Footprint Removal

NZ 3D Processing

21 April 2021

INSTITUTE FOR GEOPHYSICS

cgg.com

Passion for Geoscience

Processing flow

1. Convert to CGG internal format
2. Nav merge / trace edit
3. Low cut filter
4. Time Variant Scaling (TVS) & Resample to 4ms
5. Swell noise attenuation (SNA)
6. Debubble
7. Linear noise attenuation (LNA)
8. Tidal statics correction
9. Water column statics correction
10. Shot & channel scaling
11. Receiver motion correction (RMC)
12. Joint Deghost & Designature
13. Residual Bubble Removal
14. Source Sensor Datum Correction
15. Shallow Water Demultiple
16. Surface Related Multiple Elimination (3D SRME)
17. Simultaneous Subtraction of MWD & SRME
18. Residual linear noise attenuation (residual LNA)
19. Trace regularization & interpolation
20. Velocity Analysis
21. Radon Demultiple
22. Footprint Removal

Outline

- **Objective:**

  To remove acquisition footprint in common offset domain.

- **Procedure:**
  - Calculate RMS amplitude at every 2000ms consecutively starting from WBT-30.
  - Compute the scalar by smoothing footprint with 500m-Subline direction, 100m–Crossline direction.
  - Apply the scalar on input data to remove footprint.

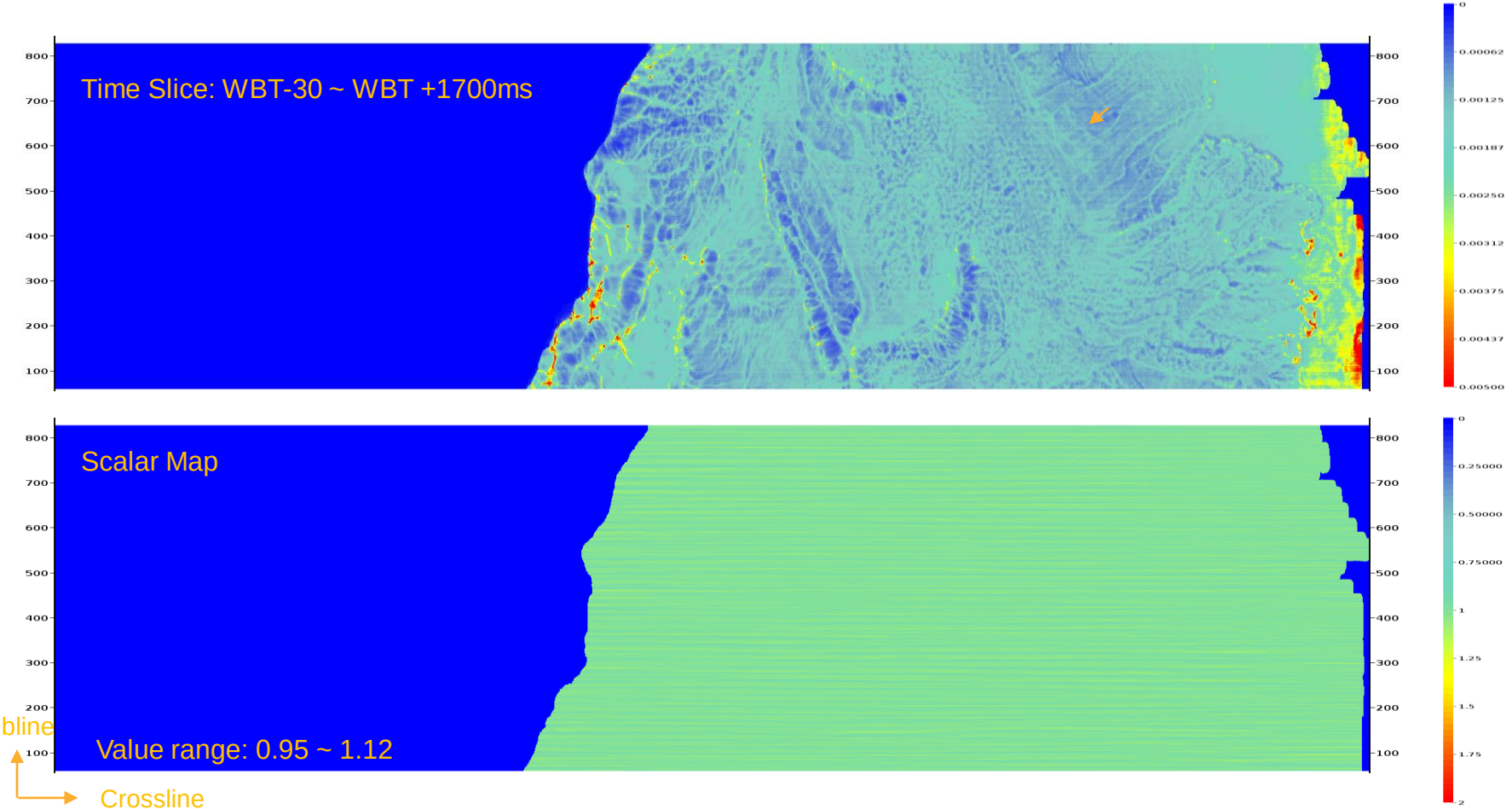
- **Display:**

  Amplitude map, scalar map, Stack.
  Test offset class: 550m

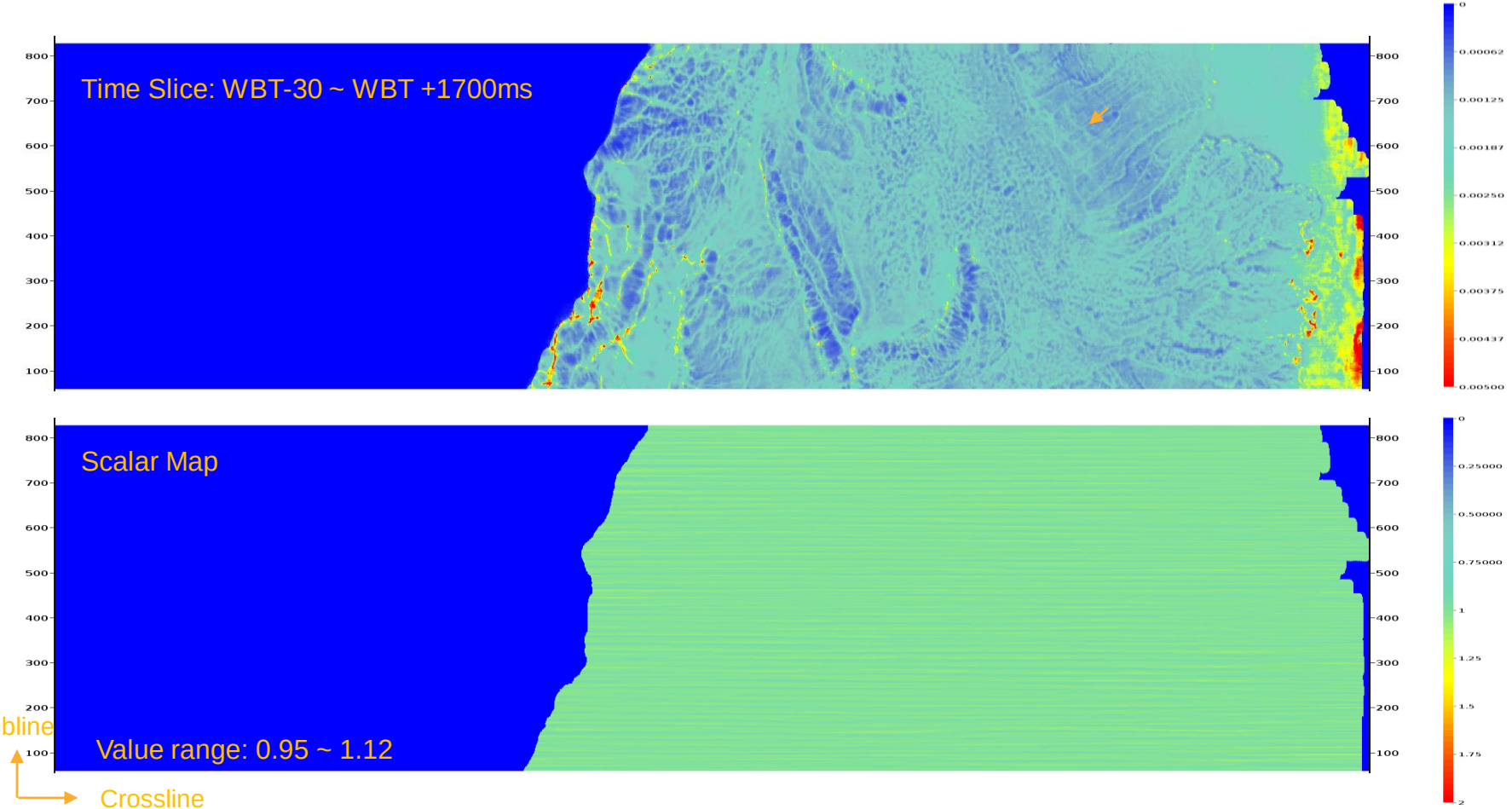
- **Observation & Recommendation:**

  The acquisition footprint observed on amplitude map is attenuated. It’s recommend to apply footprint removal for production.

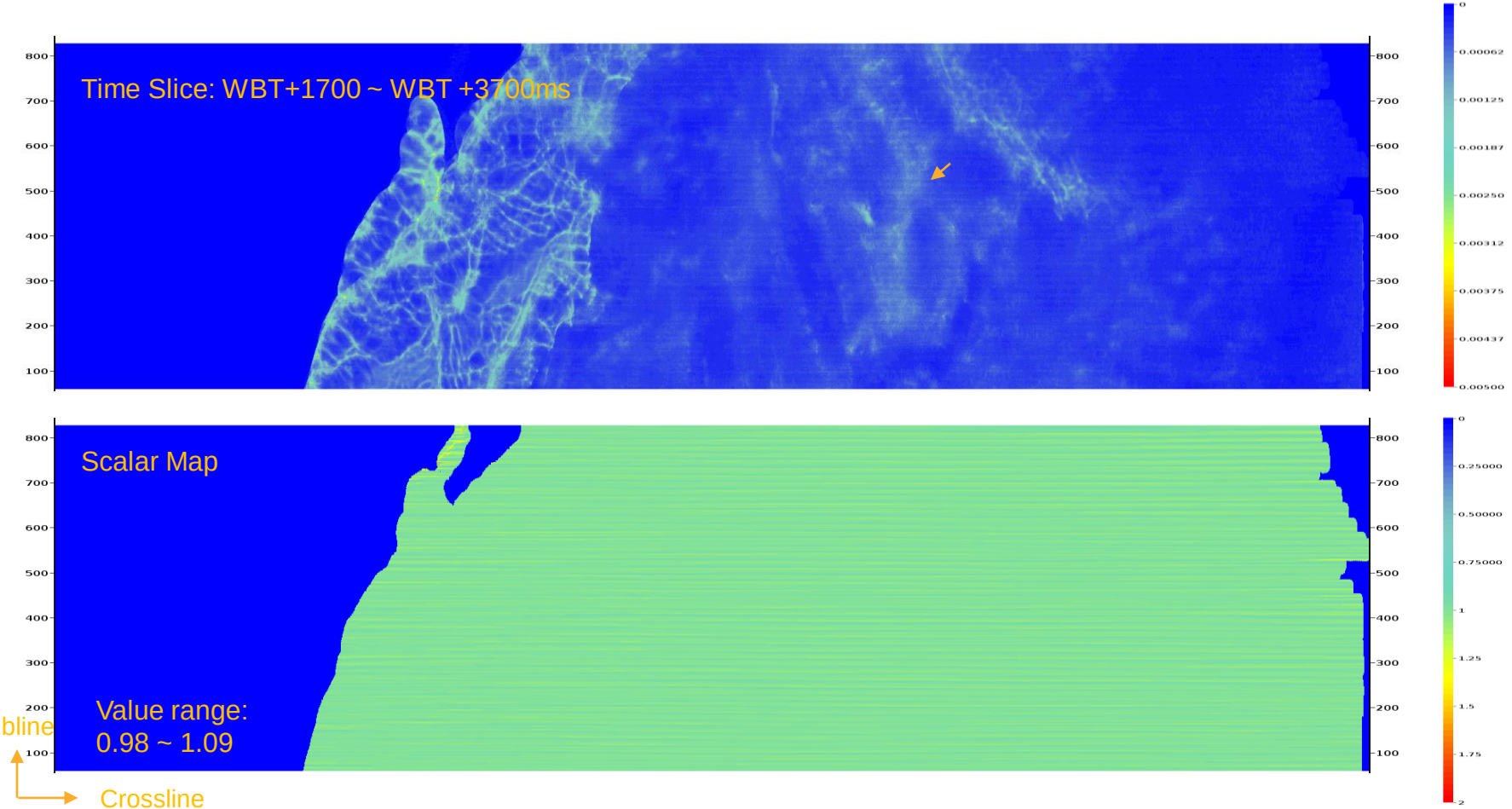
RMS Amplitude & Scalar Map before Footprint Removal



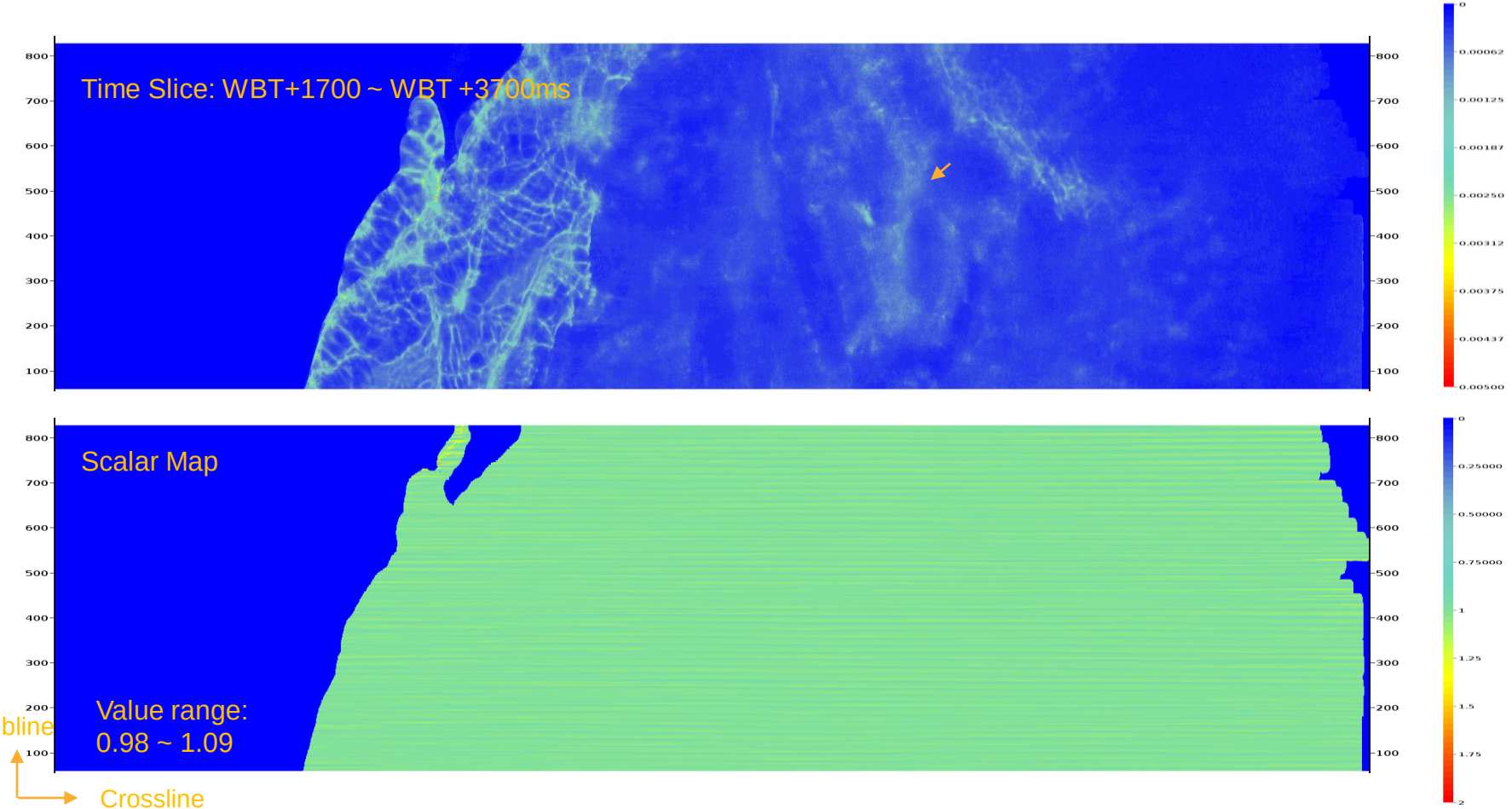
RMS Amplitude & Scalar Map after Footprint Removal



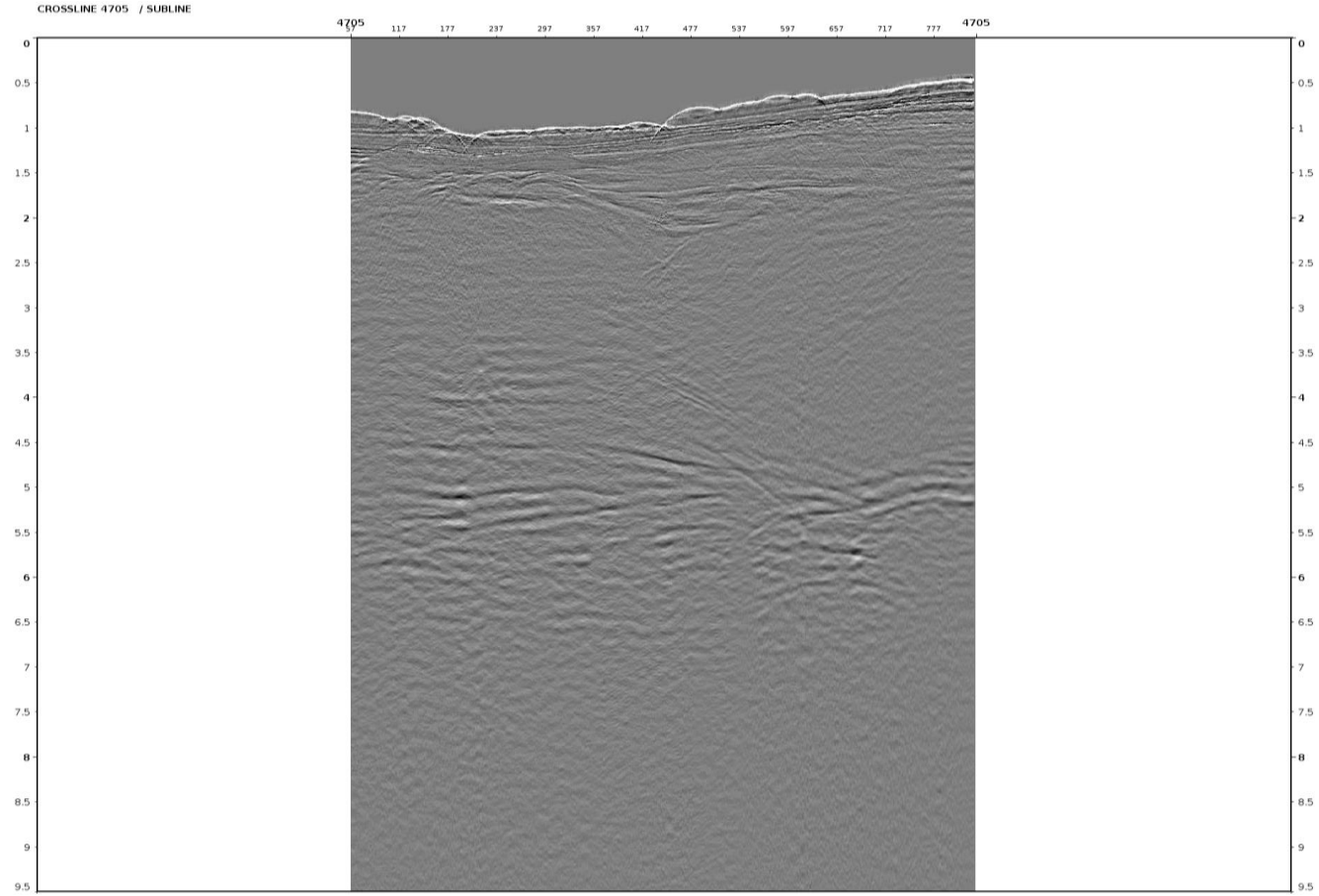
RMS Amplitude & Scalar Map before Footprint Removal



RMS Amplitude & Scalar Map after Footprint Removal



XL 4705 Common Offset 600m before Footprint Removal



- The survey doesn't have too much footprint. Hard to observe changes from crossline display.

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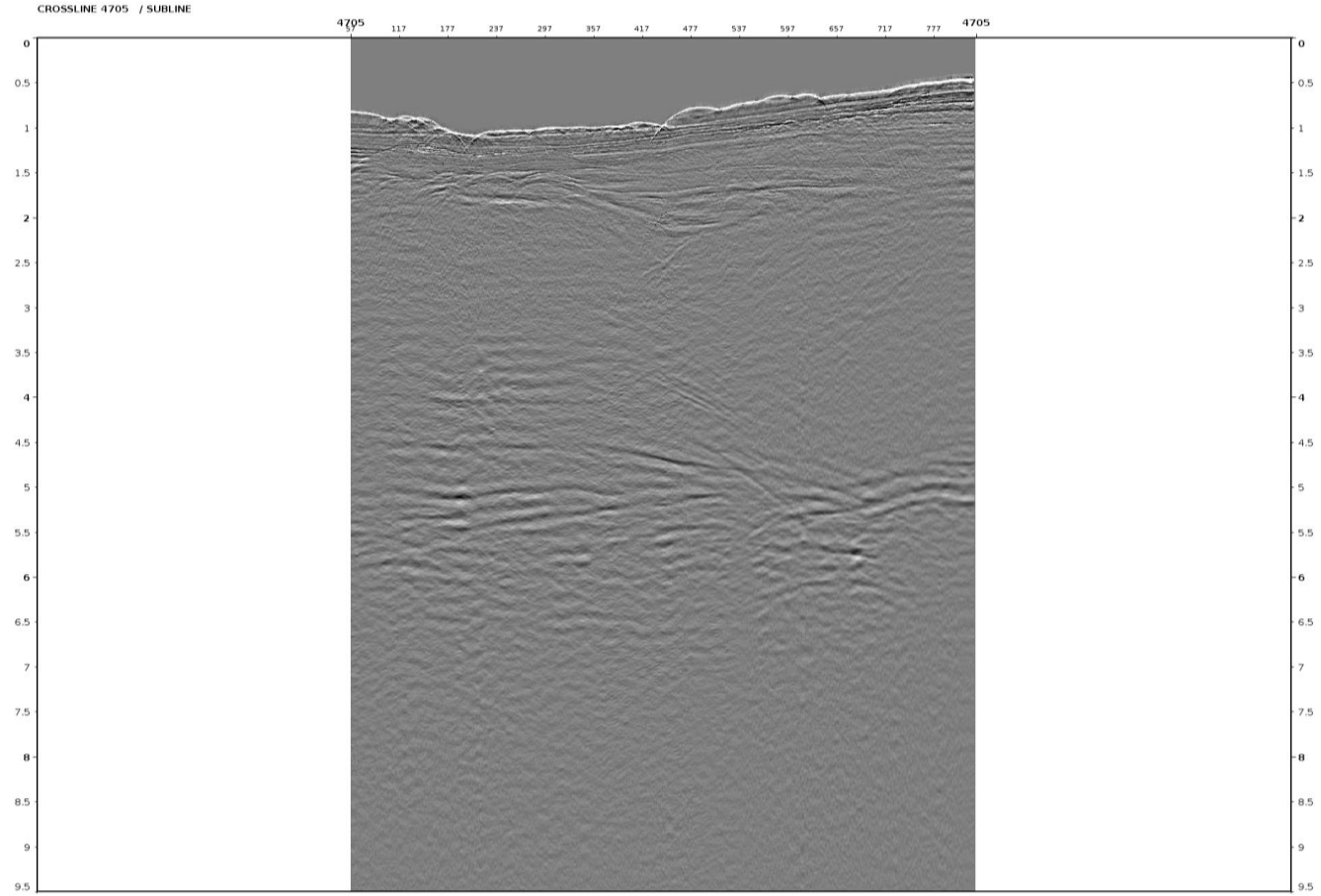

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