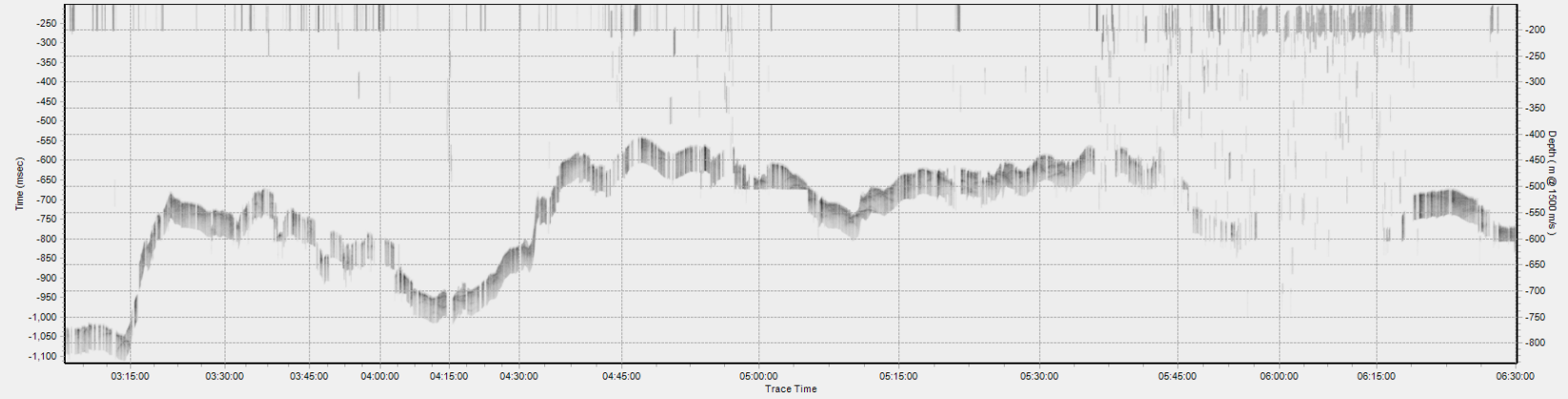
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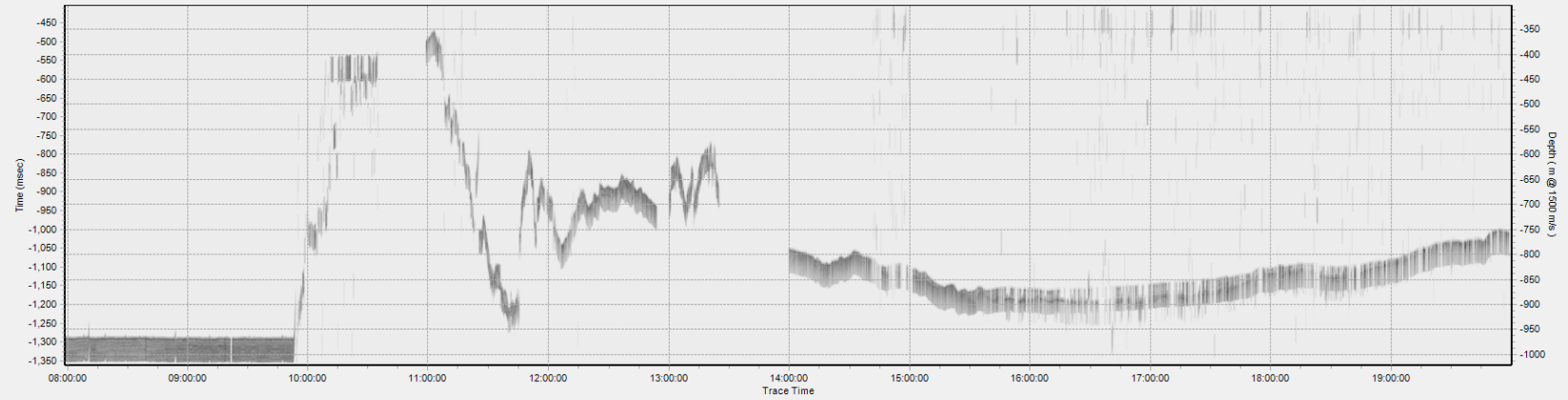
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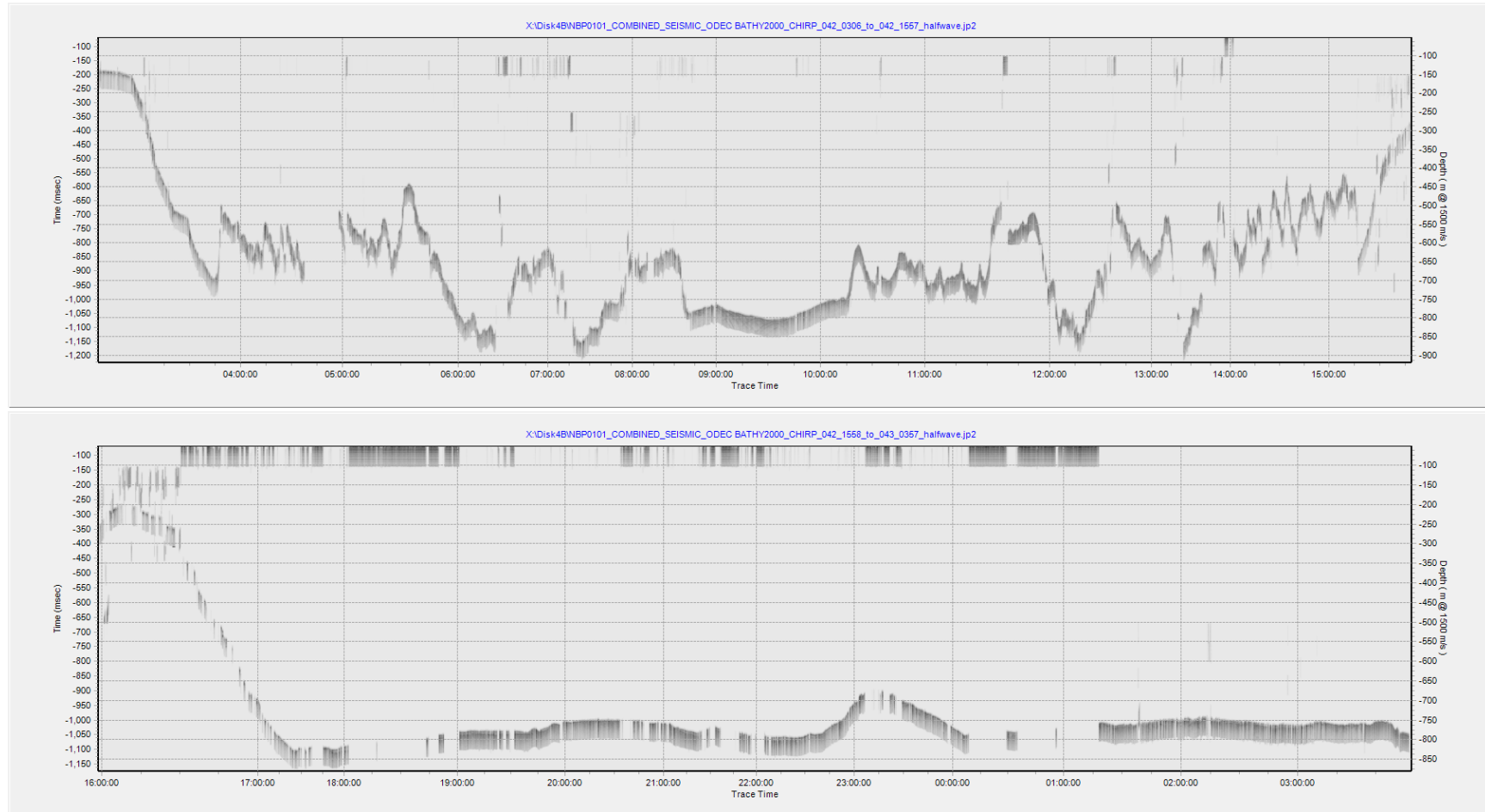
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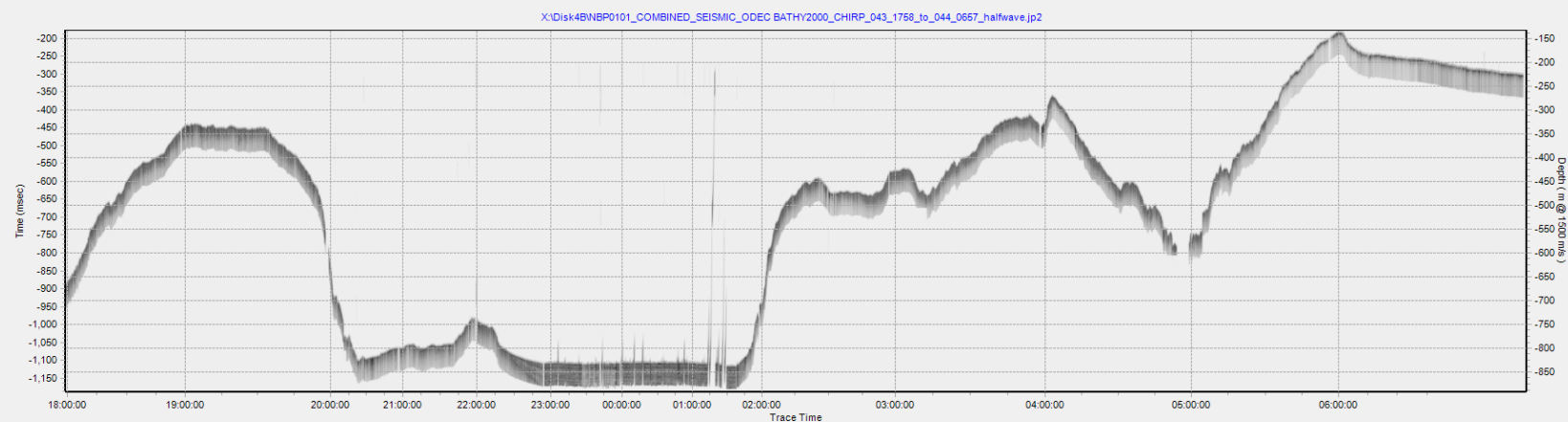
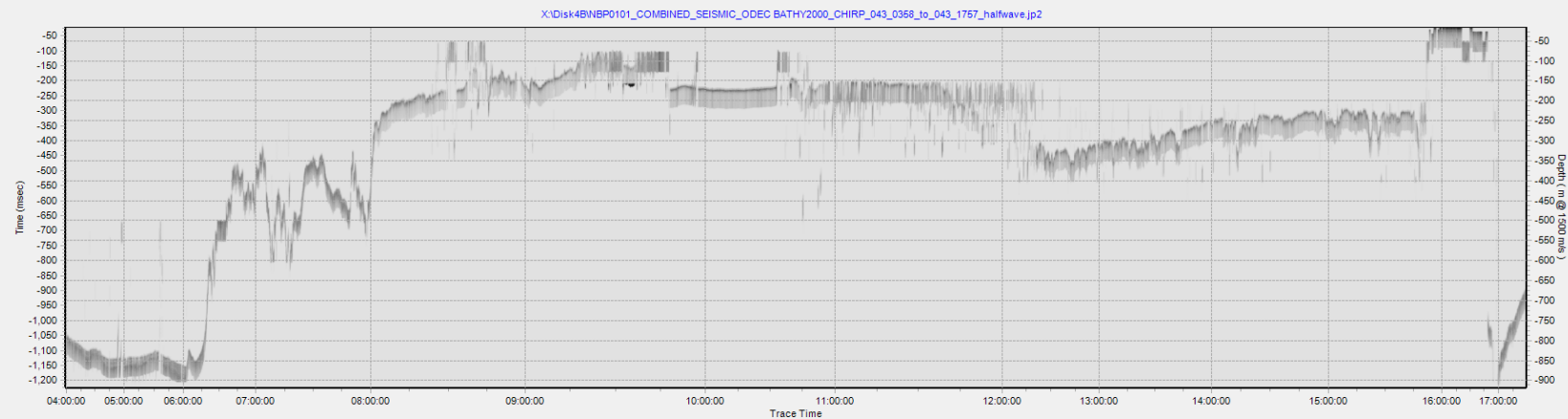


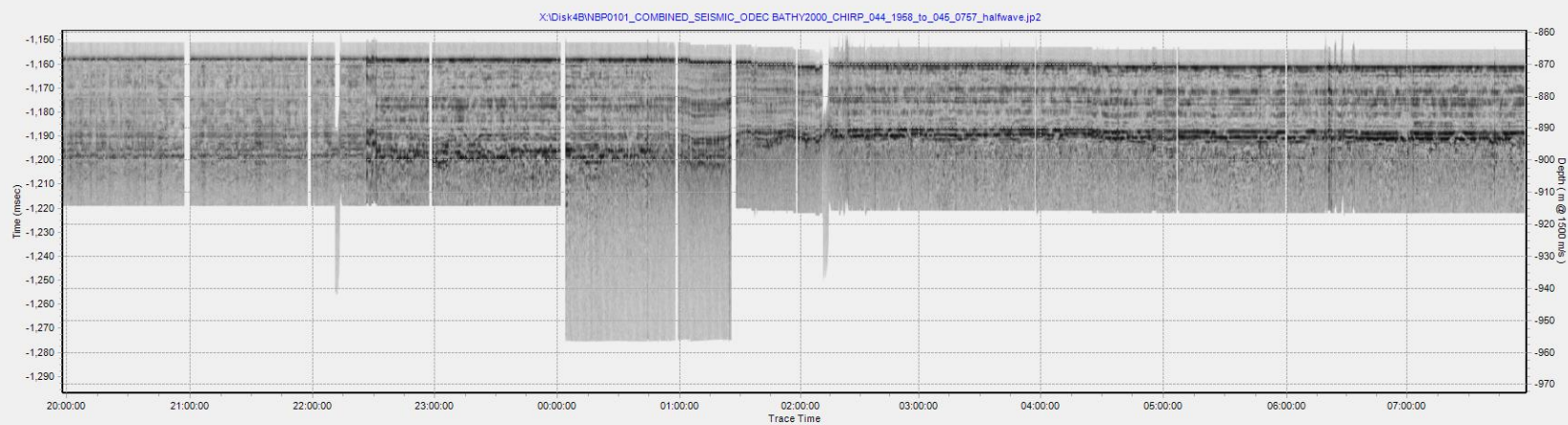
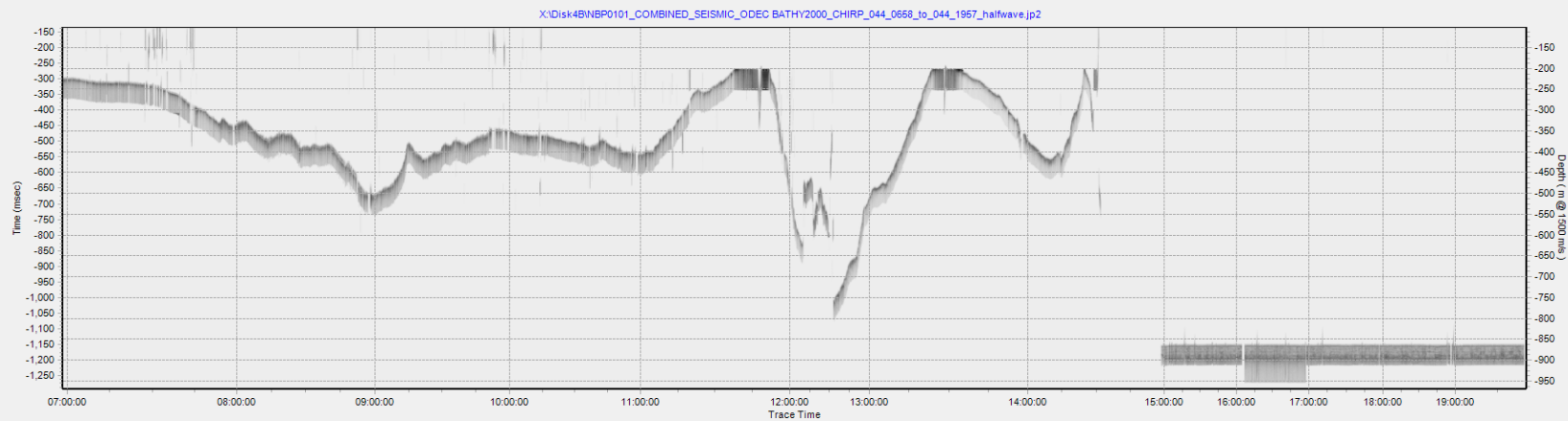
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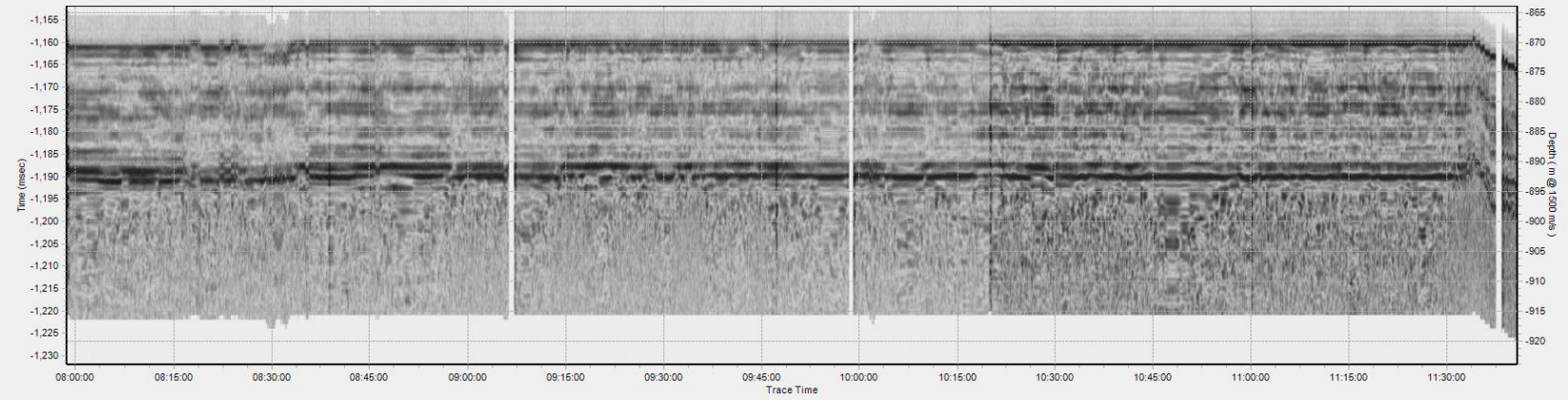
Disk4B (No Navigation in .DAT files)



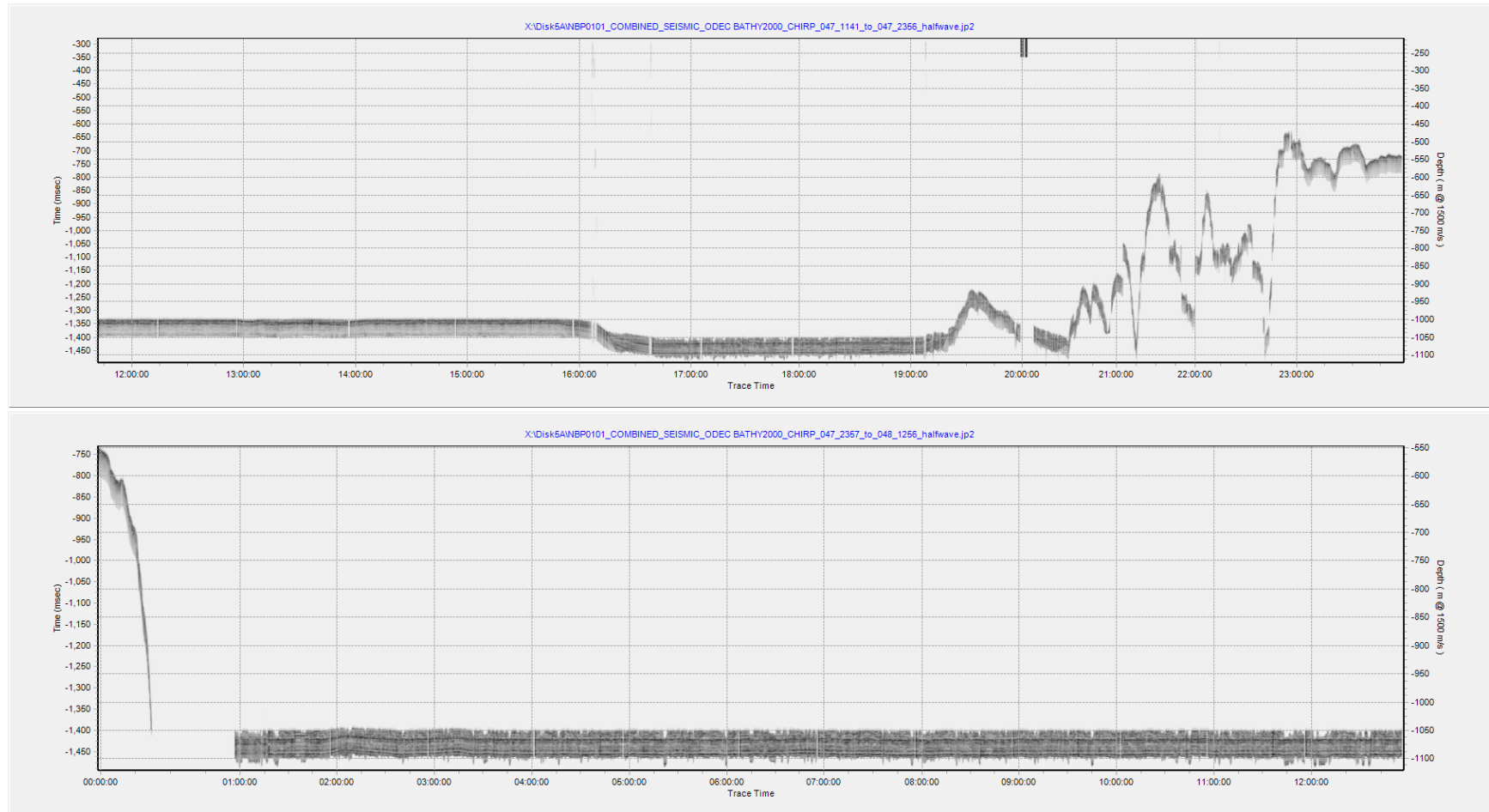


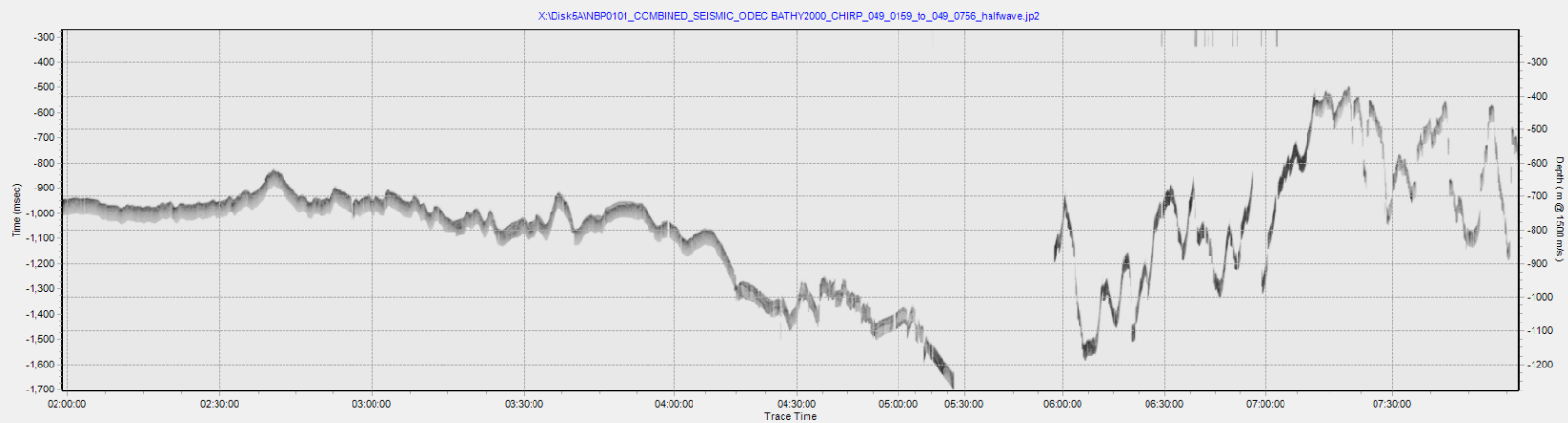
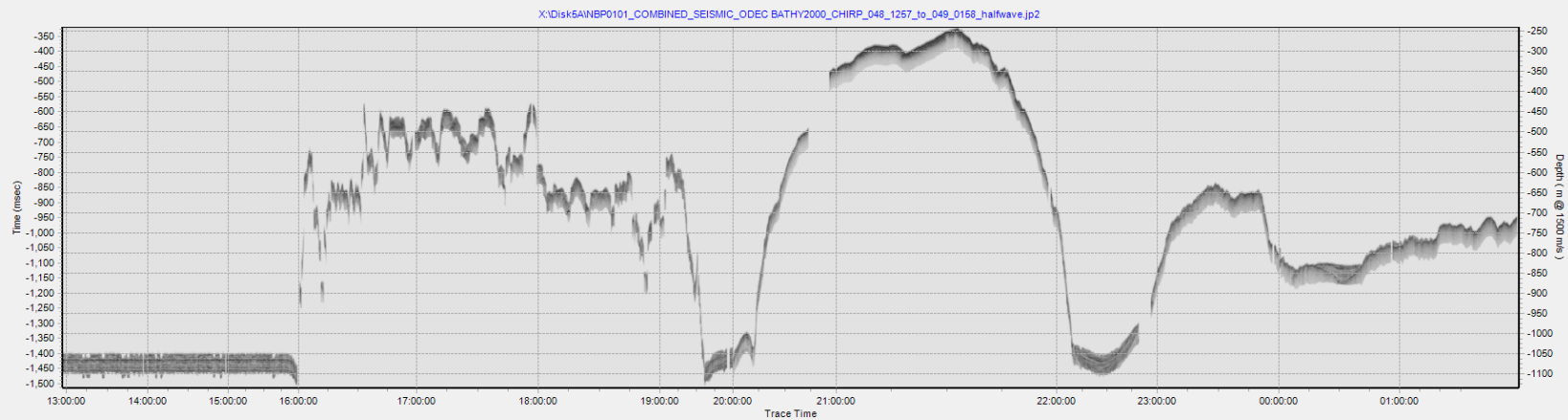


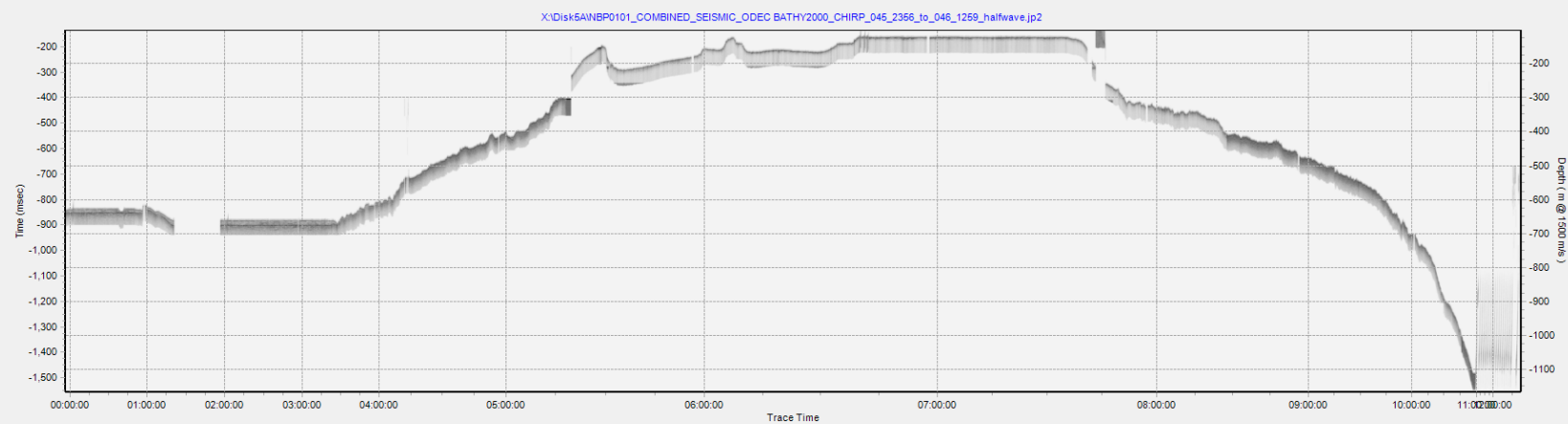
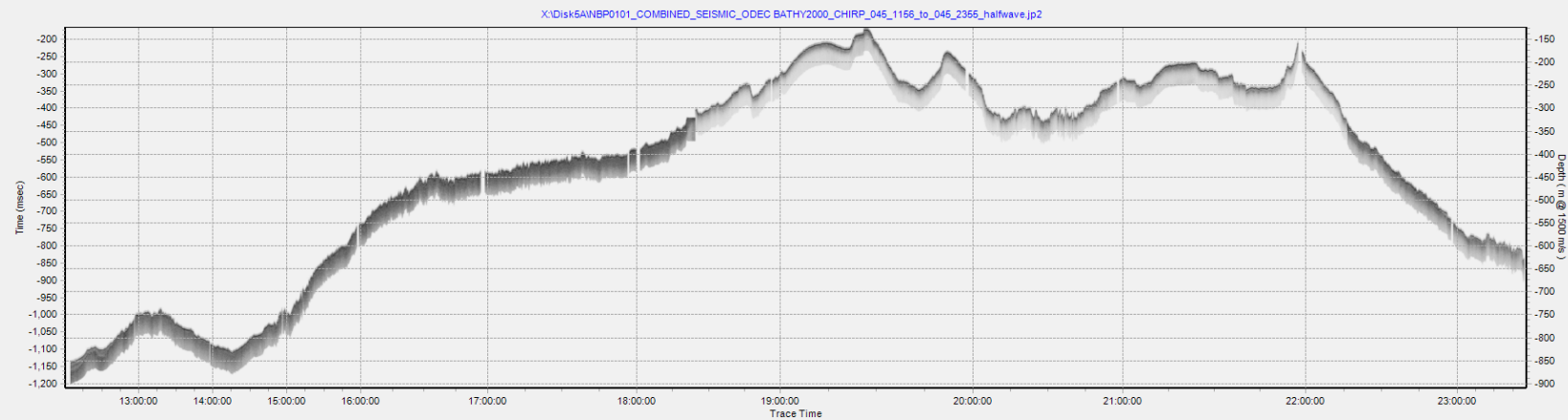
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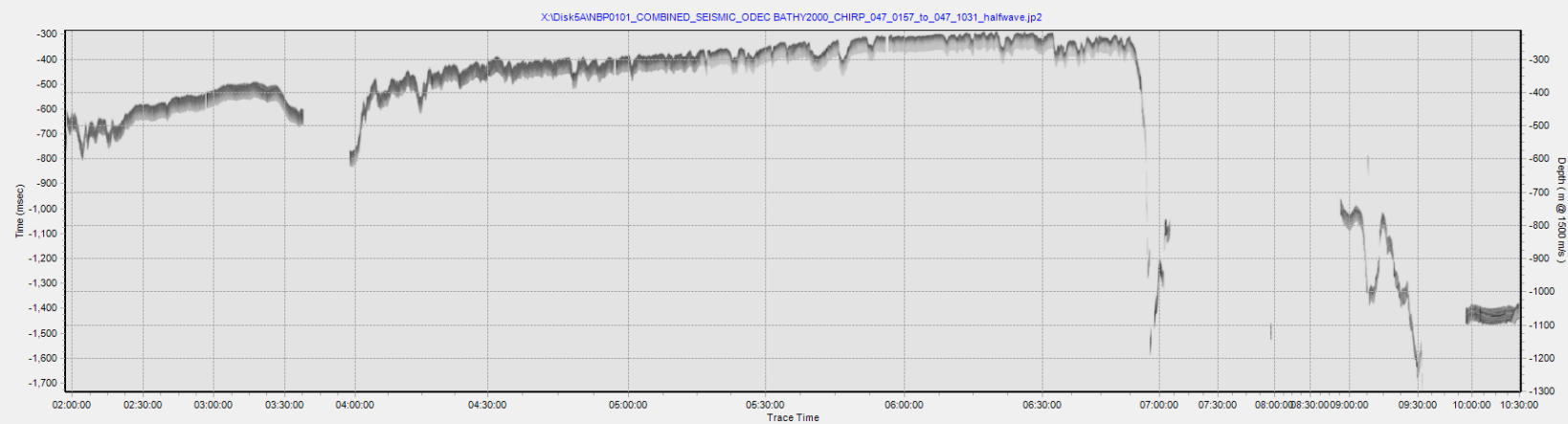
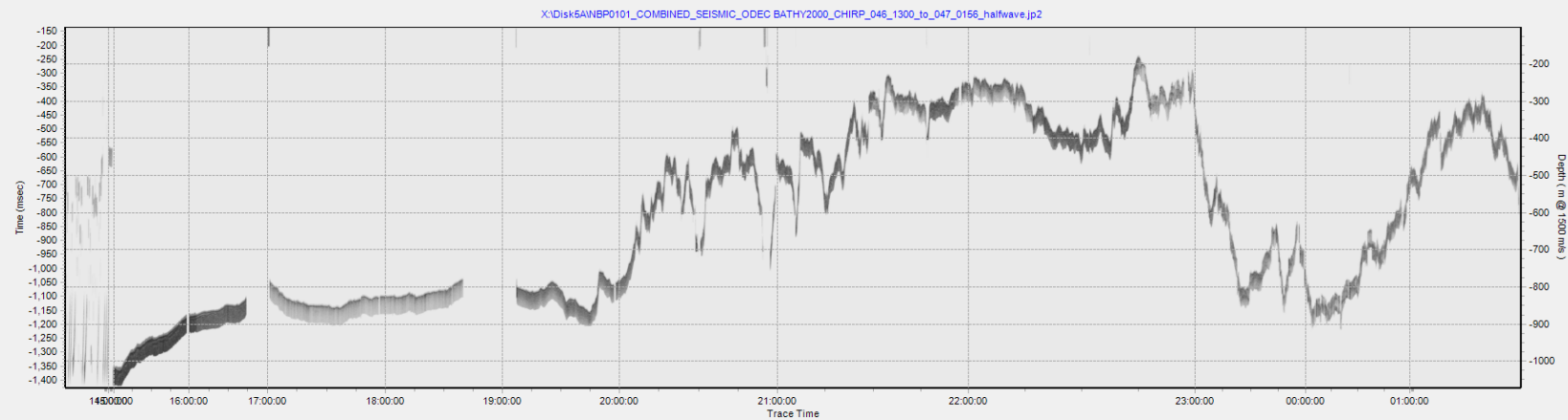


Disk5A (No Navigation in .DAT files)

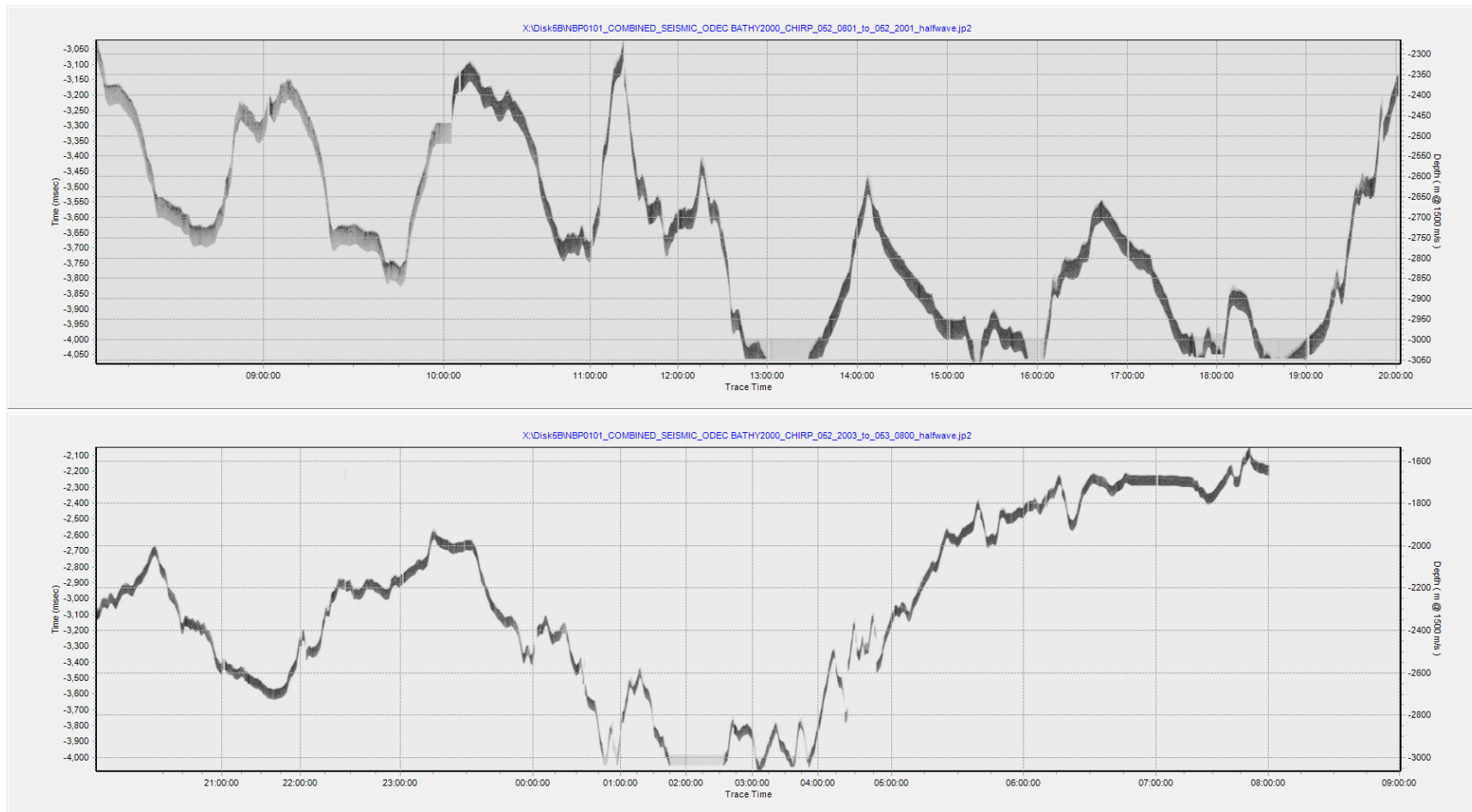


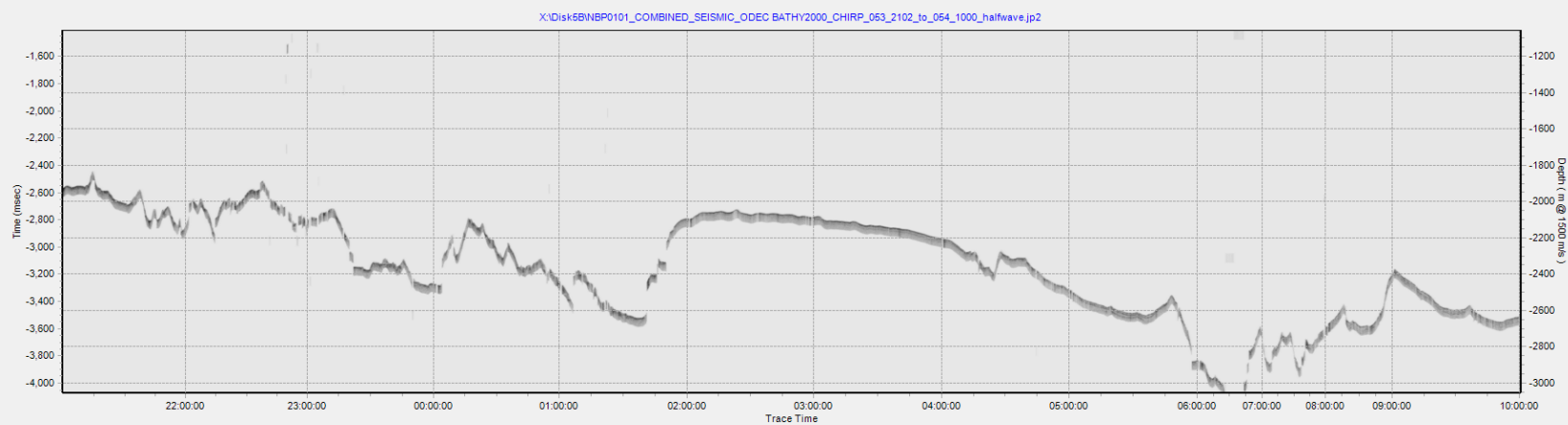
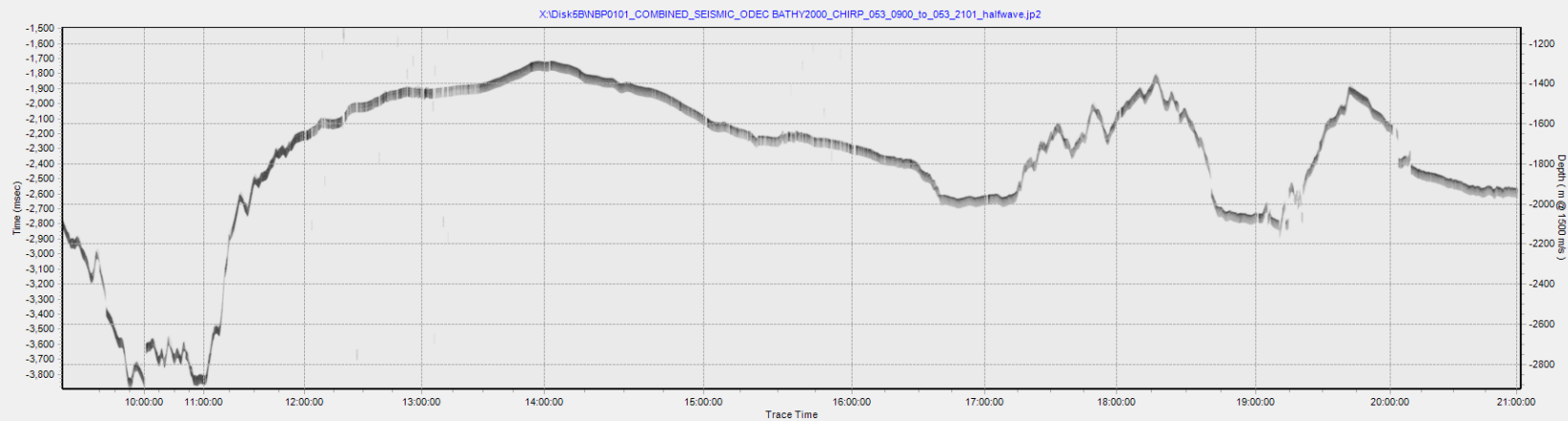


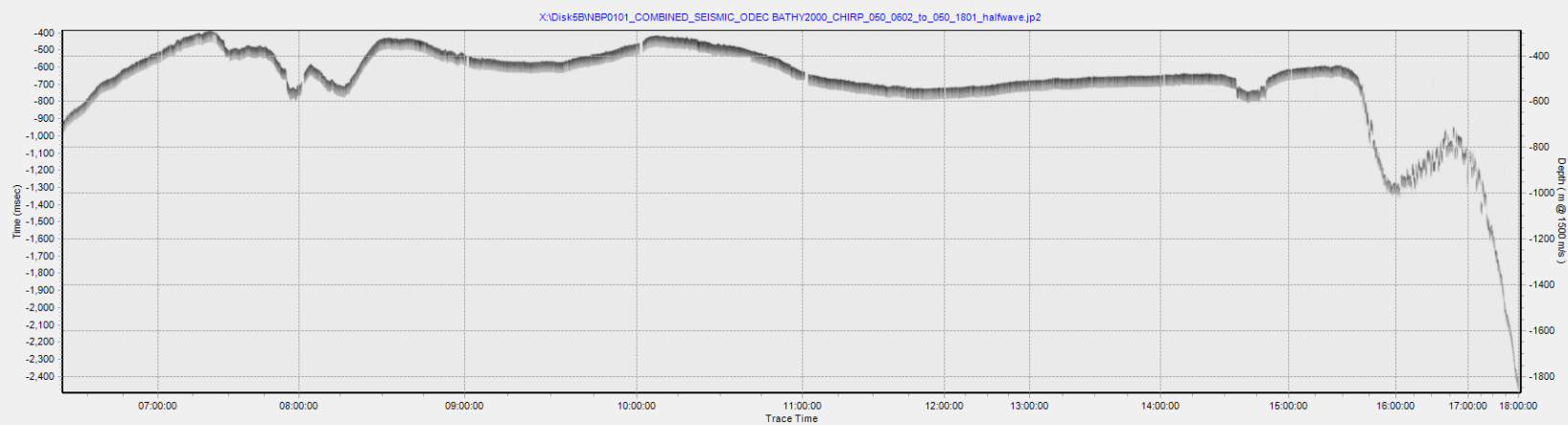
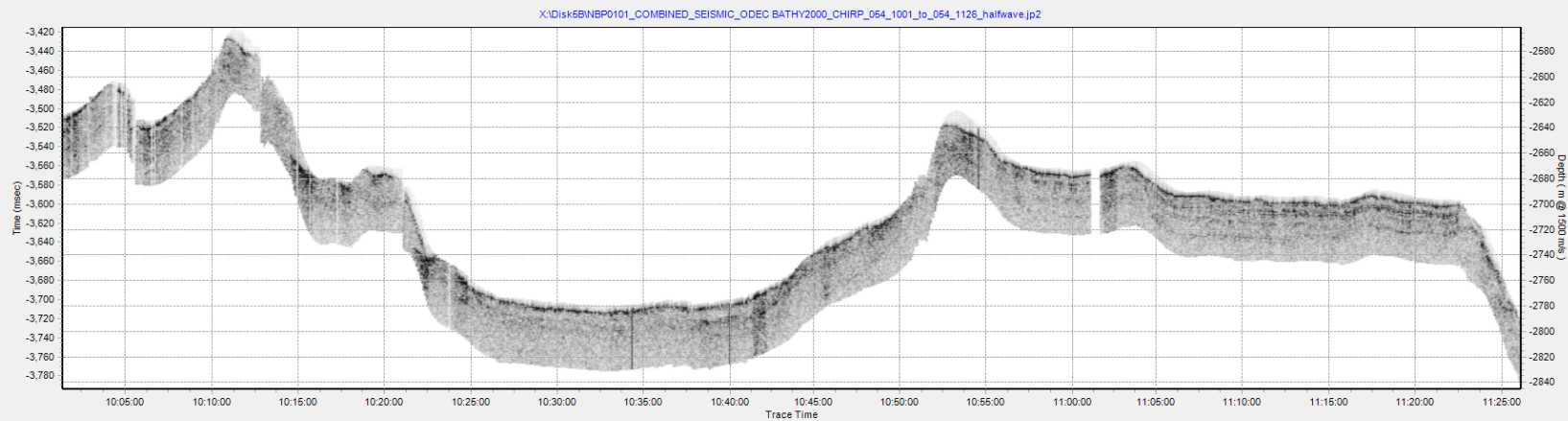


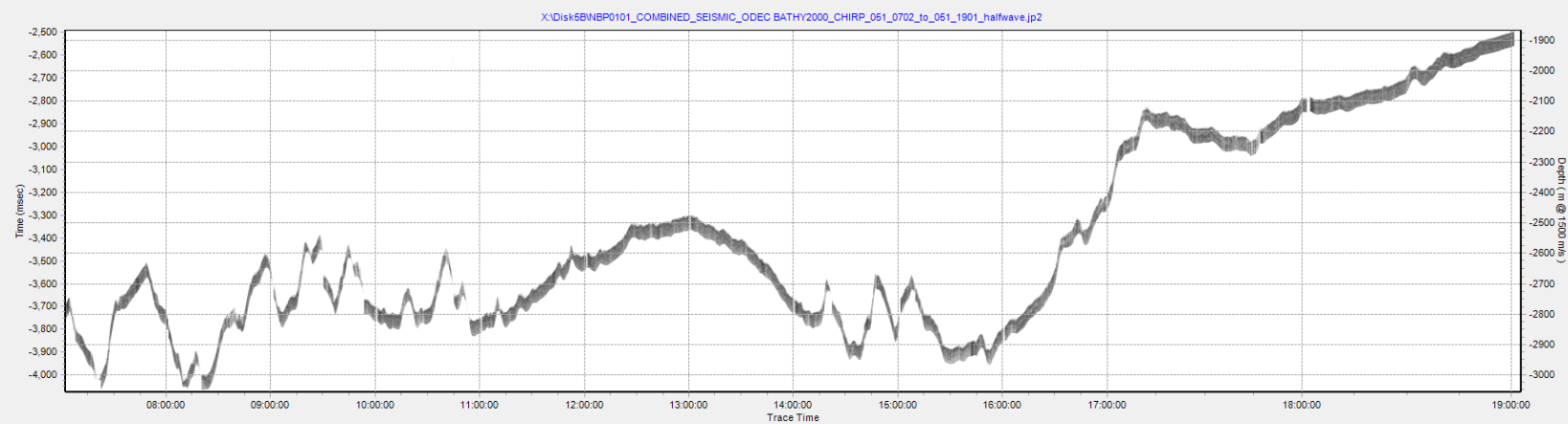
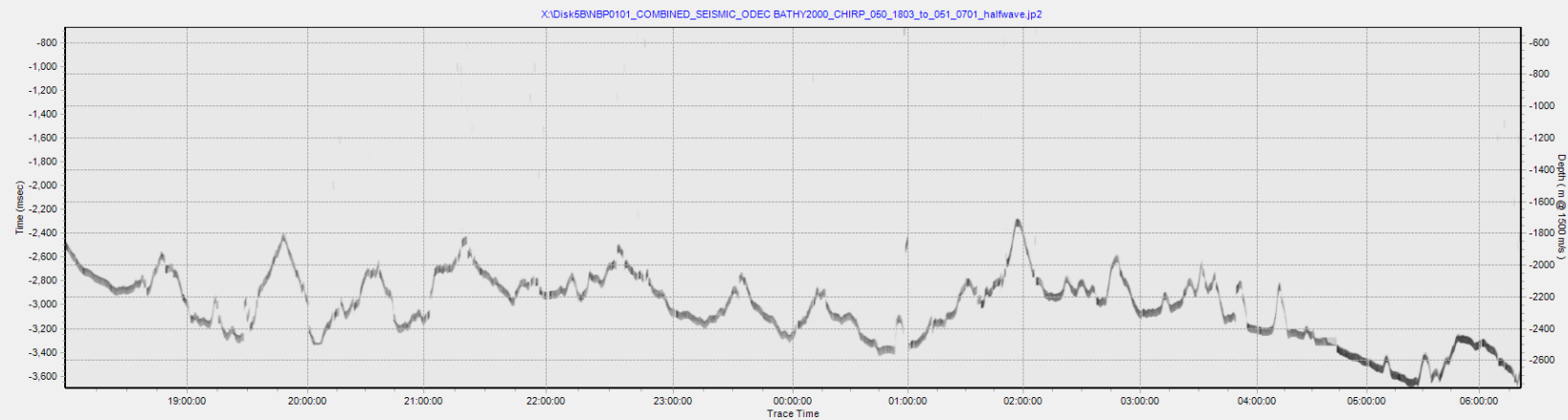


Disk5B

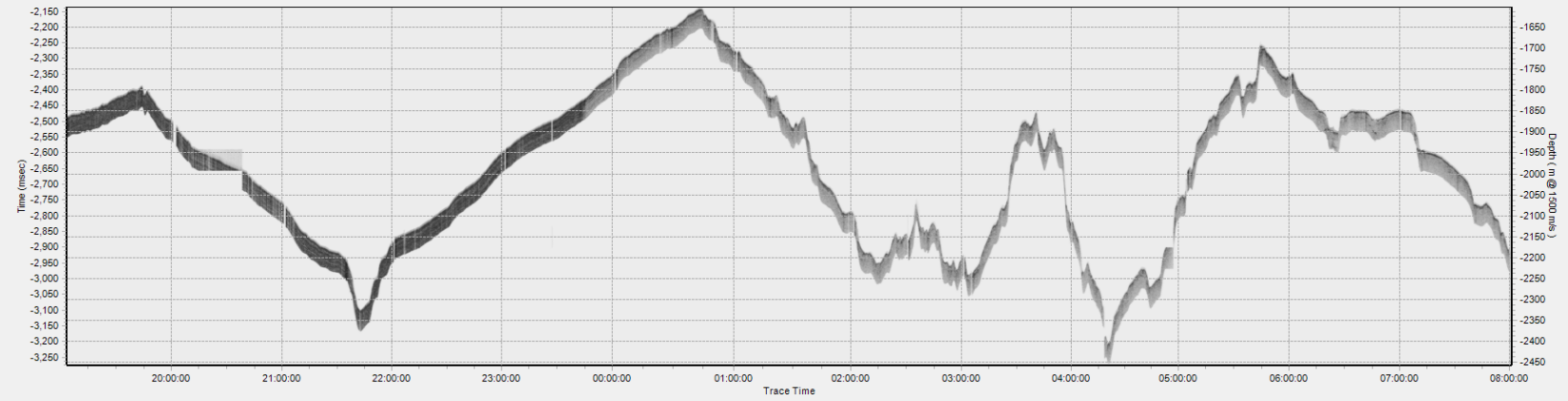




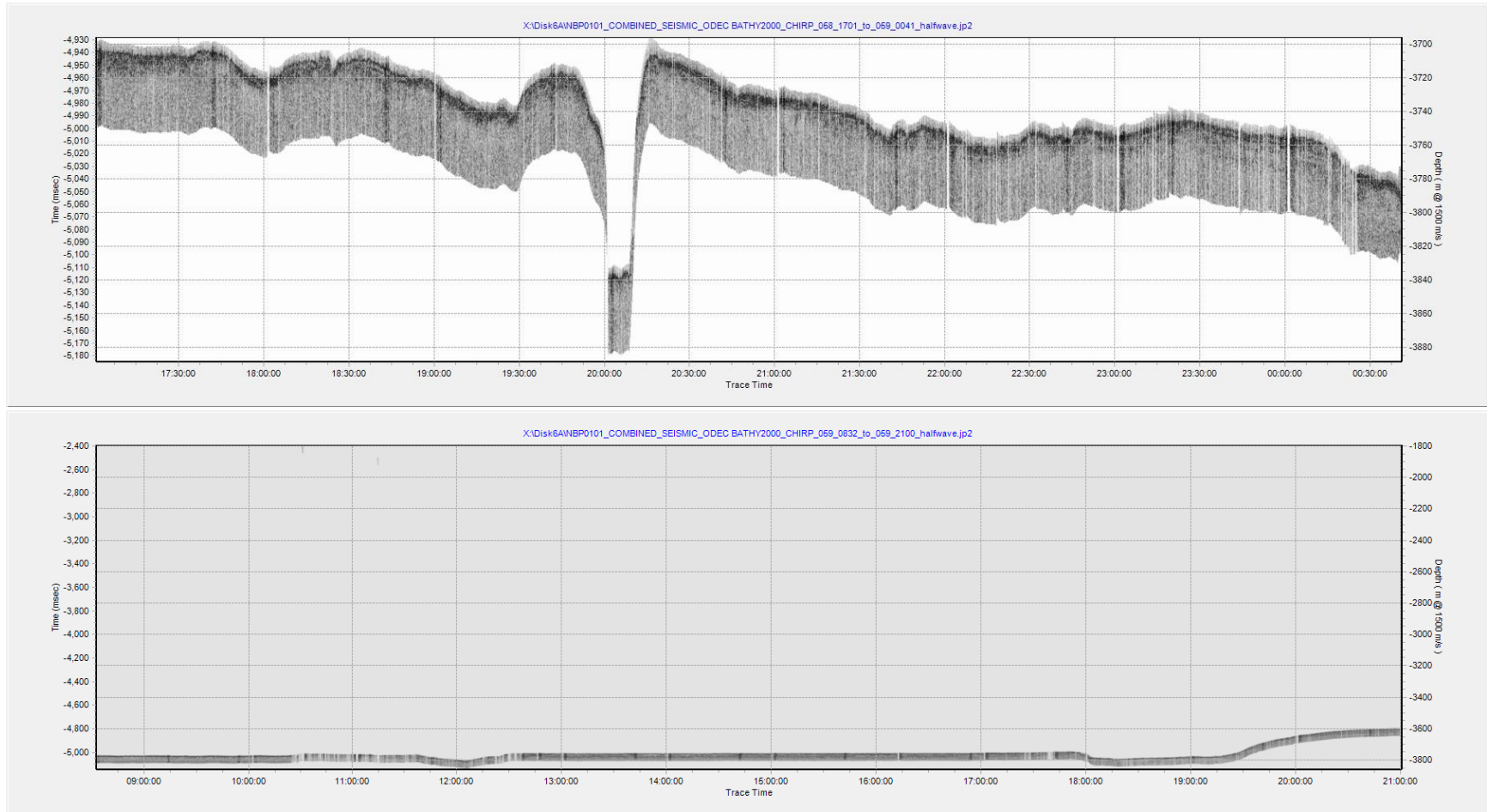


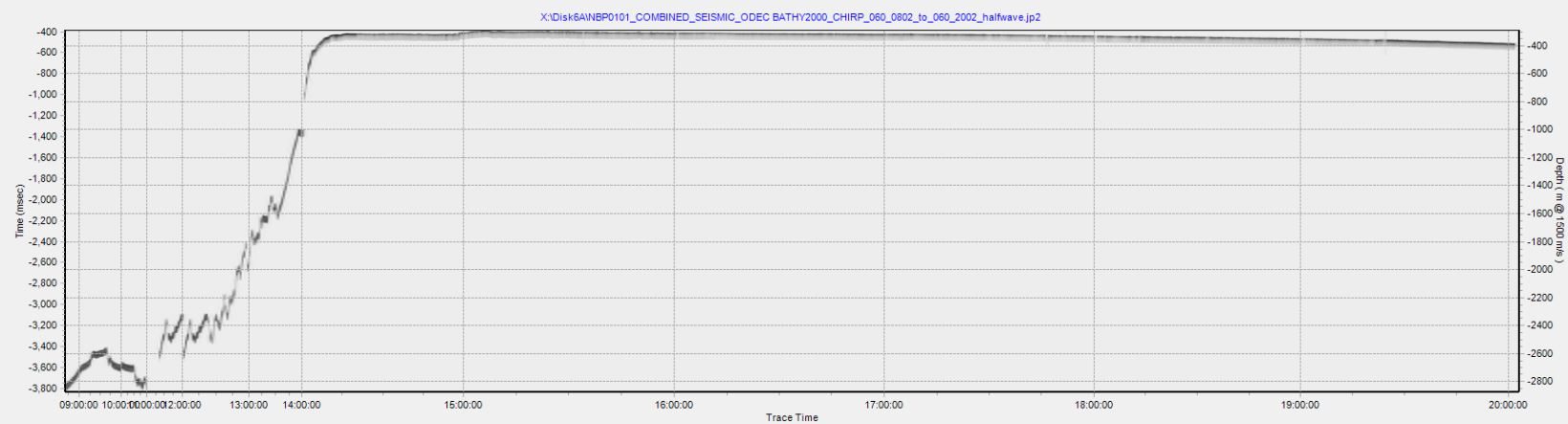
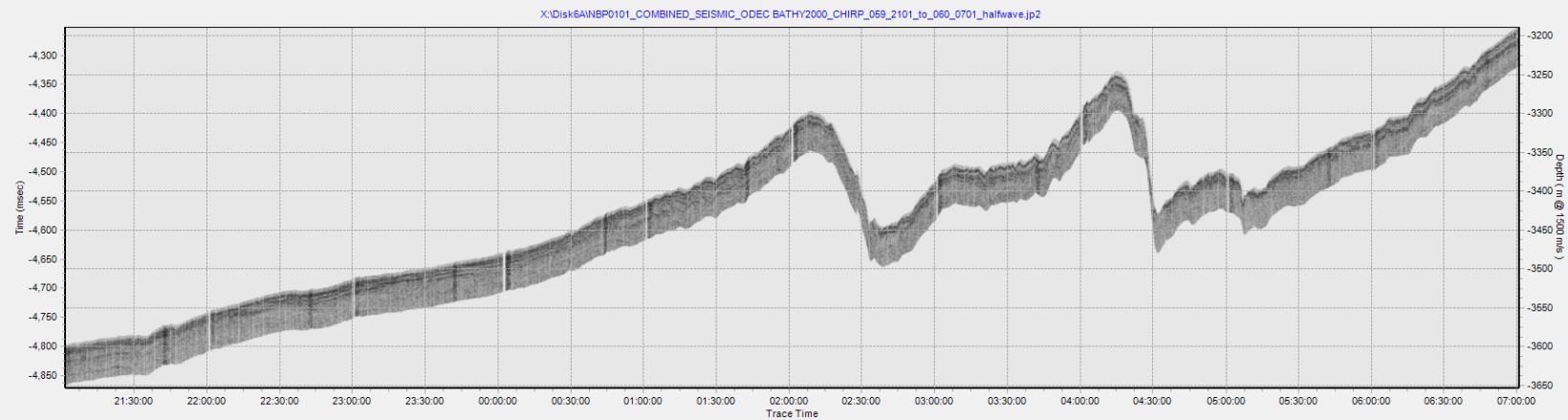


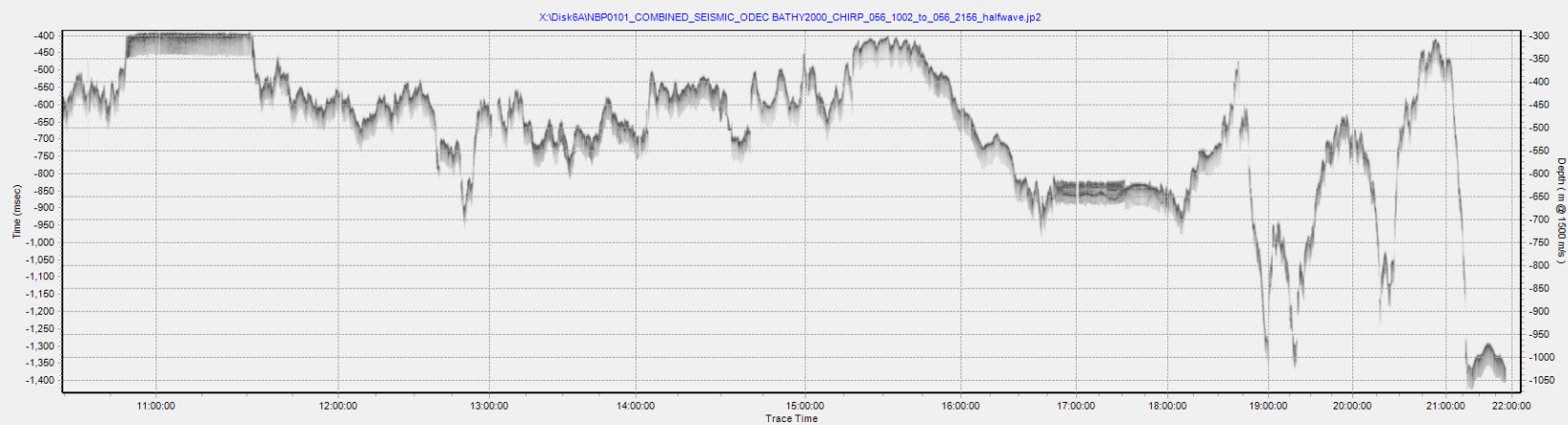
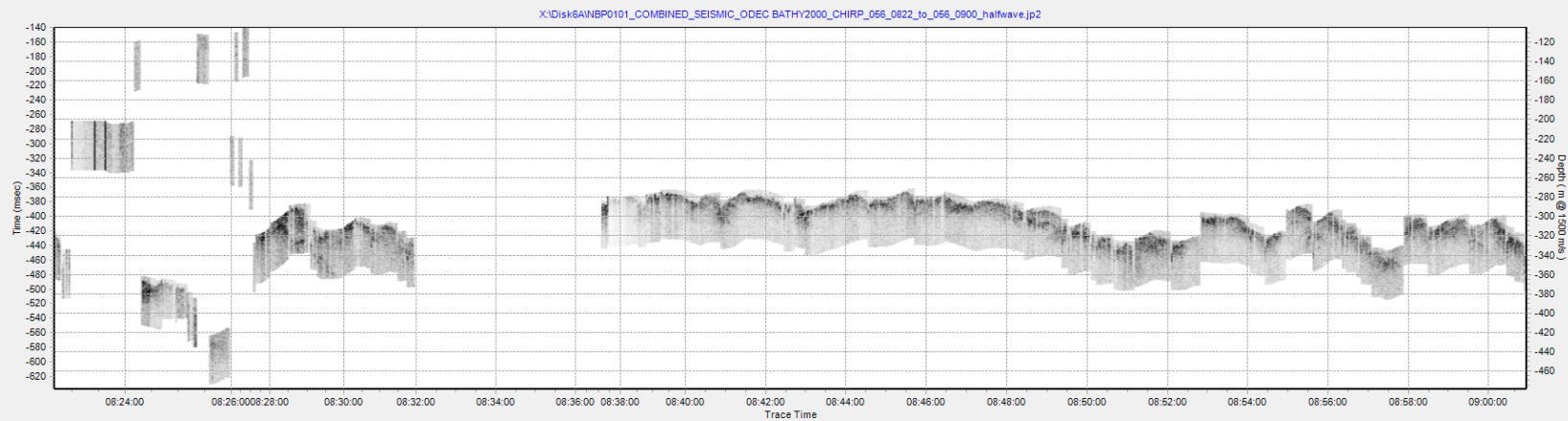
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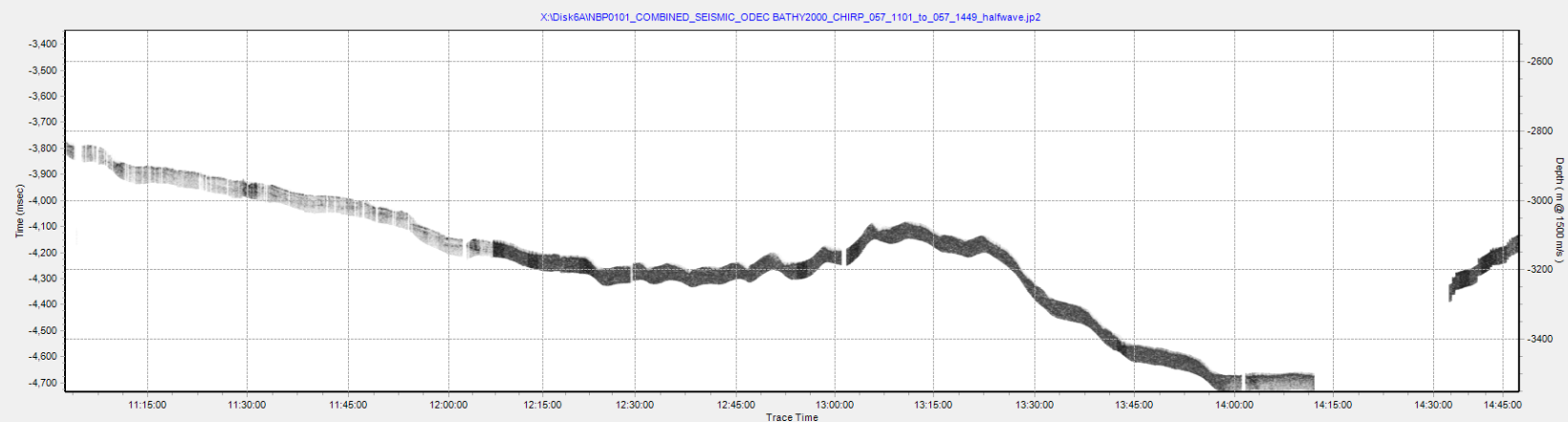
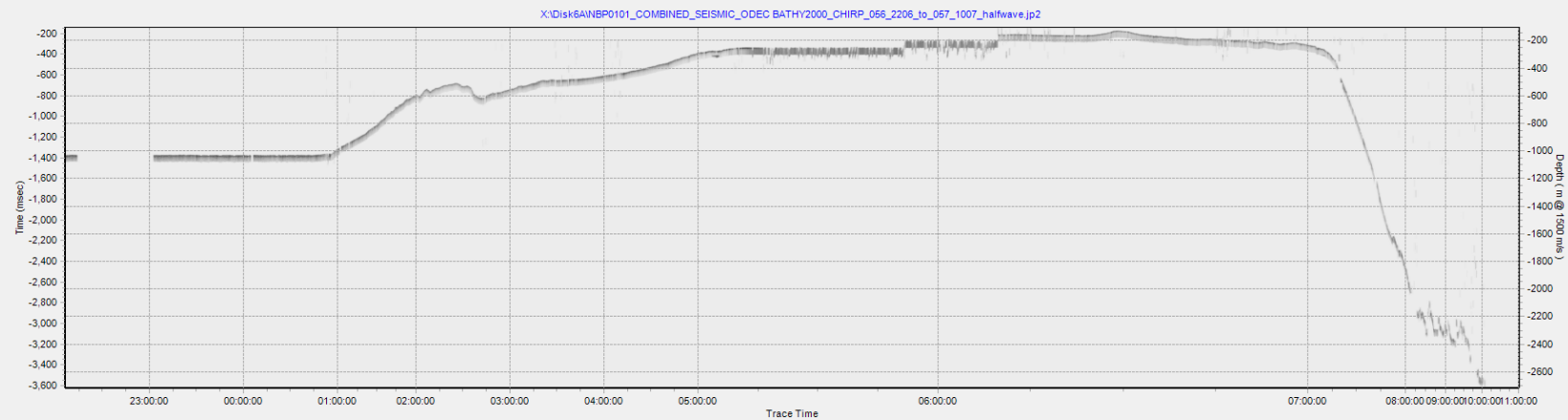


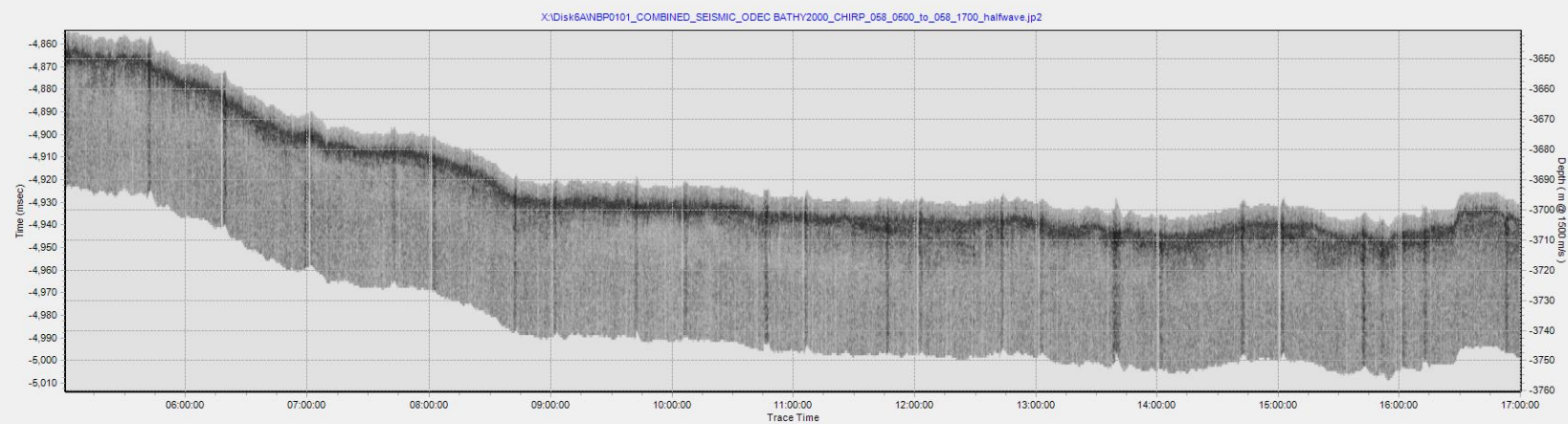
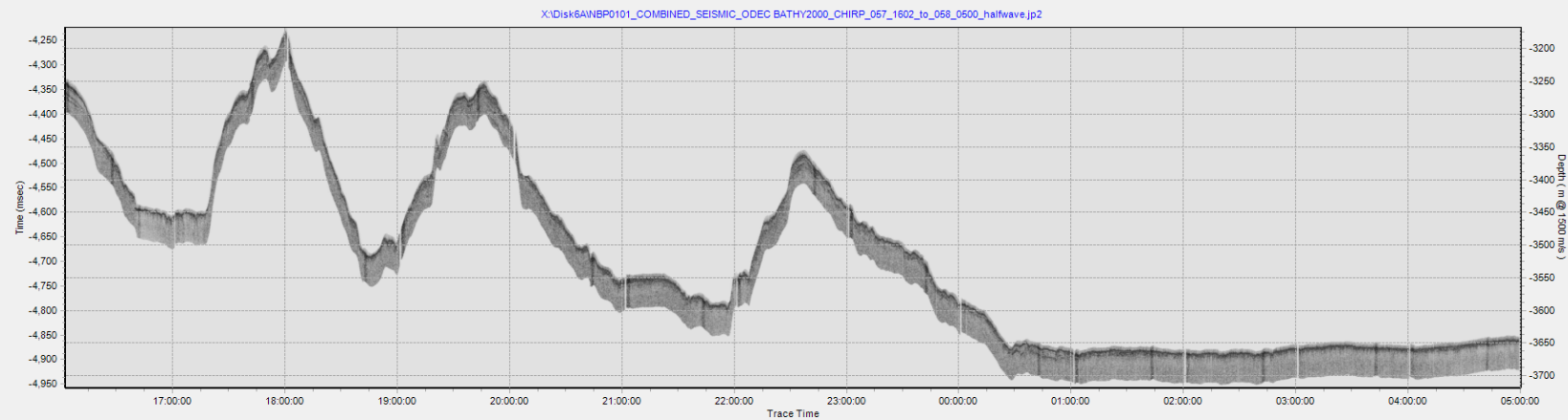
Disk6A



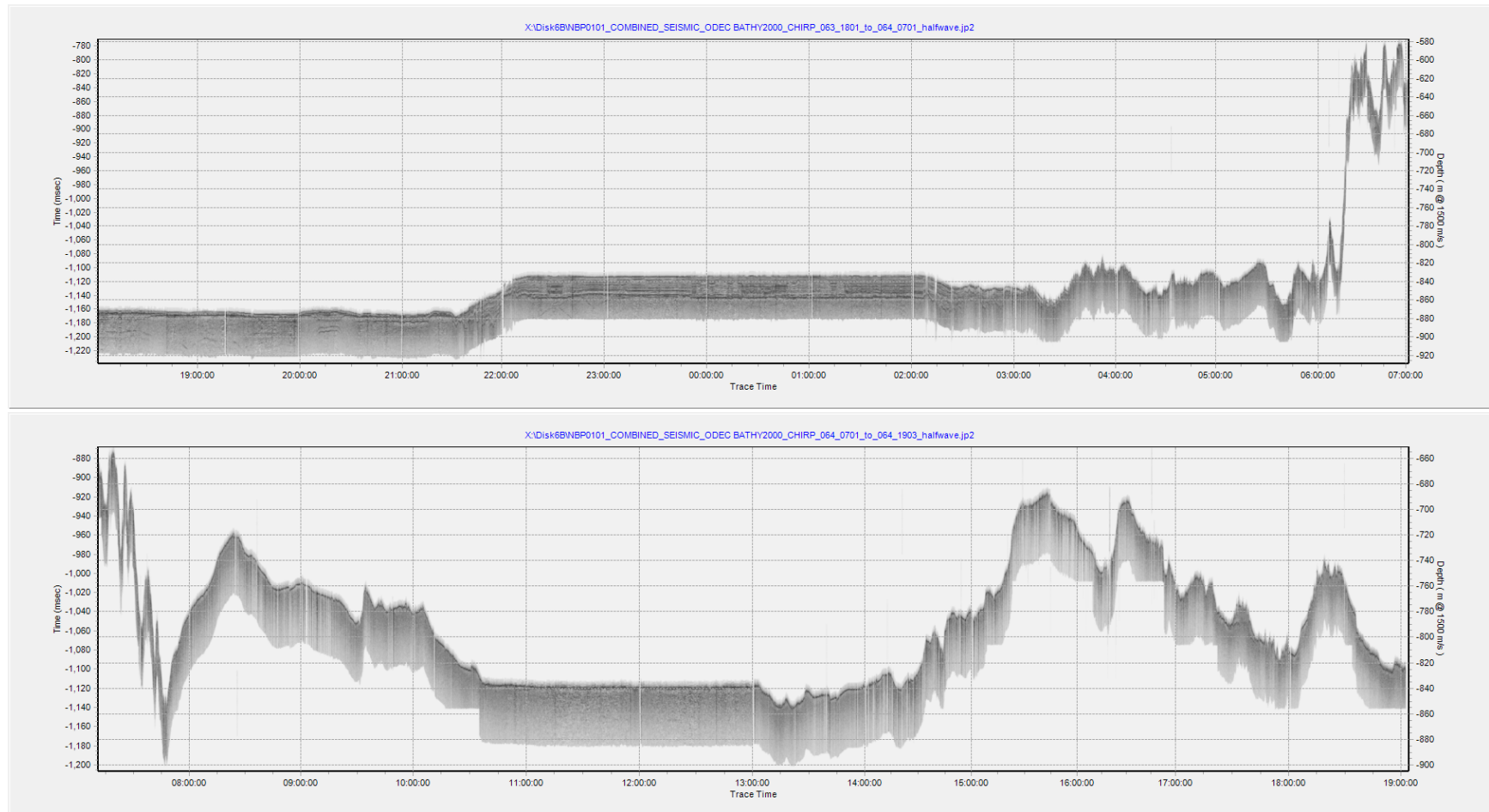


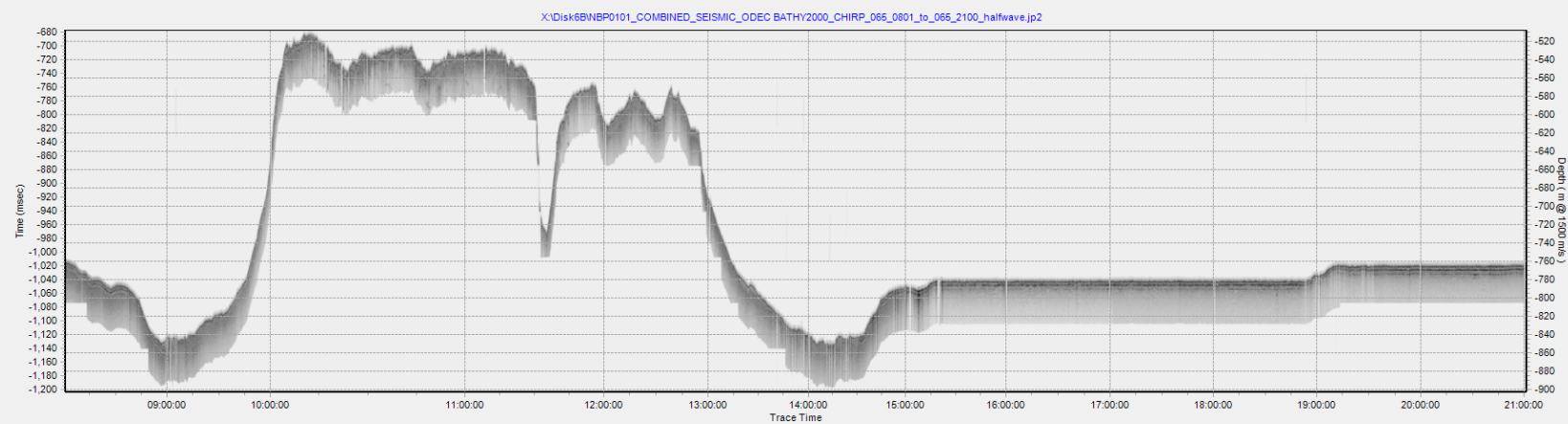
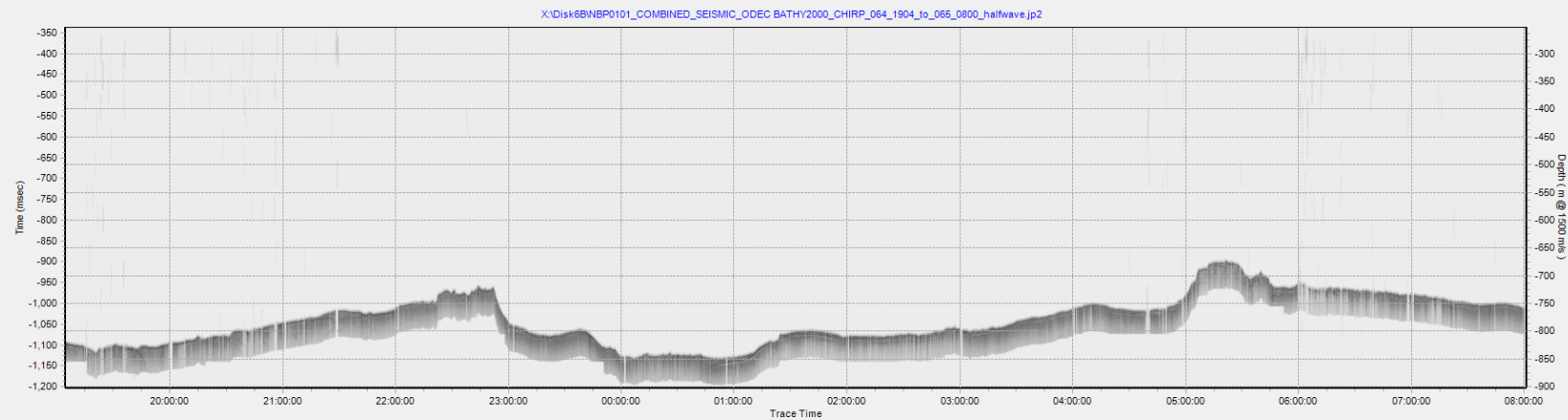


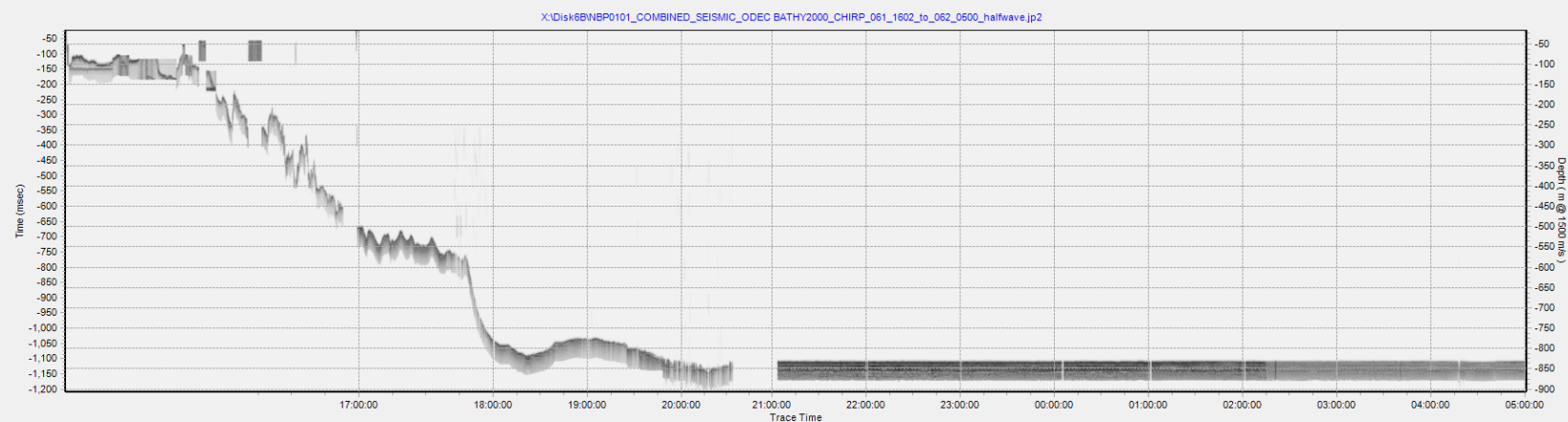
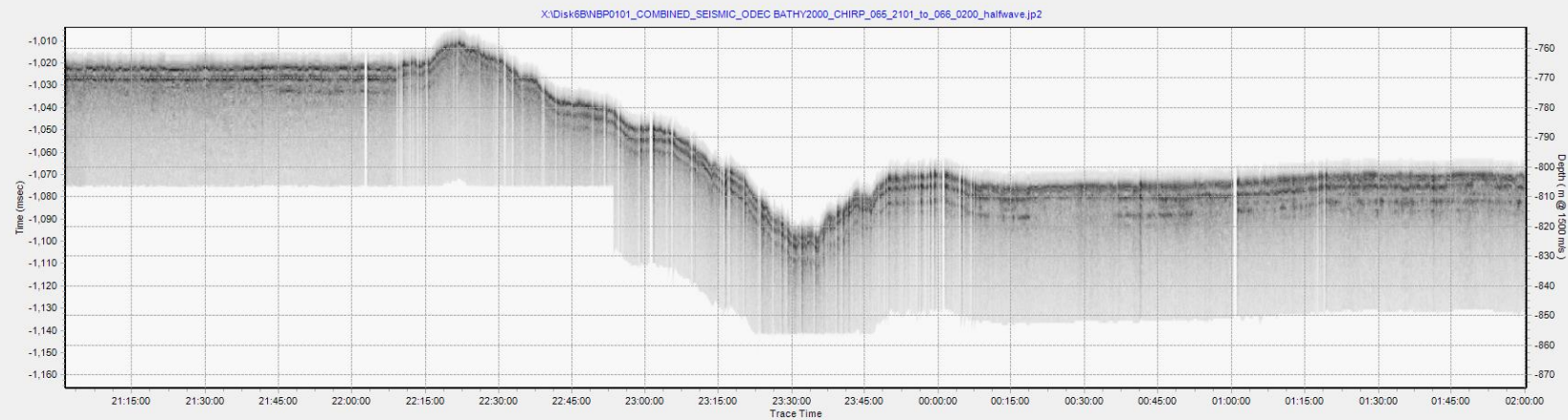




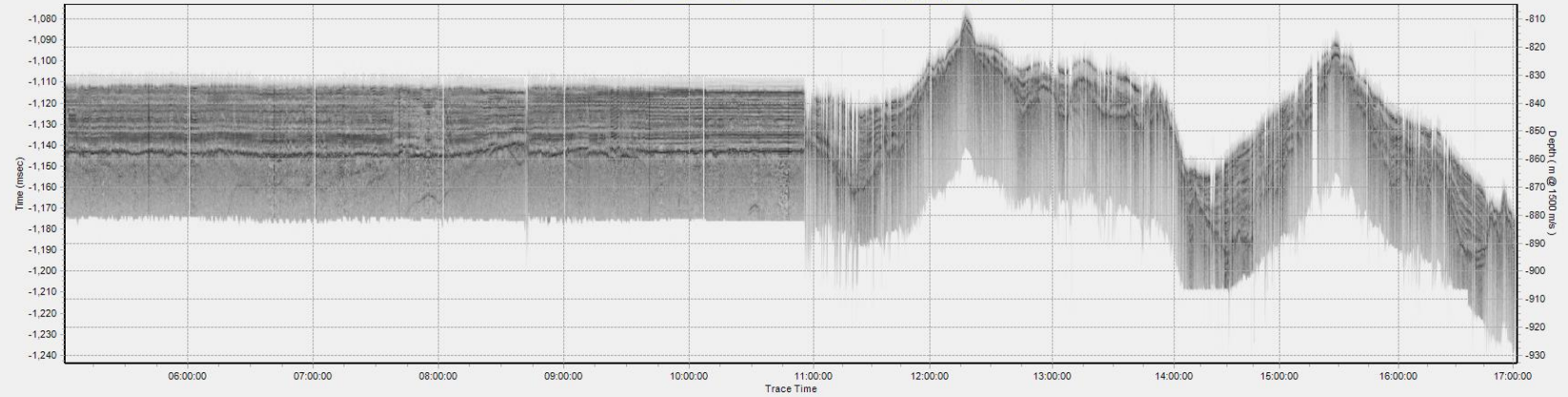
Disk6B



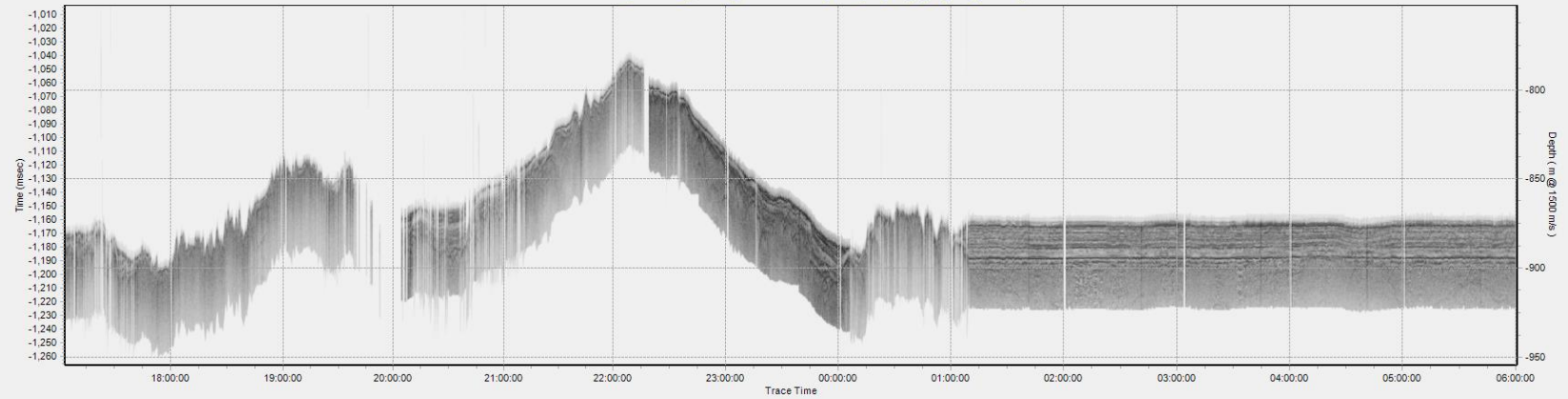




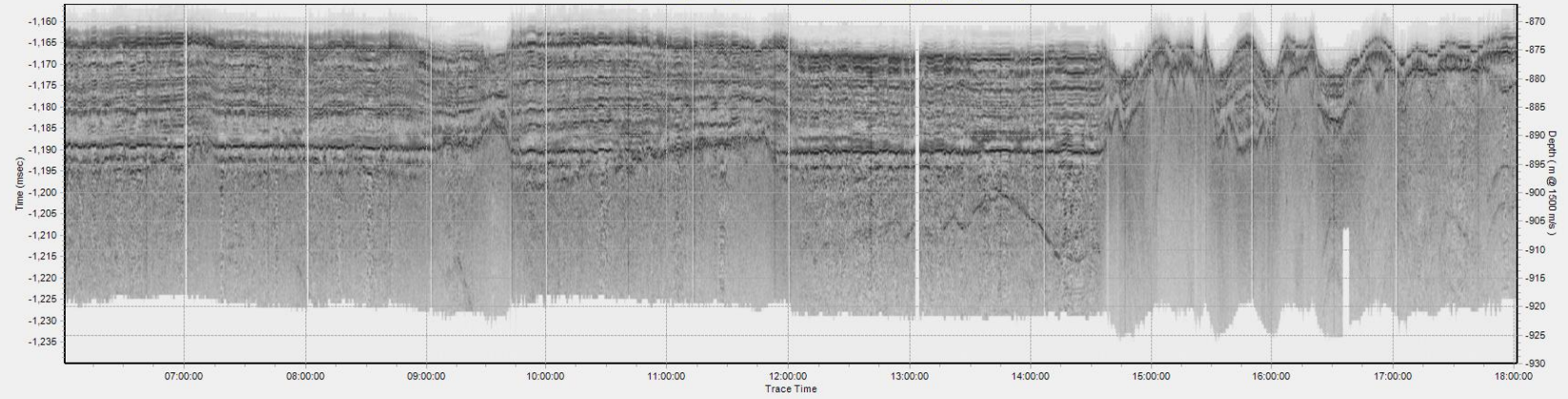
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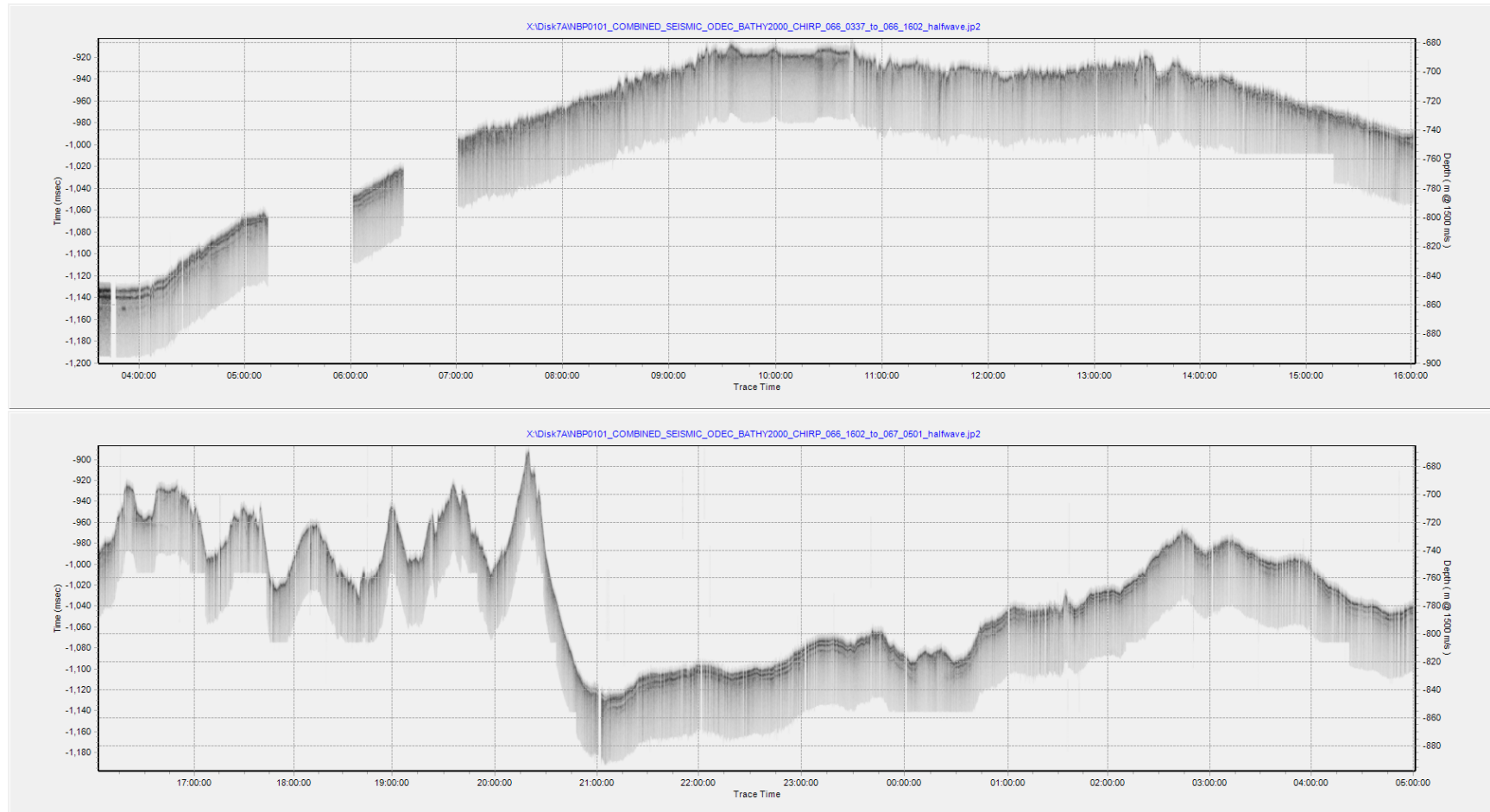
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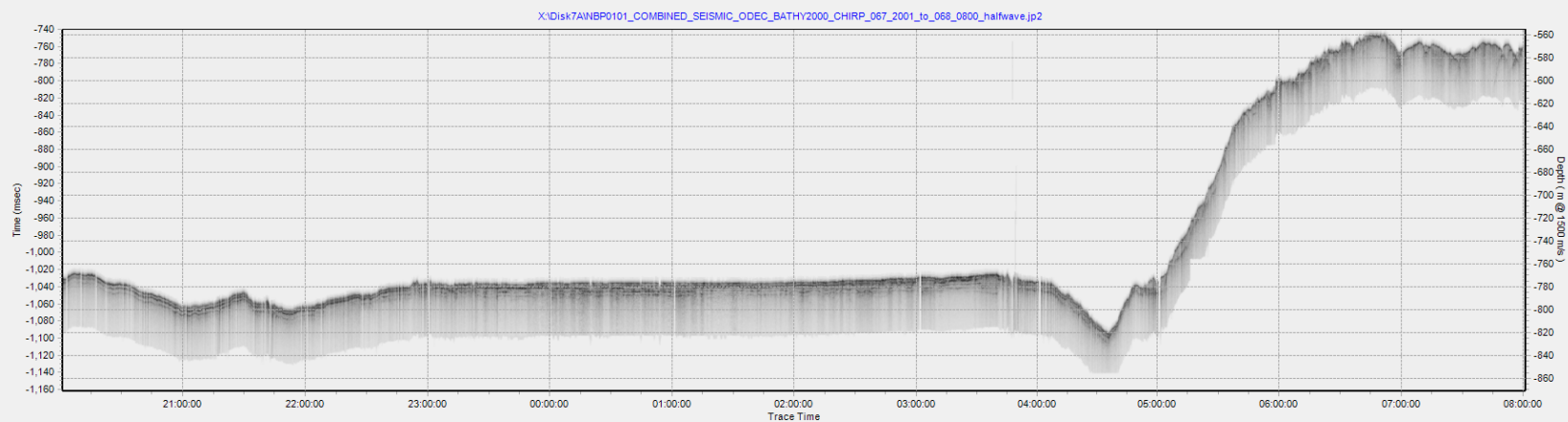
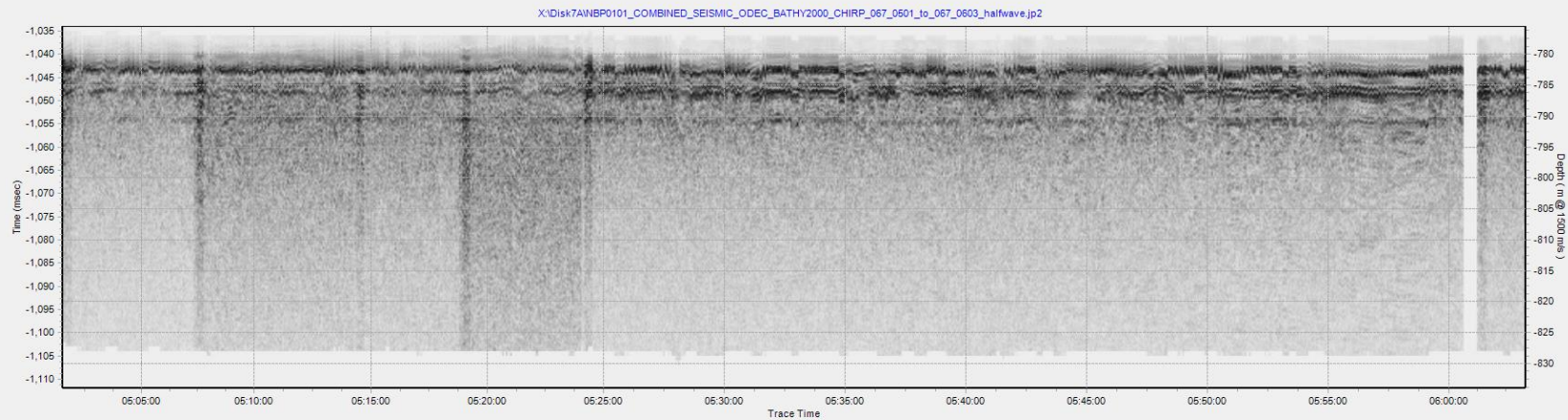


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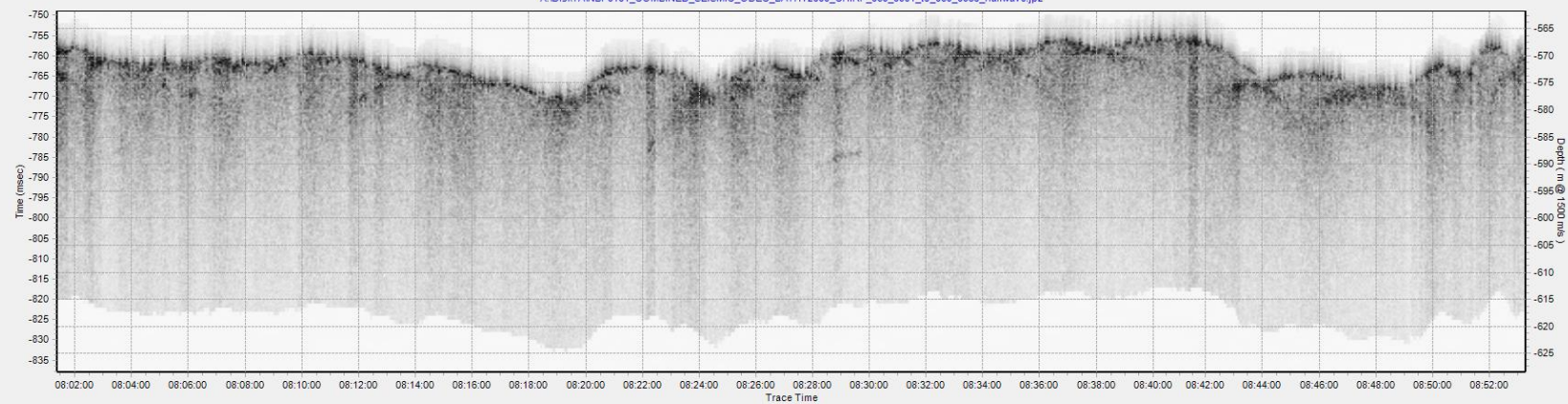


Disk7A

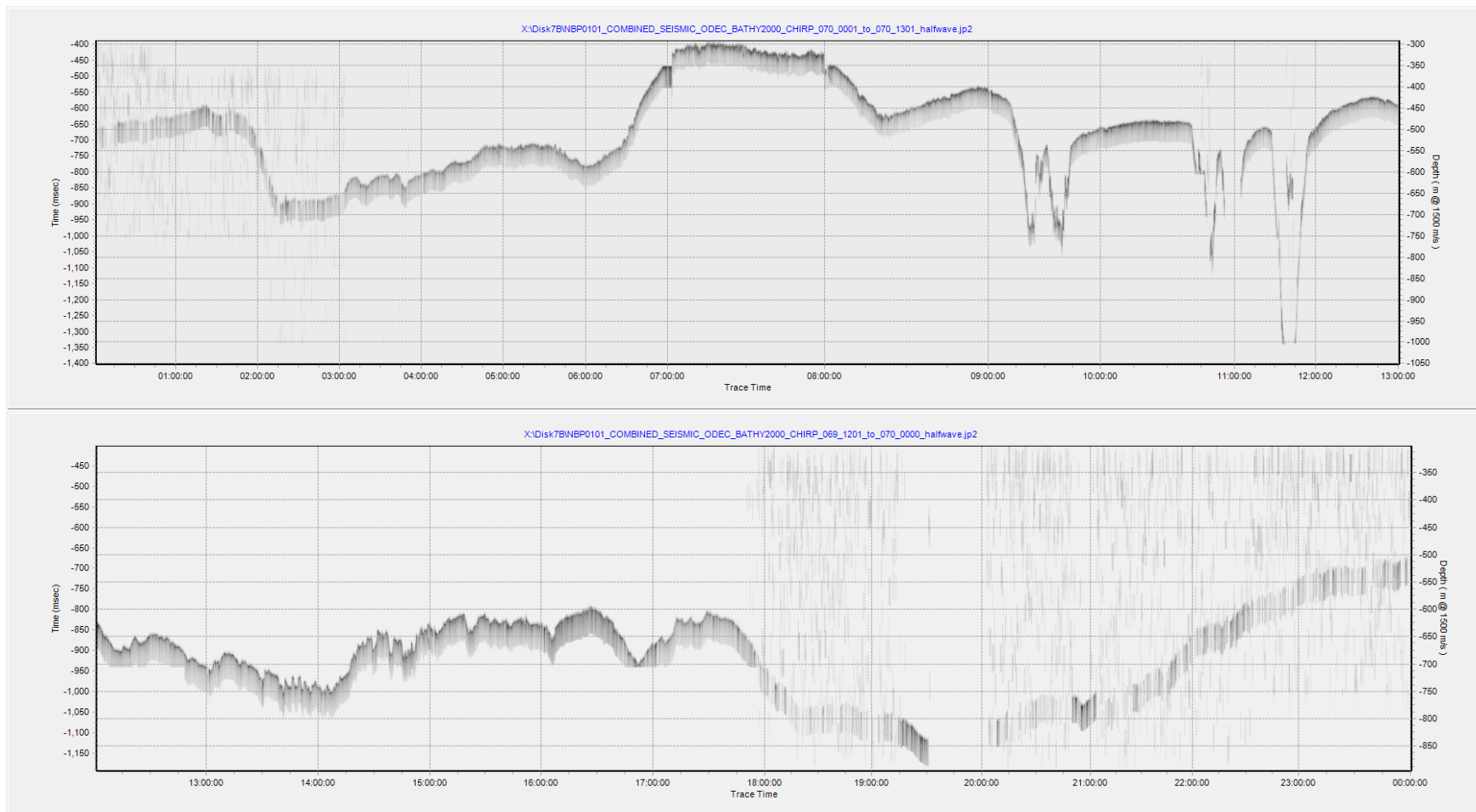


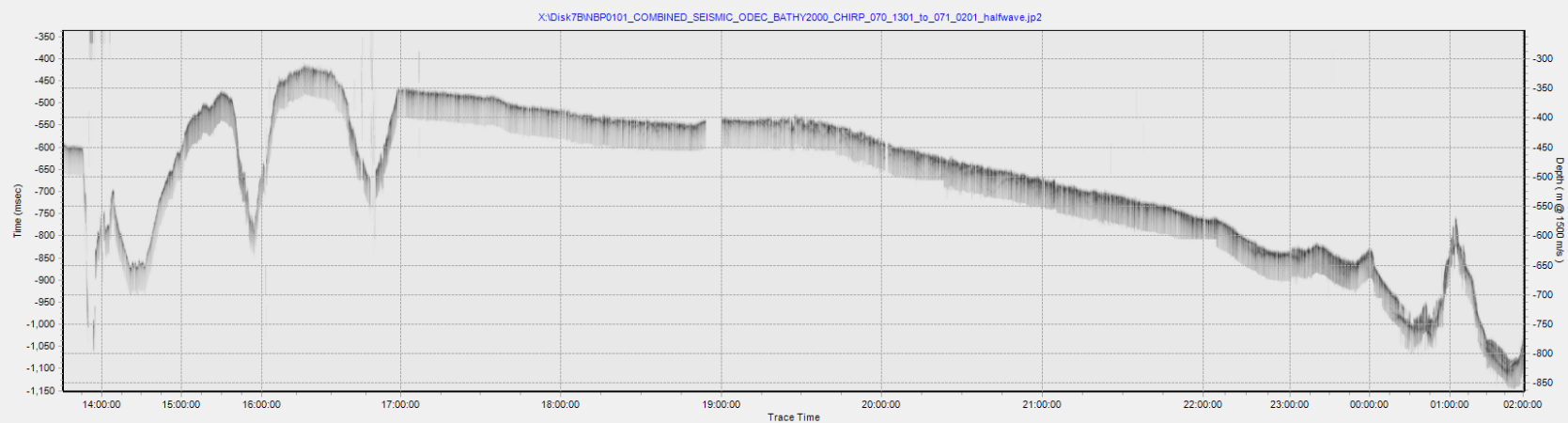
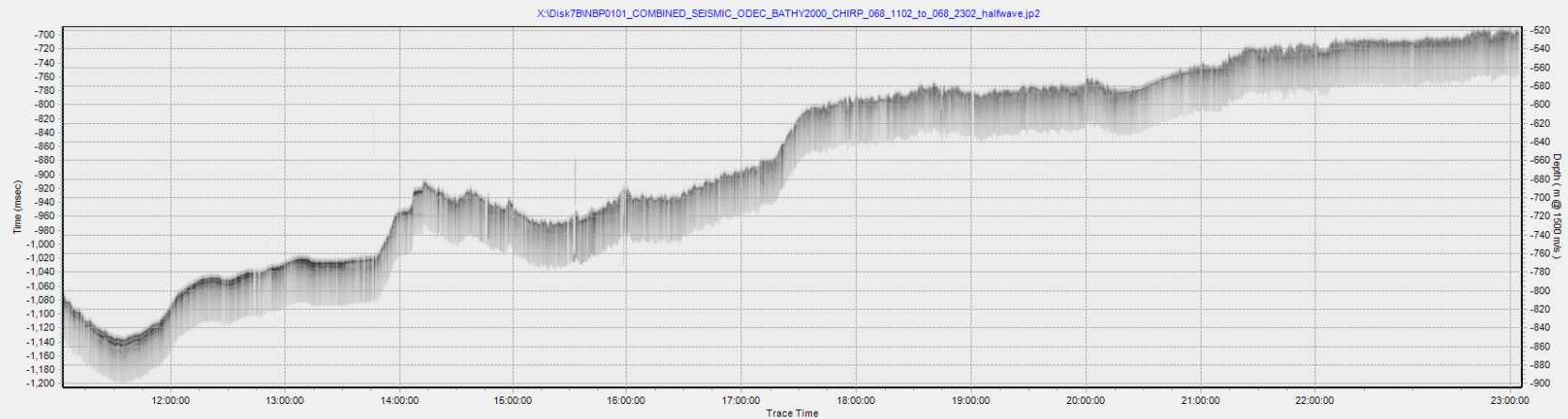


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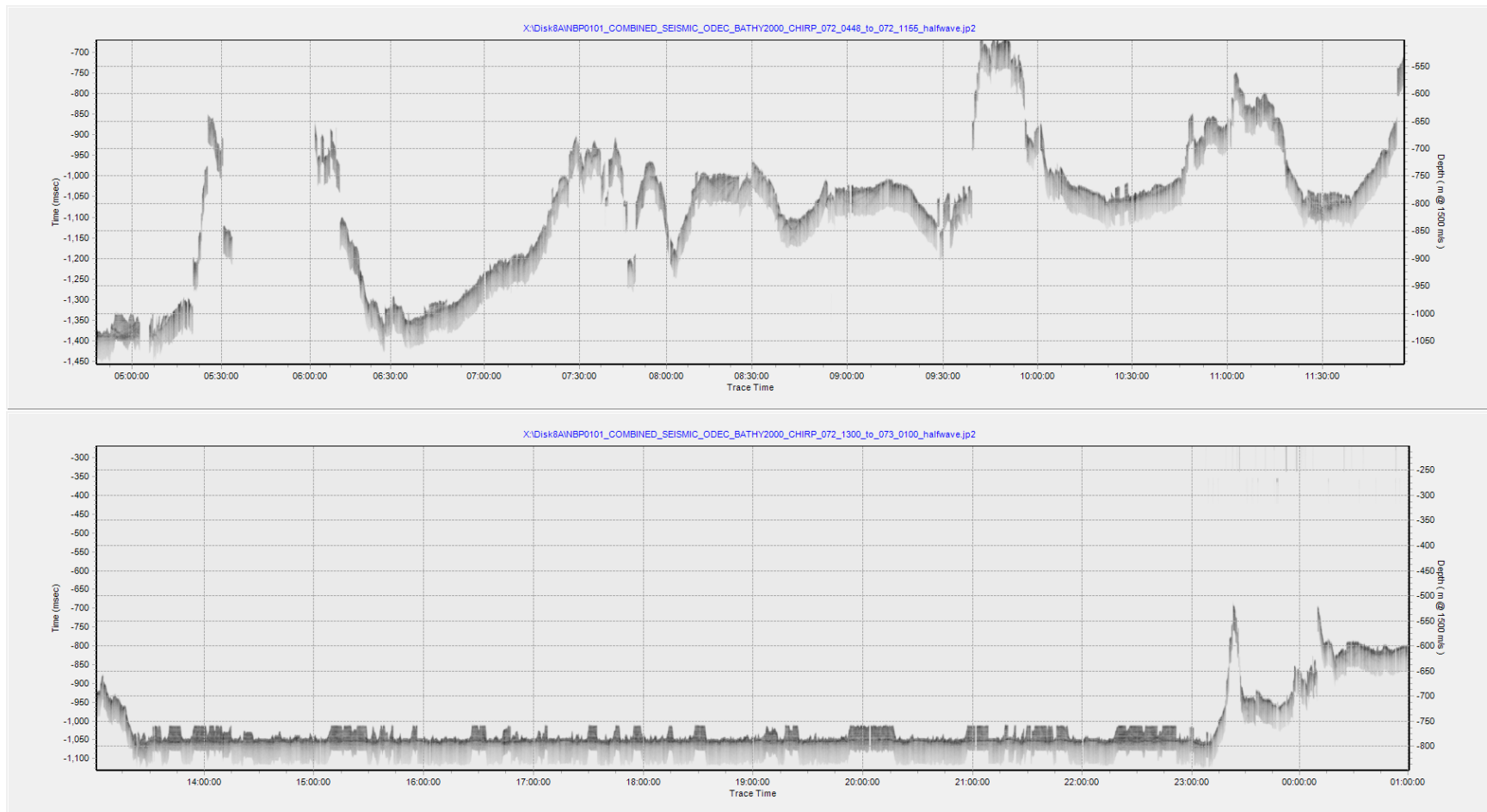


Disk7B

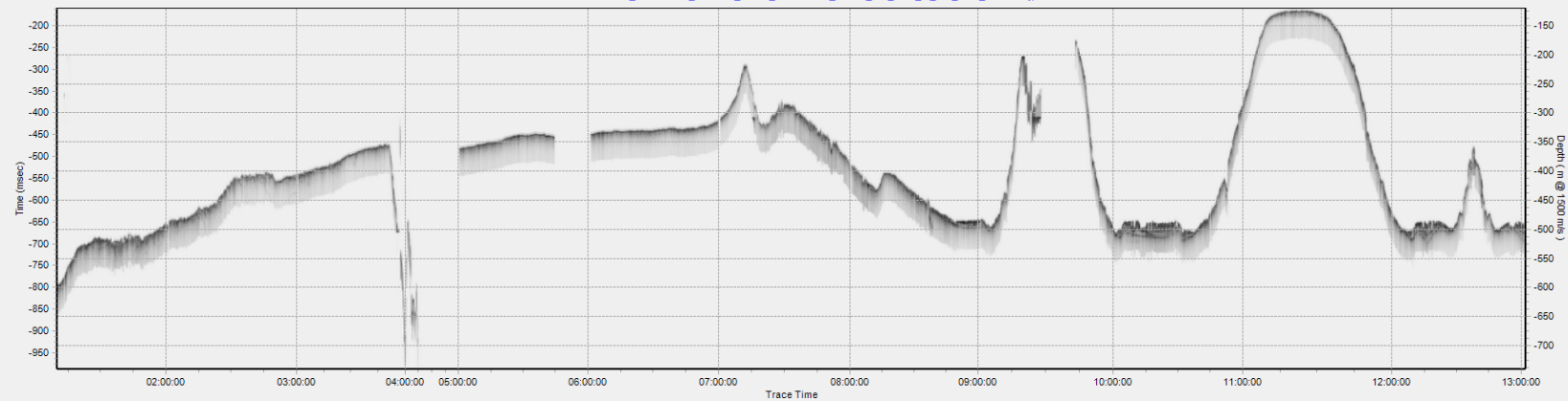




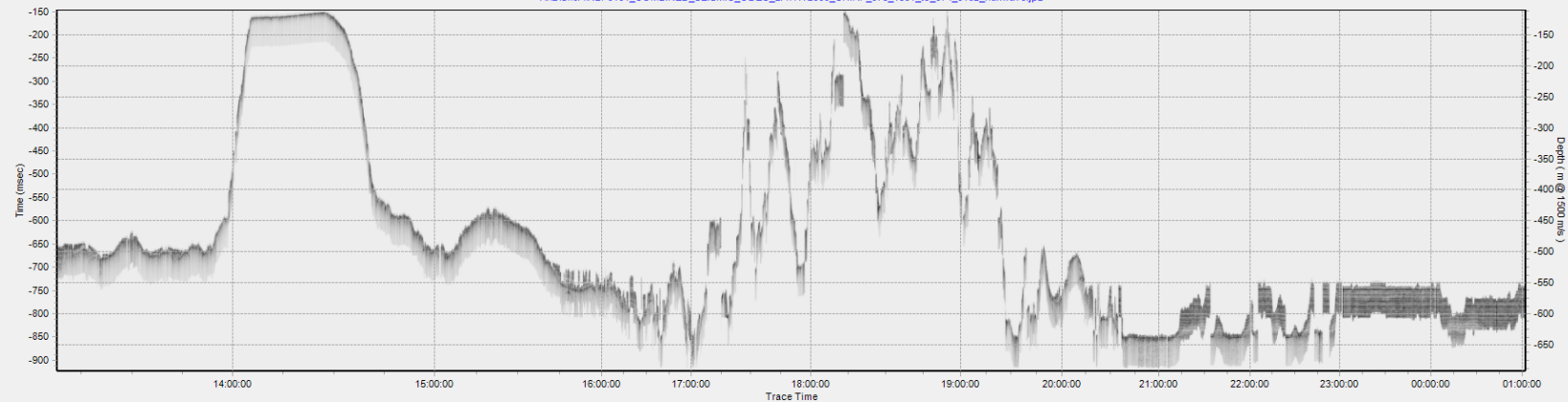
Disk8A

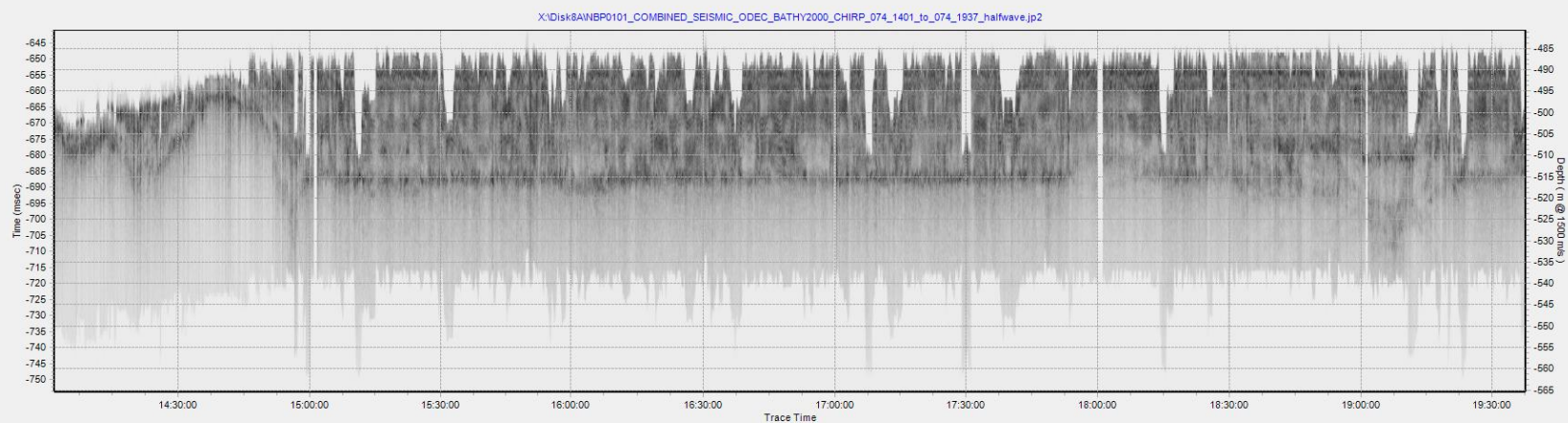
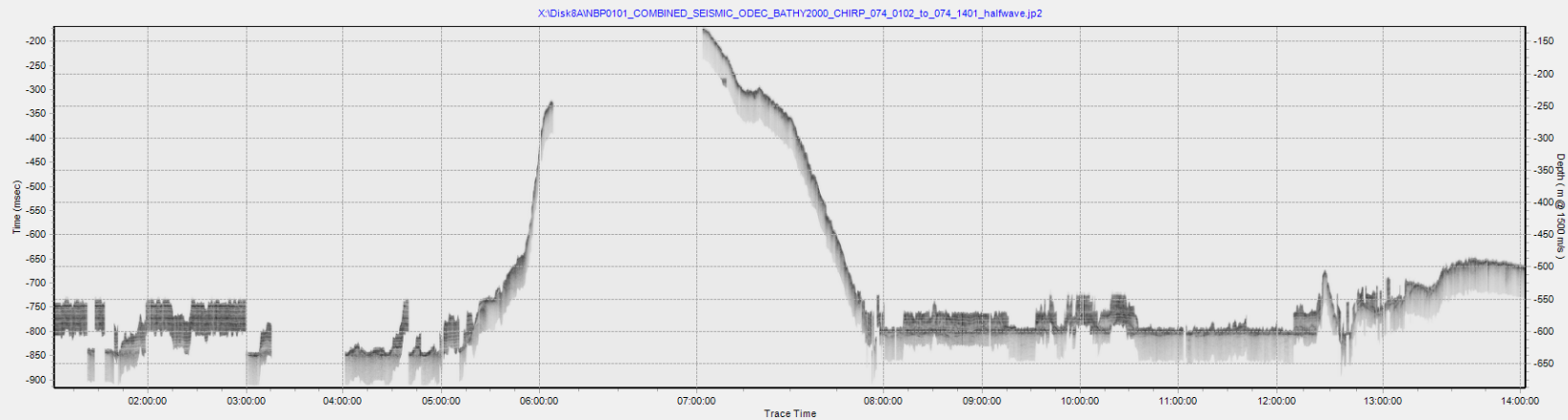


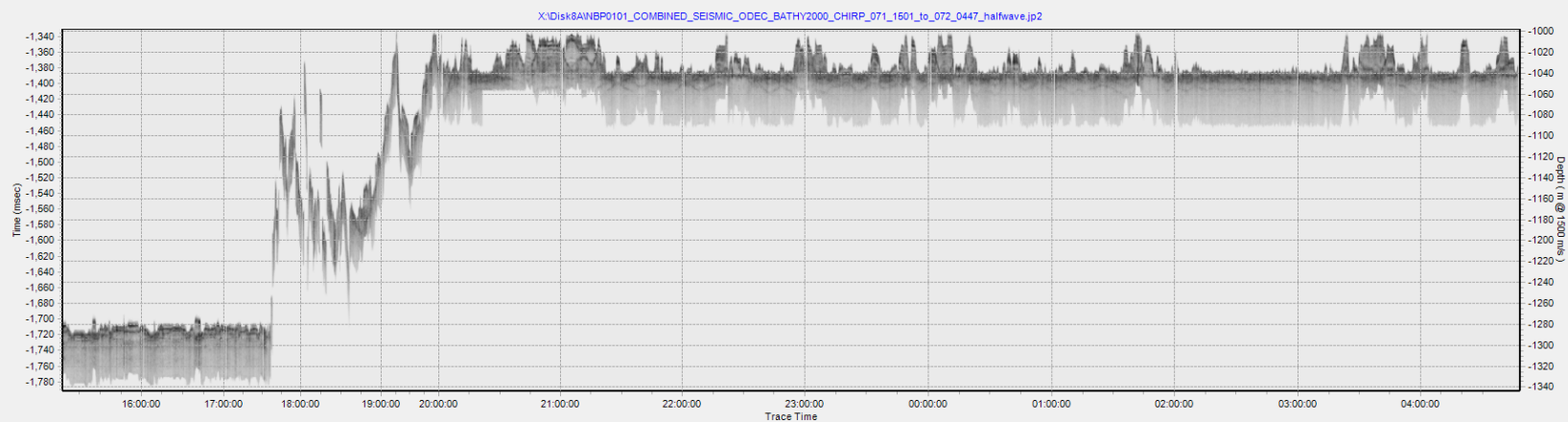
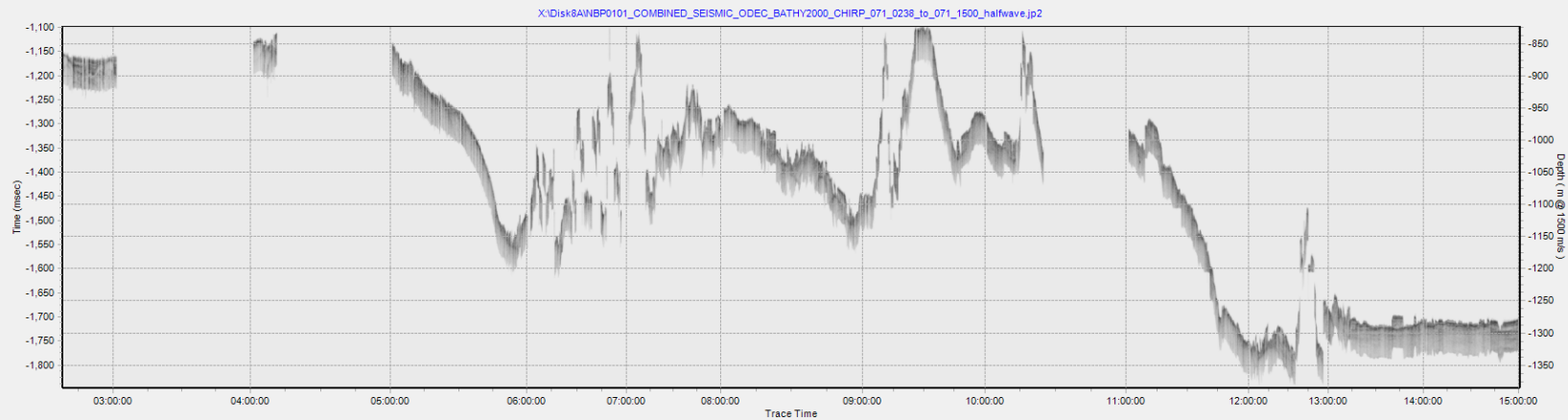
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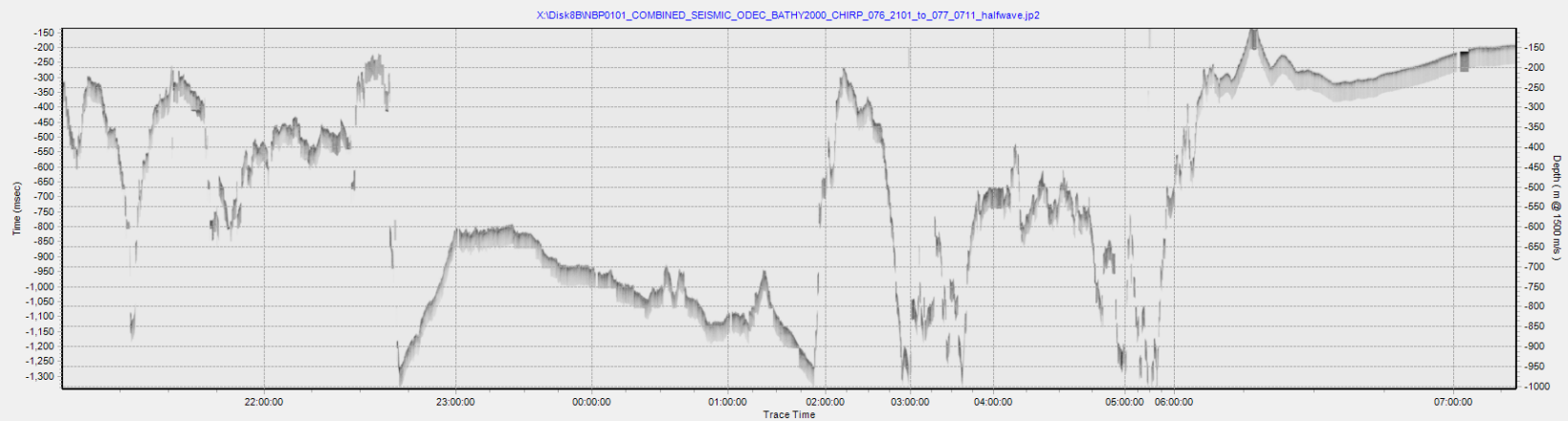
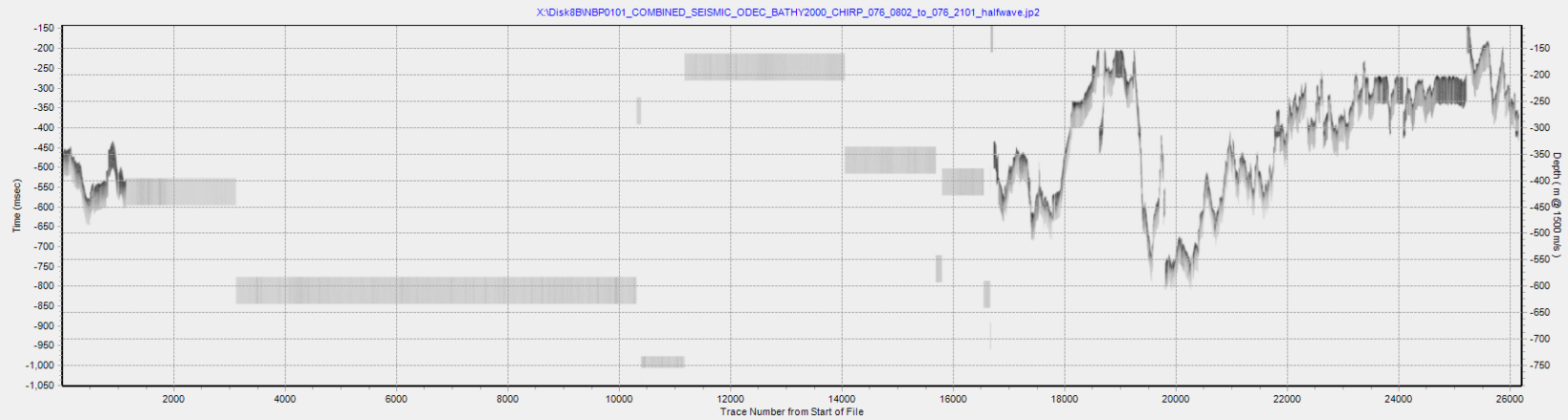
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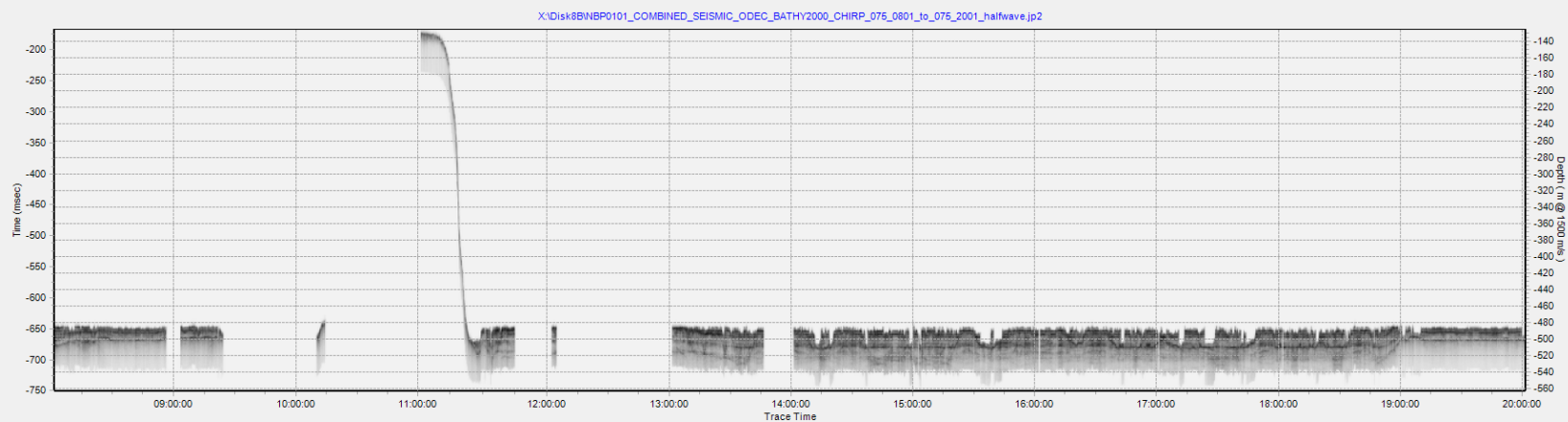
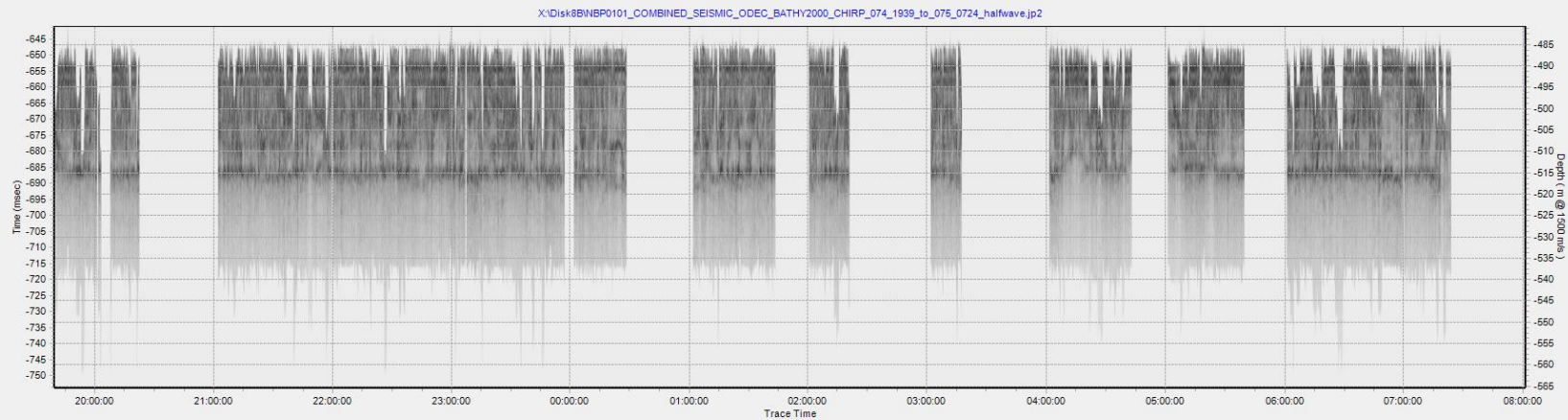




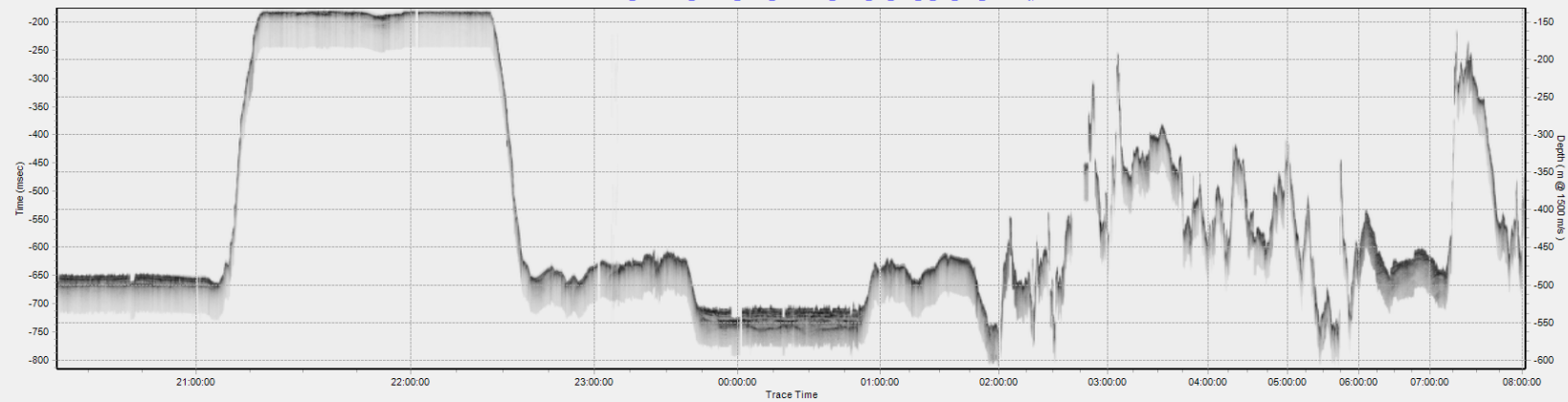


Disk8B

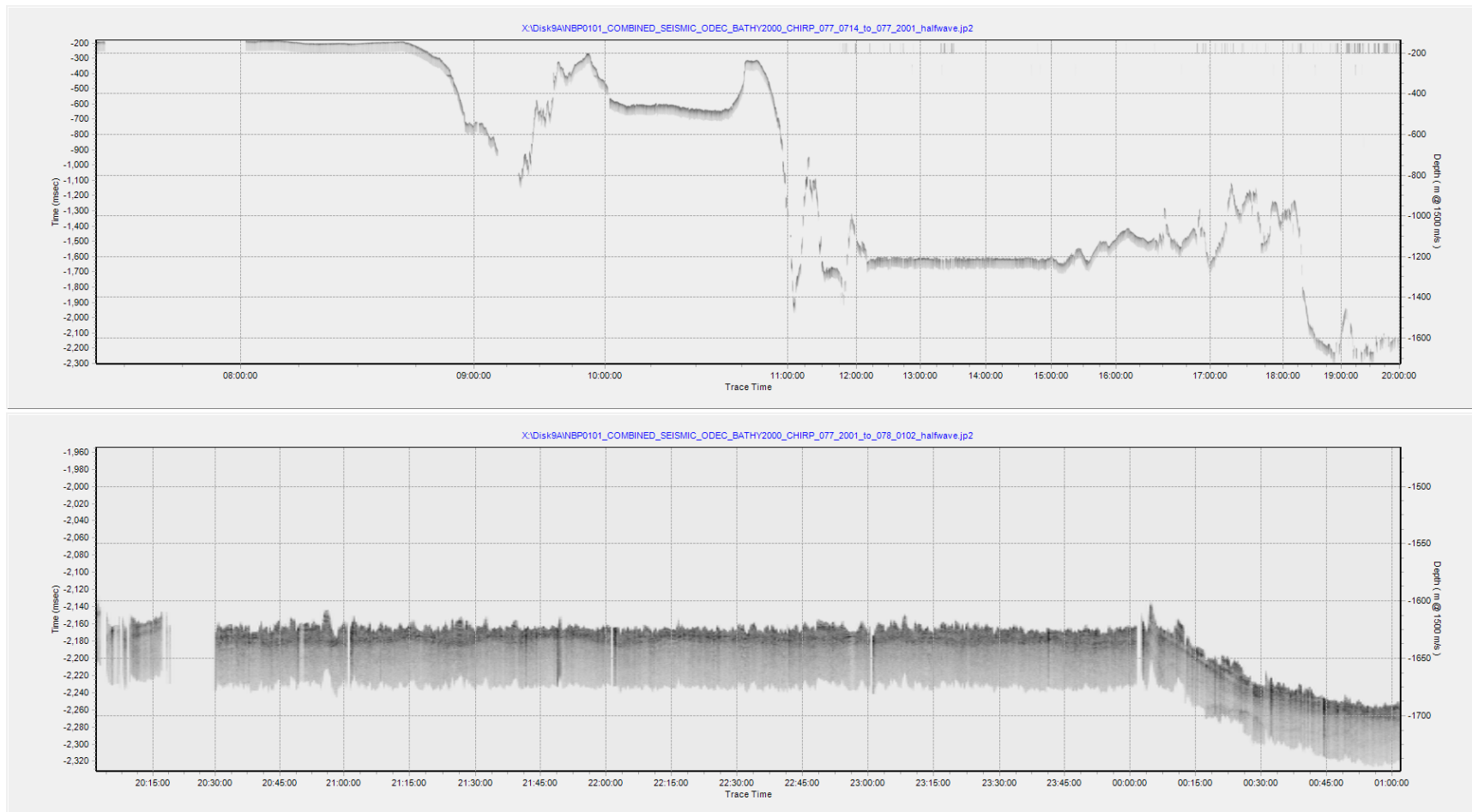


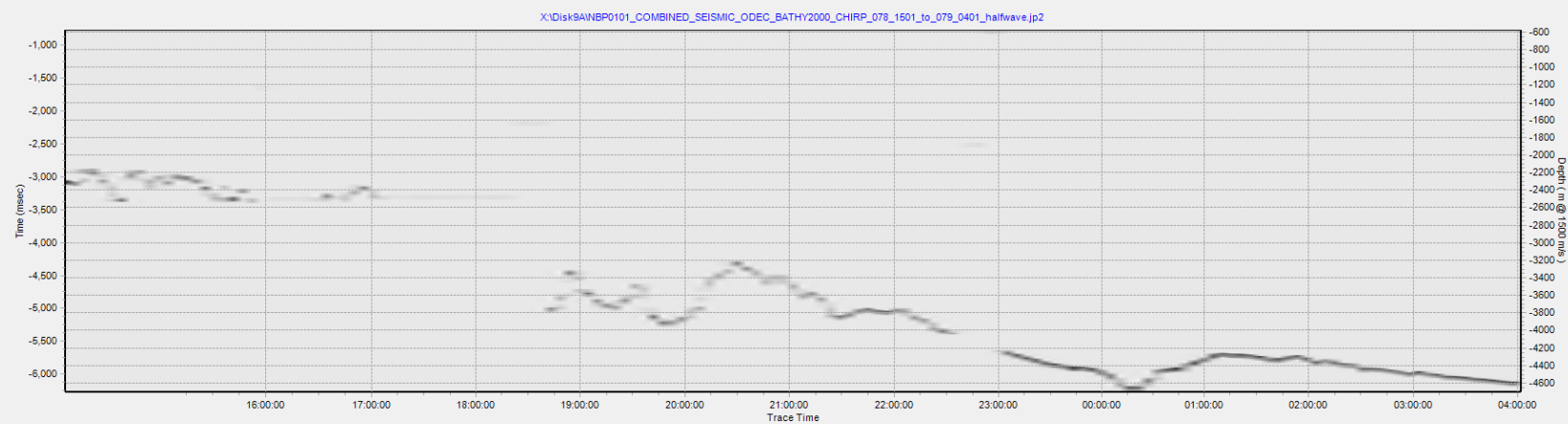
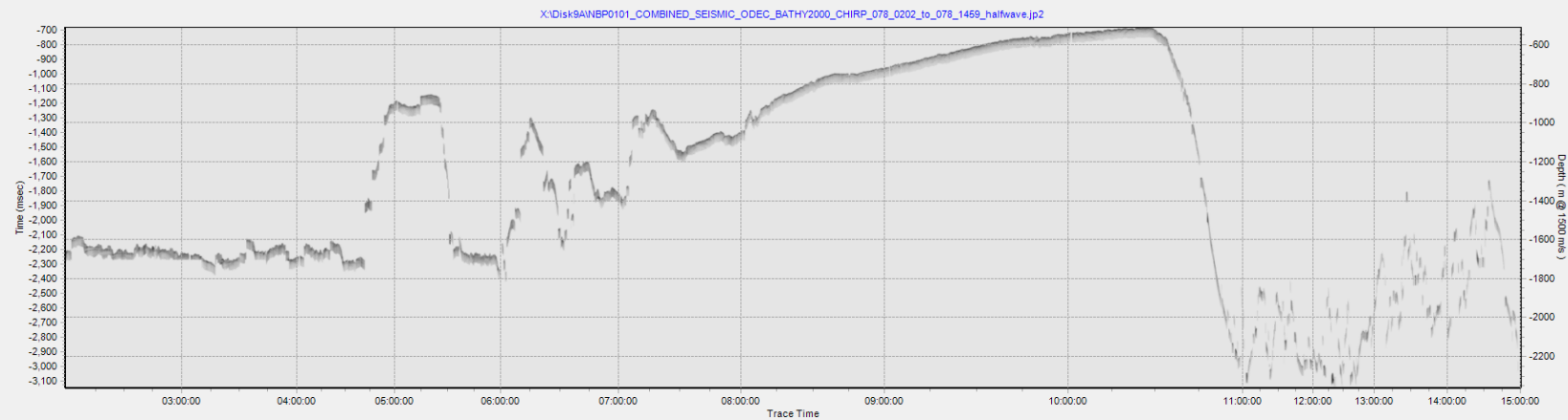


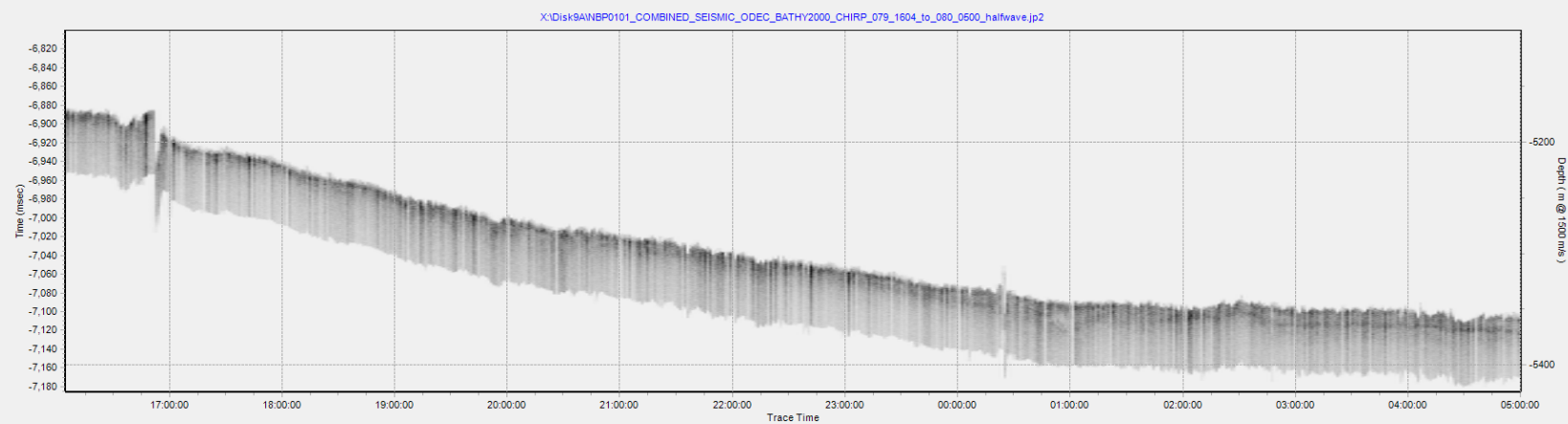
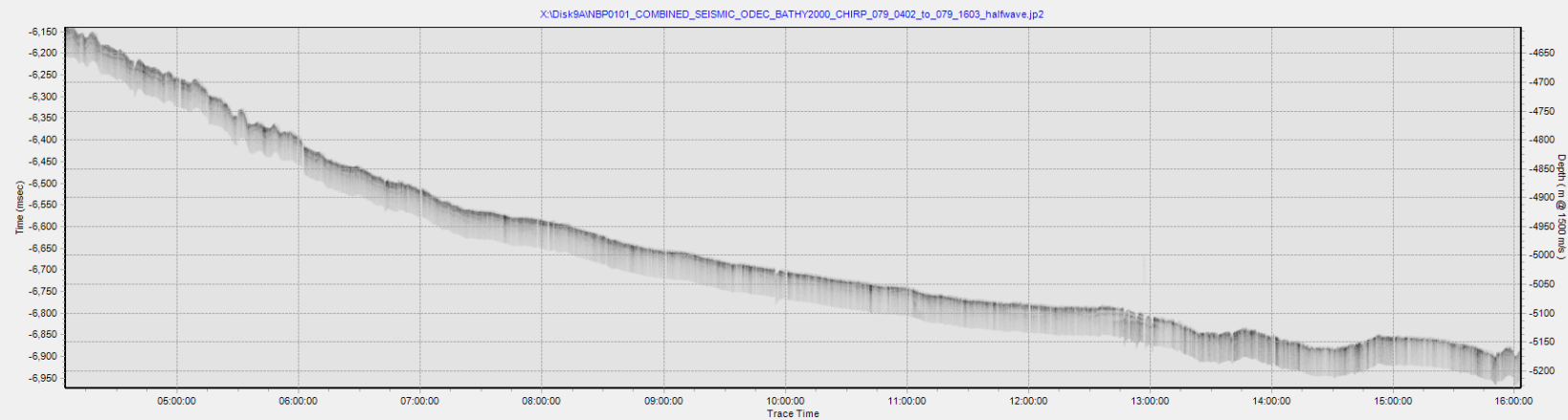
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Disk9A







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