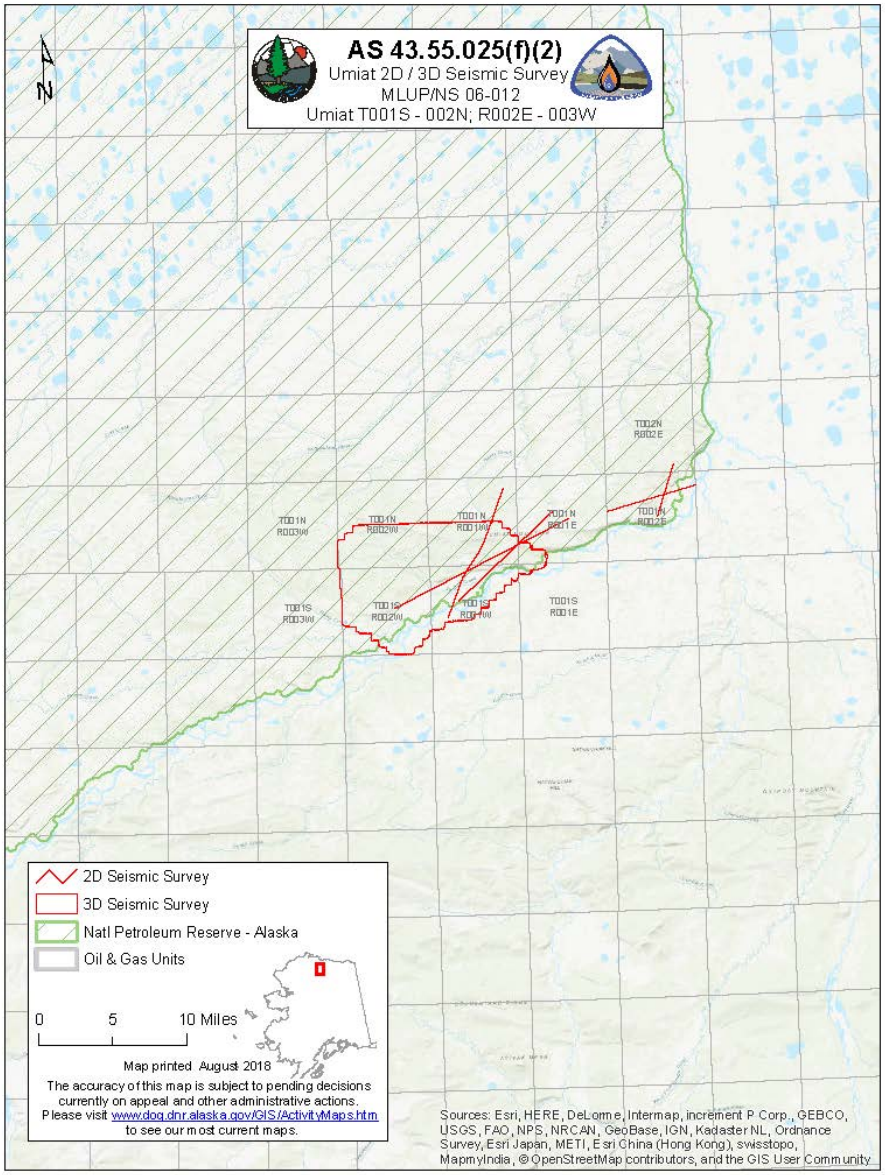
Umiat 2D/3D



PostStack (SEG-Y)

2D Volumes

All Lines:

- PreStack Migration (PSTM) Filtered Angle Stacks (0-10, 10-20, & 20-30)
- PostStack Time Migration (PoSTM) Filtered & Raw
- PreStack Time Migration (PSTM) Filtered & Raw
- Energy Absorption

In addition to above, Line U8-78-5 also has:

- PostStack Time Migration (PoSTM) Raw HIRES 120 and HIRES 80

3D Volumes

- PreStack Migration (PSTM) Angle Stacks (Near, Mid, Far)
- PostStack Time Migration (PoSTM)
- PreStack Time Migration (PSTM) Relative Amplitude Raw
- PreStack Time Migration ACG 1000
- PreStack Time Migration Spectral Balancing ACG & Raw
- Energy Absorption

PreStack (SEG-Y)

2D Volumes

- Two sets of PreStack Time Migration (PSTM) Gathers
- Correlated Field Files

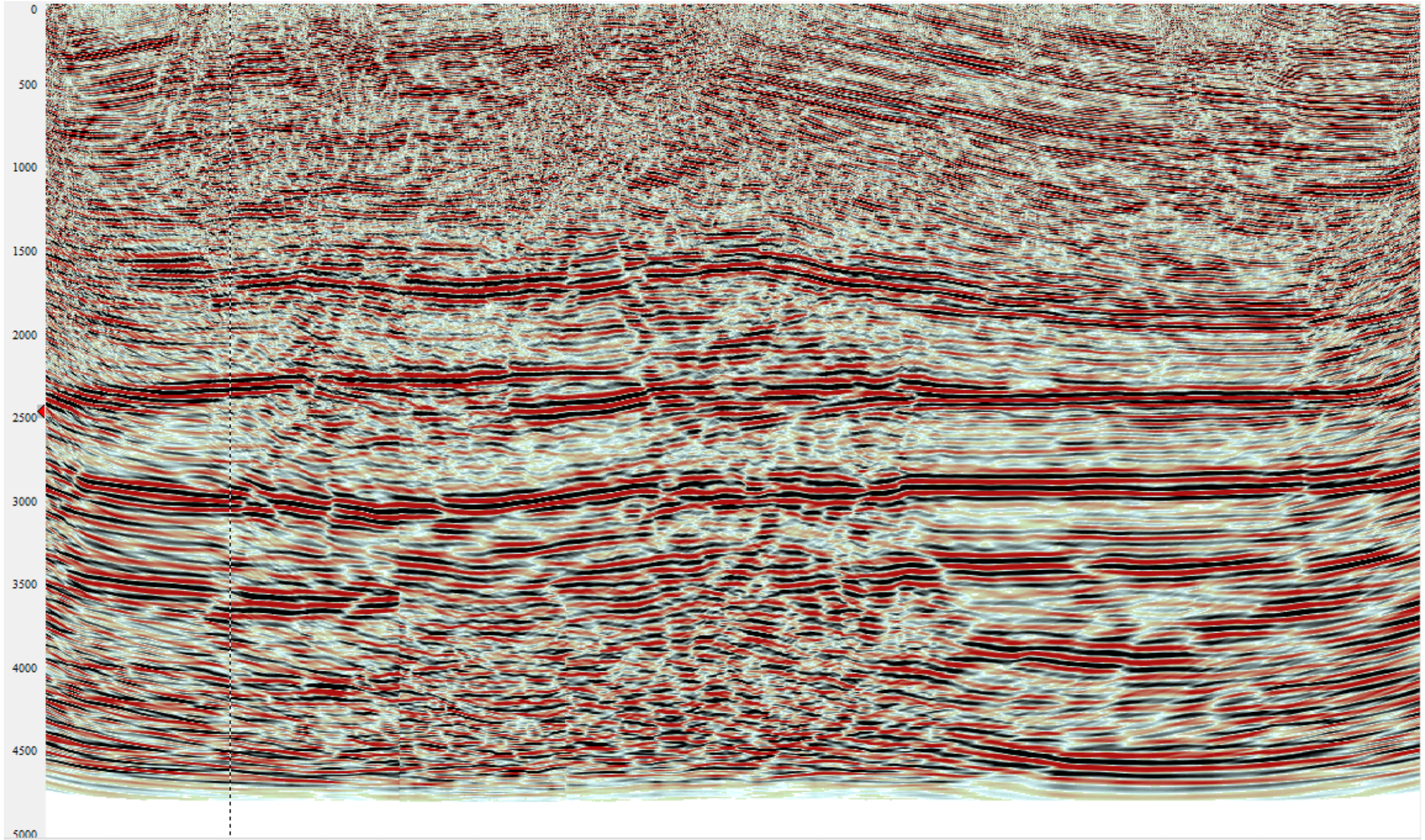
3D Volumes

- PreStack Time Migrated (PSTM) Gathers
- Correlated Raw Field Data

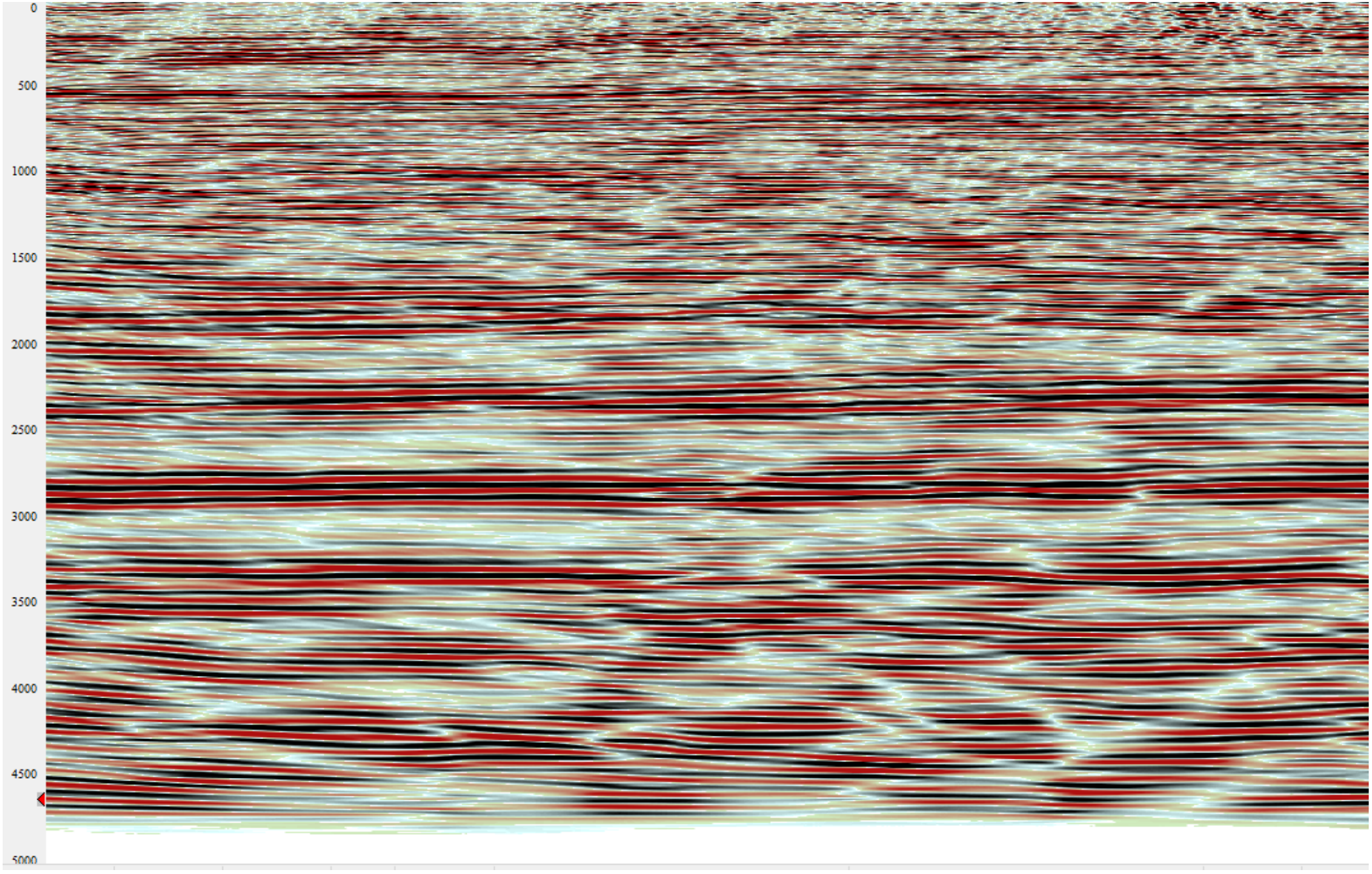
Support *(included with PostStack or PreStack orders)*

- Structure Maps
- Navigation (multi files/formats)
- Velocities (TXT and SGY)
- Survey Support files (multi files/formats)
- Seismic Ventures Processing Sequence (PDF)
- Load Sheet for 3D (PDF)

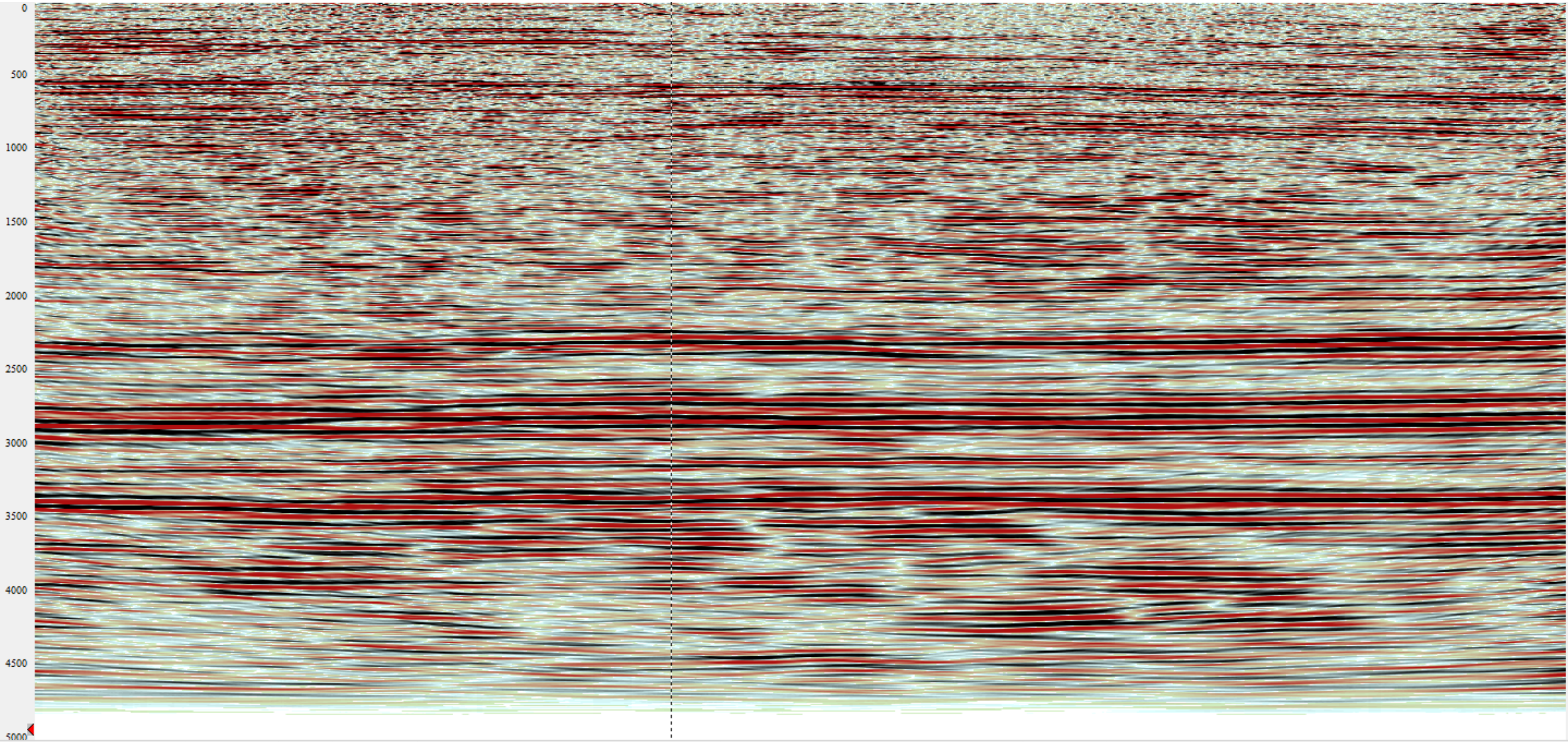
2D Volumes — Pre Stack Time Migrated (PSTM) Filtered Angle Stacks (Horizontal scale: 150 traces/inch, Vertical scale: 1.5 inches/second, Time 0 – 5 seconds)



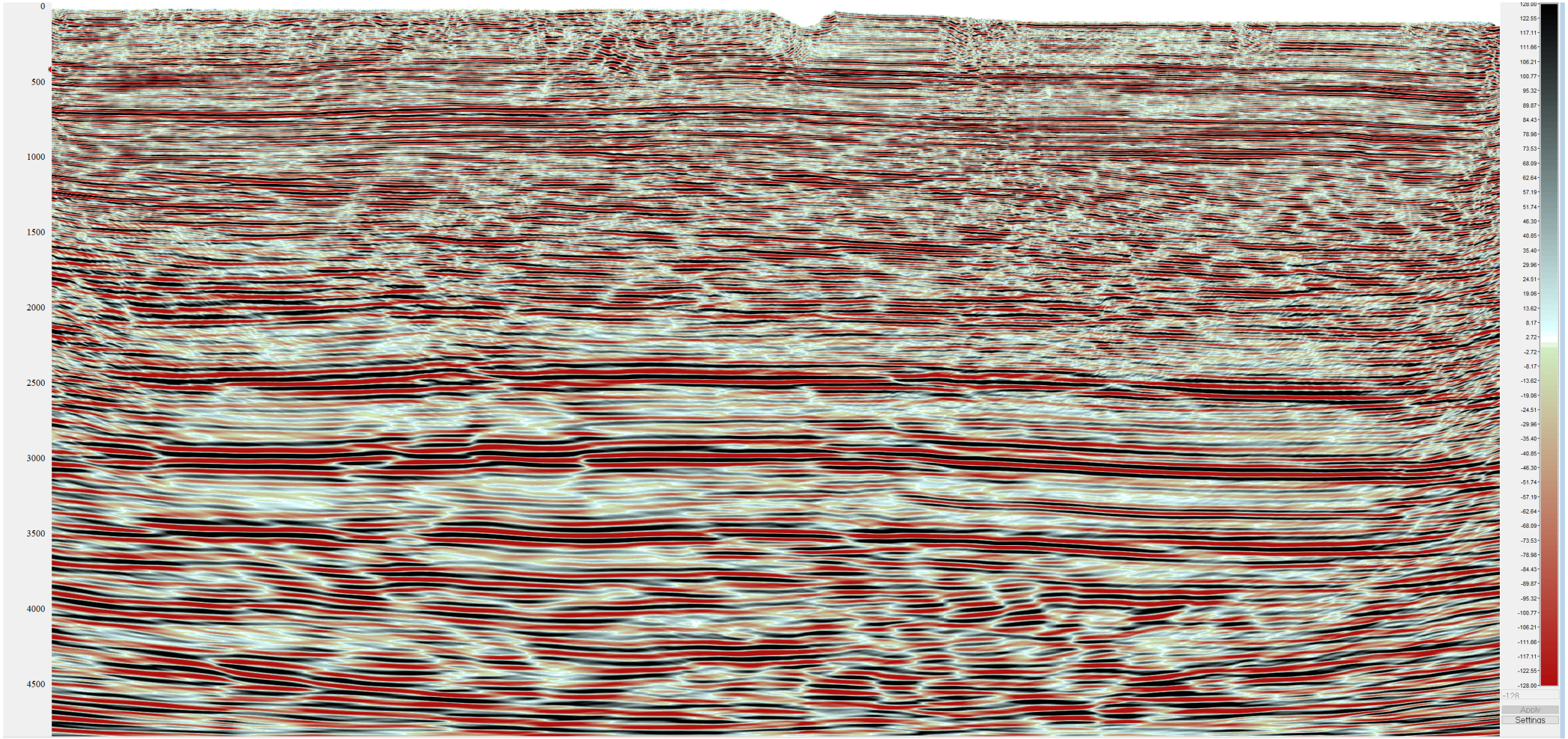
2D Volumes — Post Stack Time Migration (PoSTM) Filtered (Horizontal scale: 50 traces/inch, Vertical scale: 1.5 inches/second, Time 0 – 5 seconds)



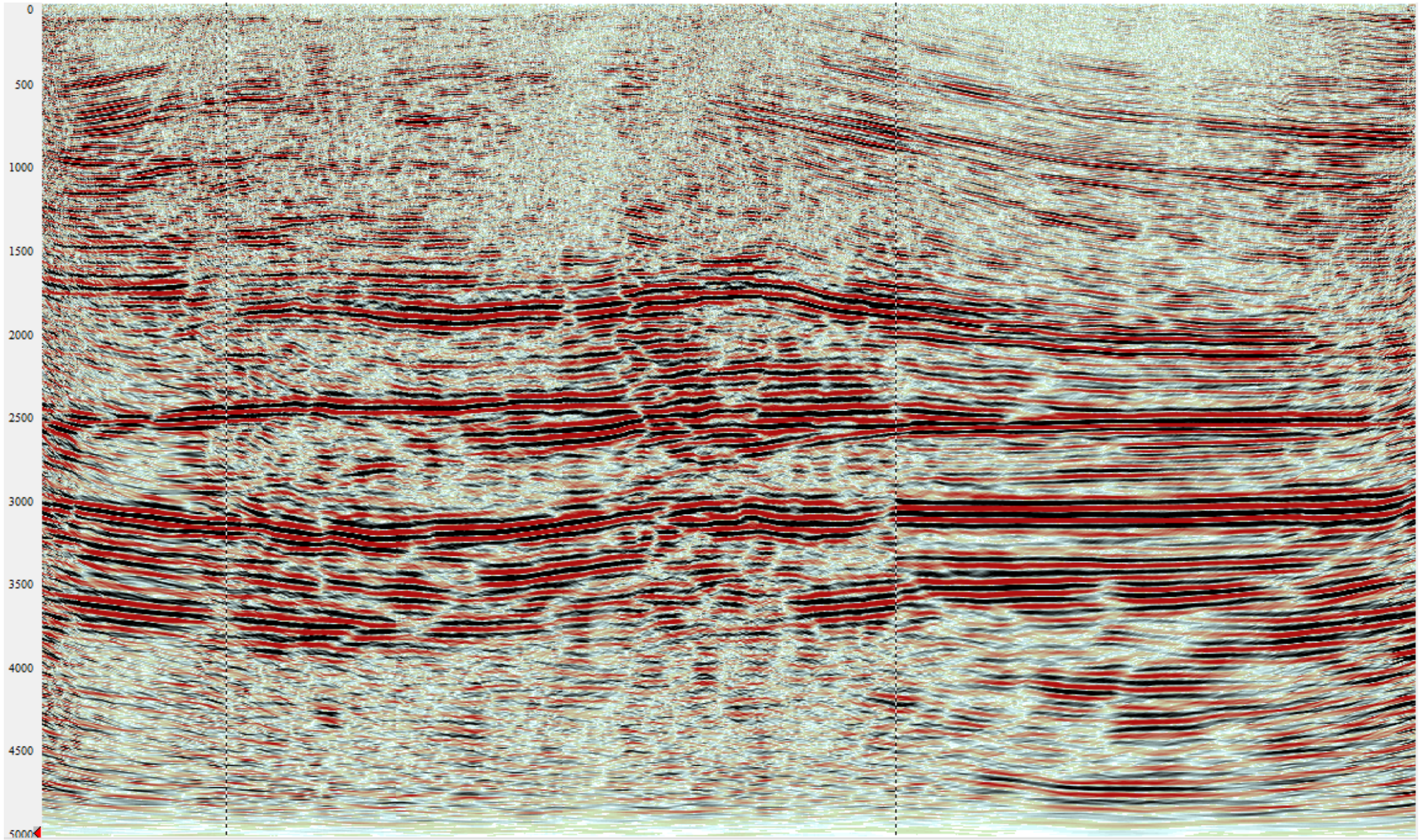
2D Volumes — Post Stack Time Migration (PoSTM) Raw (Horizontal scale: 50 traces/inch, Vertical scale: 1.5 inches/second, Time 0 – 5 seconds)



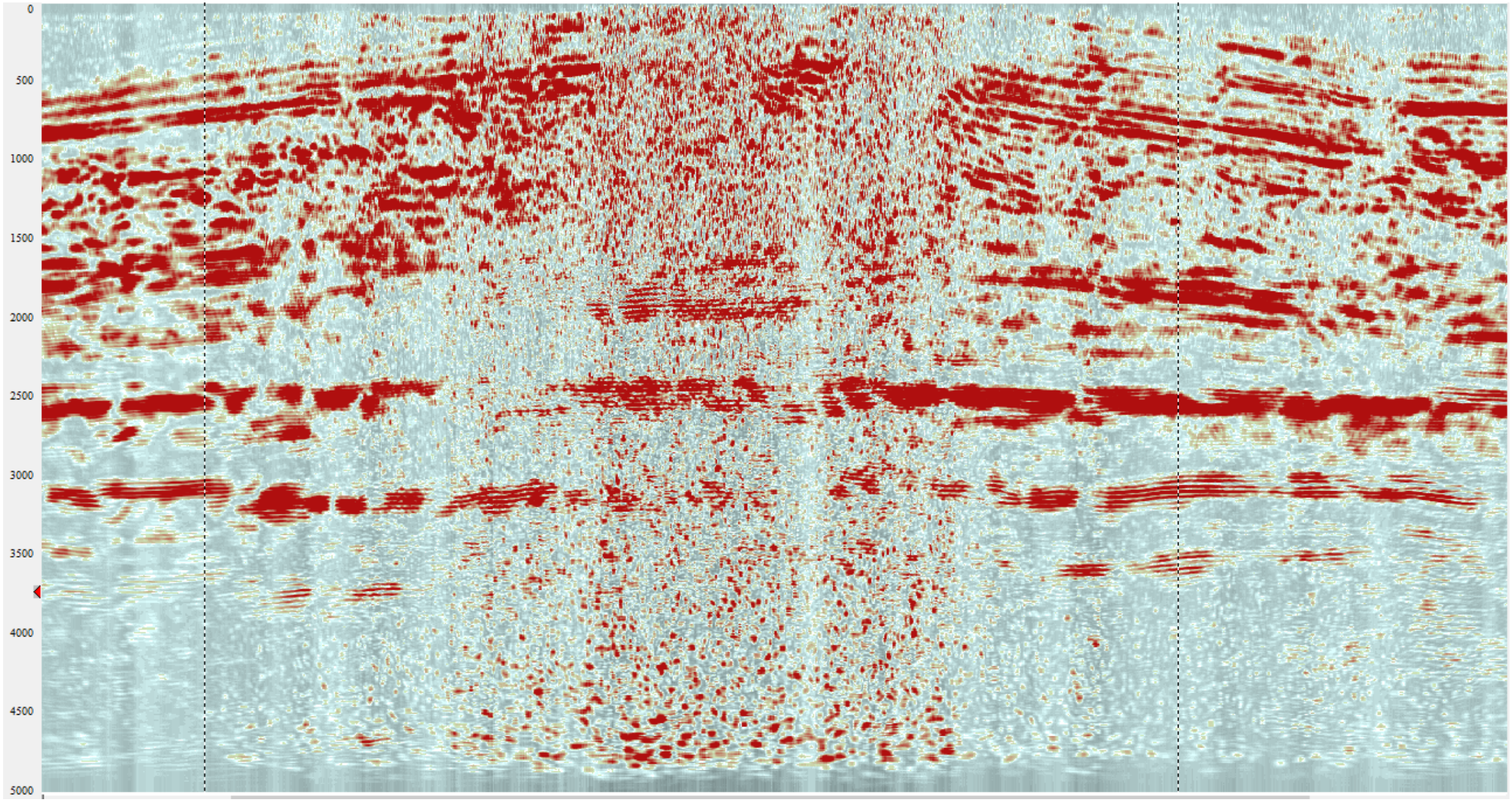
2D Volumes — Pre Stack Time Migration (PSTM) Filtered (Horizontal scale: 50 traces/inch, Vertical scale: 1.8 inches/second, Time 0 – 4.8 seconds)



2D Volumes — Pre Stack Time Migration (PSTM) Raw (Horizontal scale: 150 traces/inch, Vertical scale: 1.5 inches/second, Time 0 – 5 seconds)

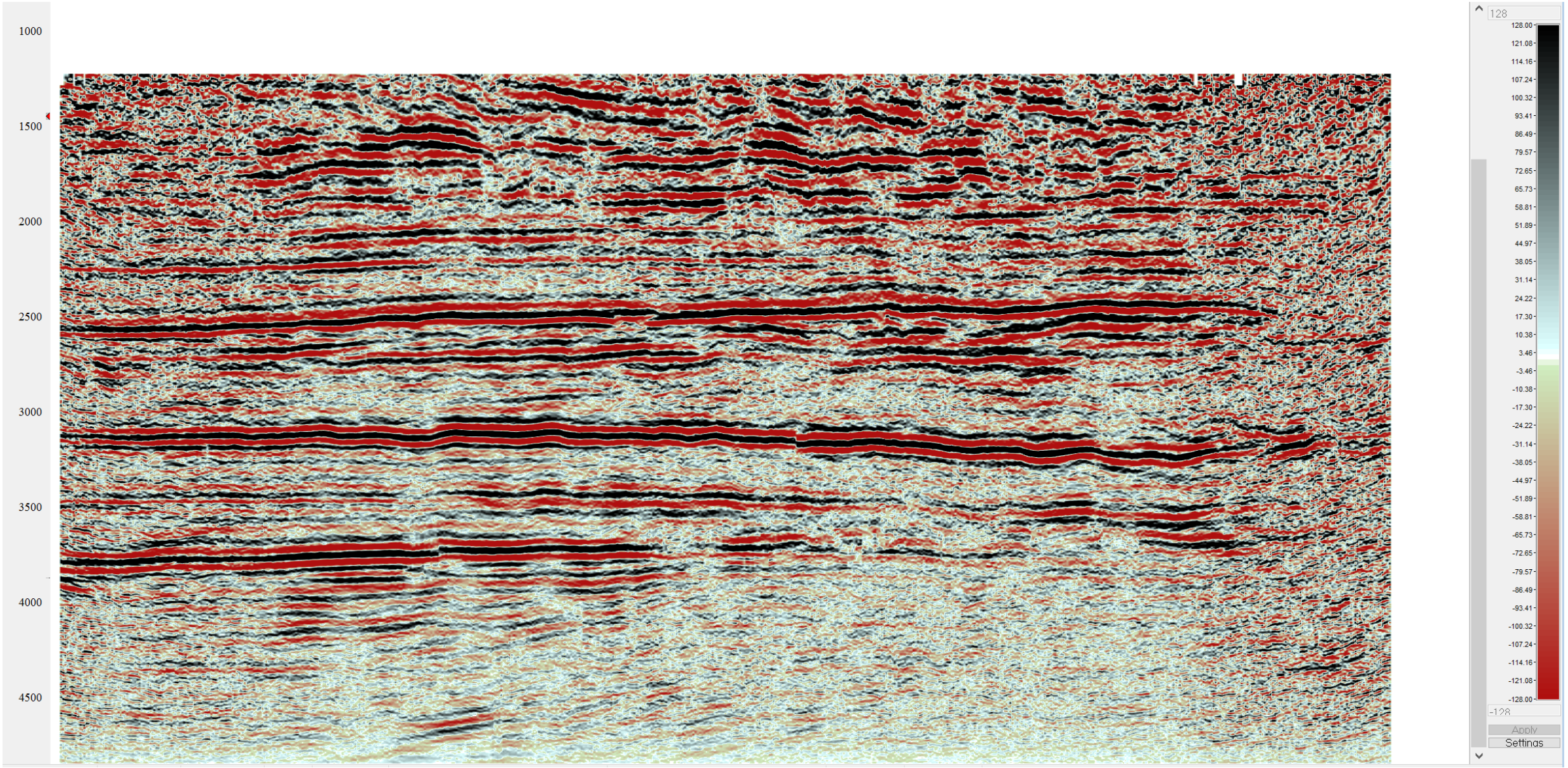


2D Volumes — Energy Absorption (Horizontal scale: 150 traces/inch, Vertical scale: 1.5 inches/second, Time 0 – 5 seconds)

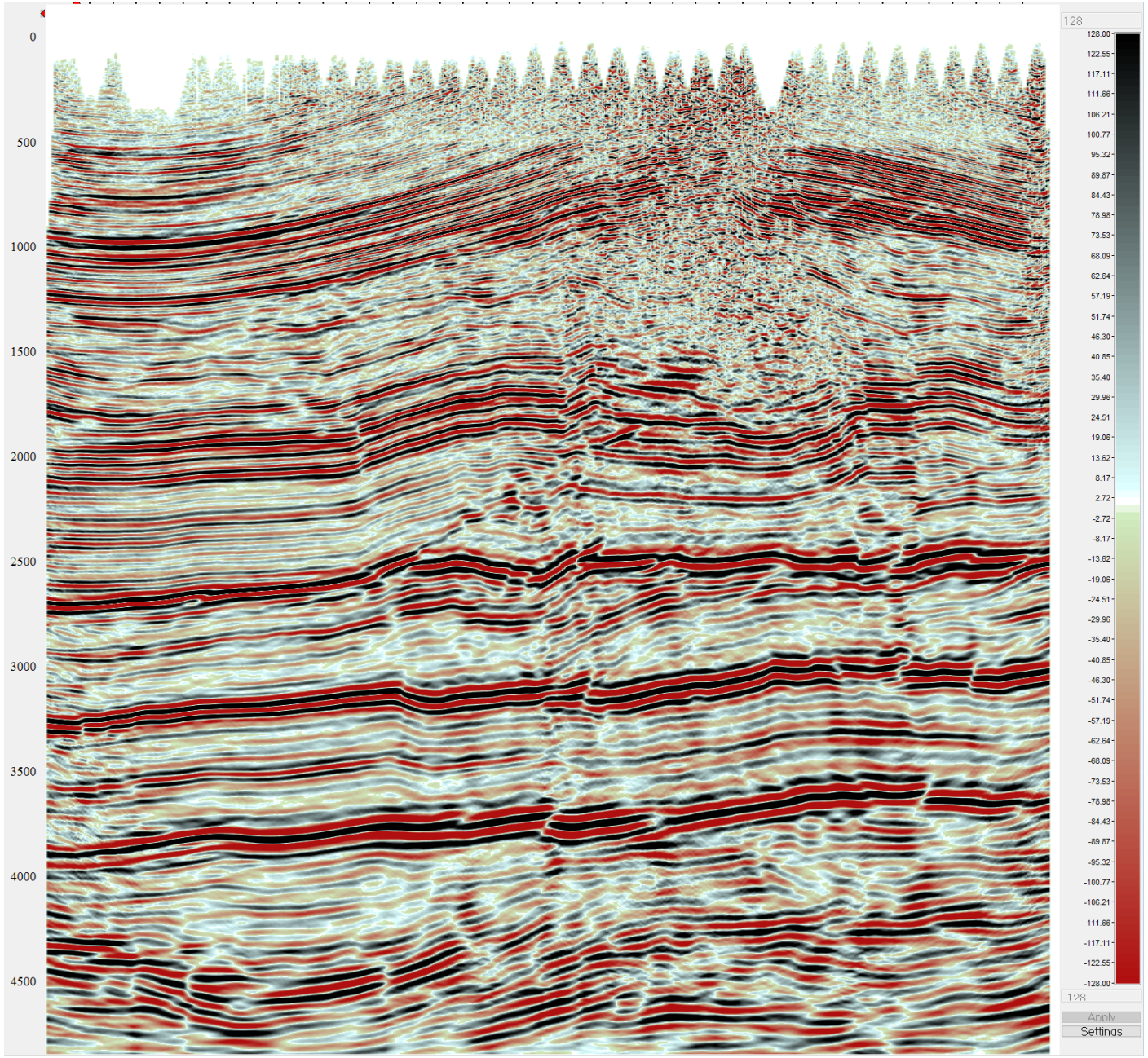


3D Volumes — Pre Stack Migration (PSTM) Filtered Angle Stack (Horizontal scale: 50 traces/inch, Vertical scale: 1.8 inches/second, time 0 – 5 seconds)

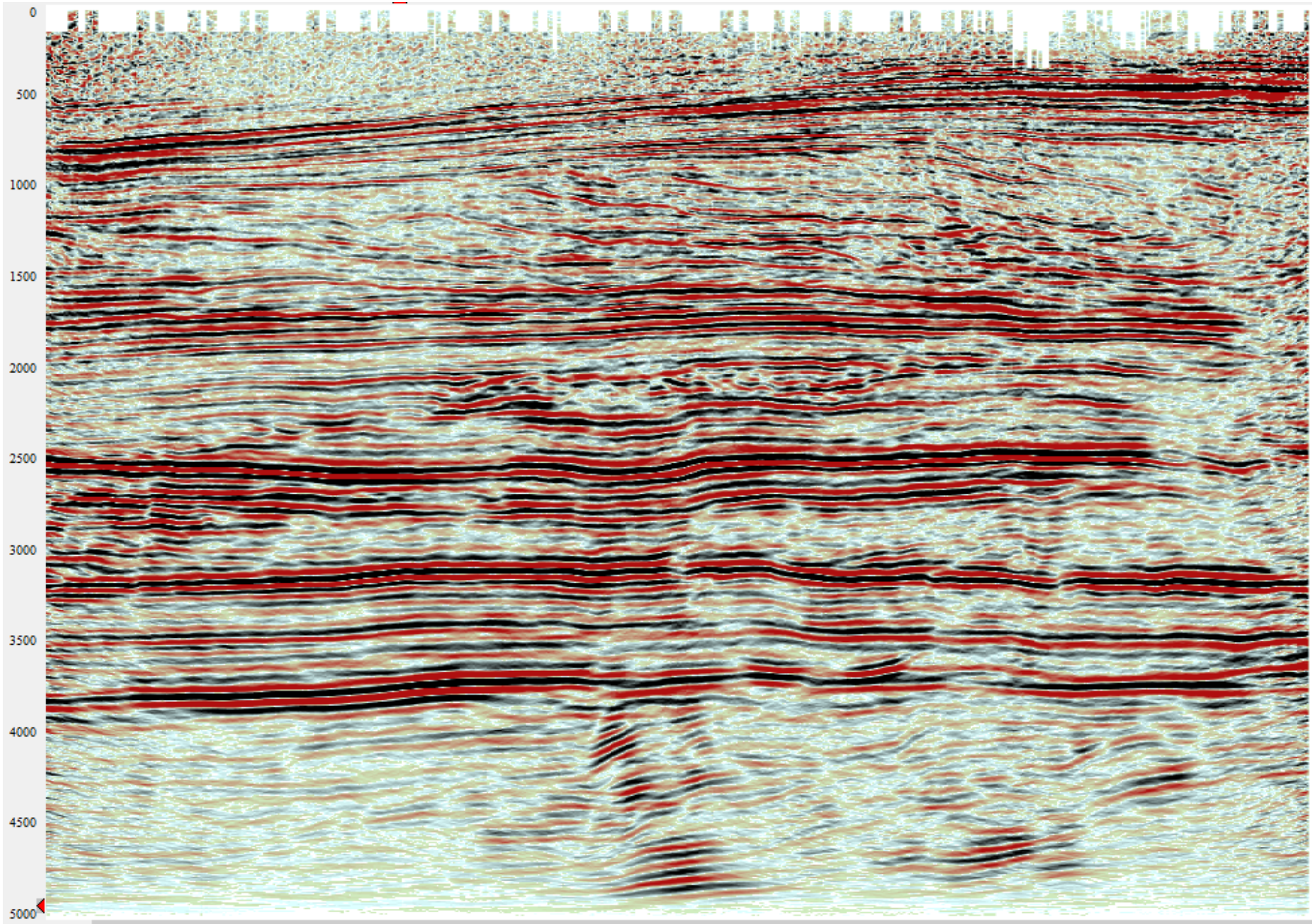
Note: Only one volume of three shown



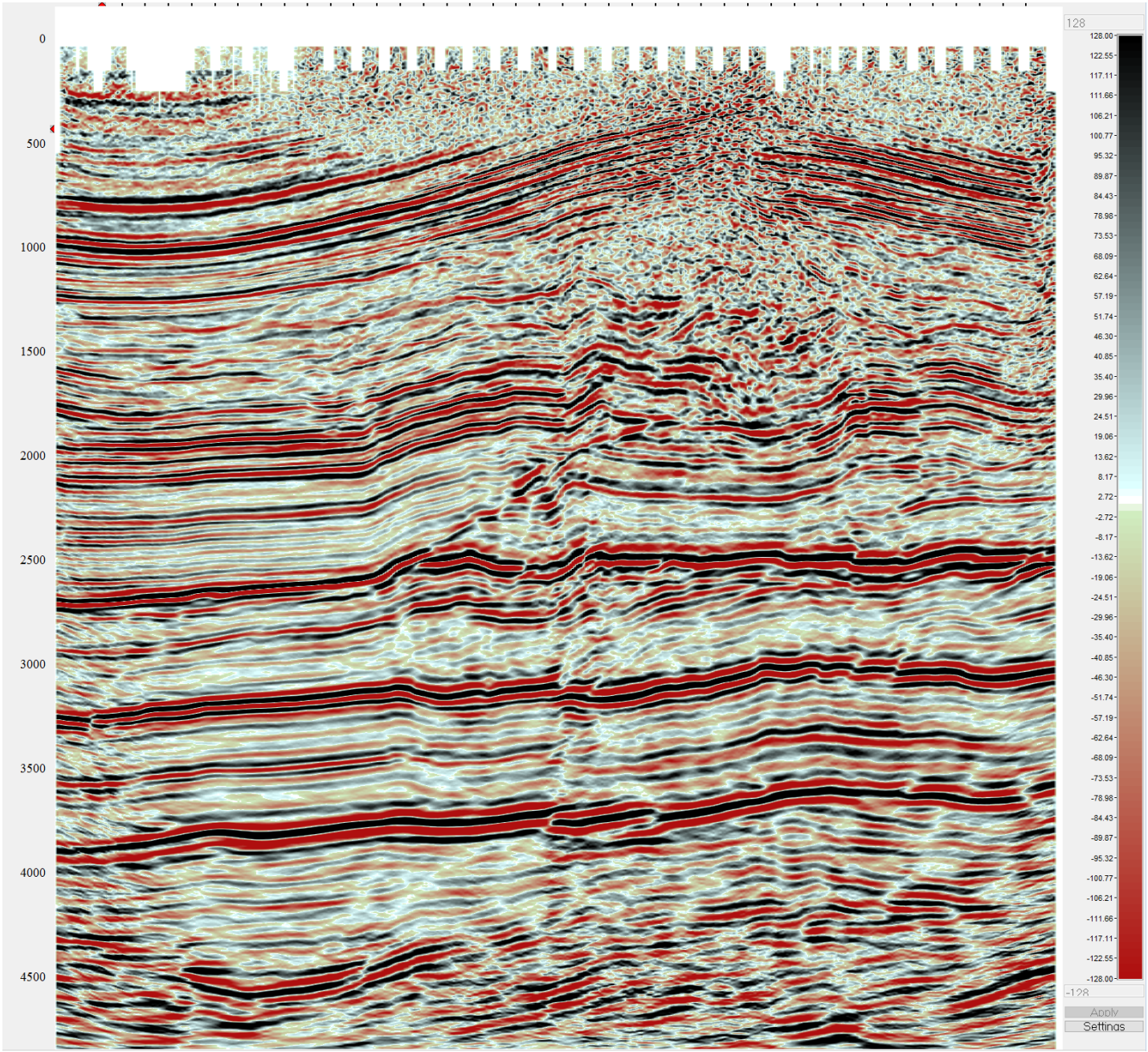
3D Volumes — Post Stack Time Migration (PoSTM) Full Stack (Horizontal scale: 50 traces/inch, Vertical scale: 1.8 inches/second, Time 0 – 5 seconds)



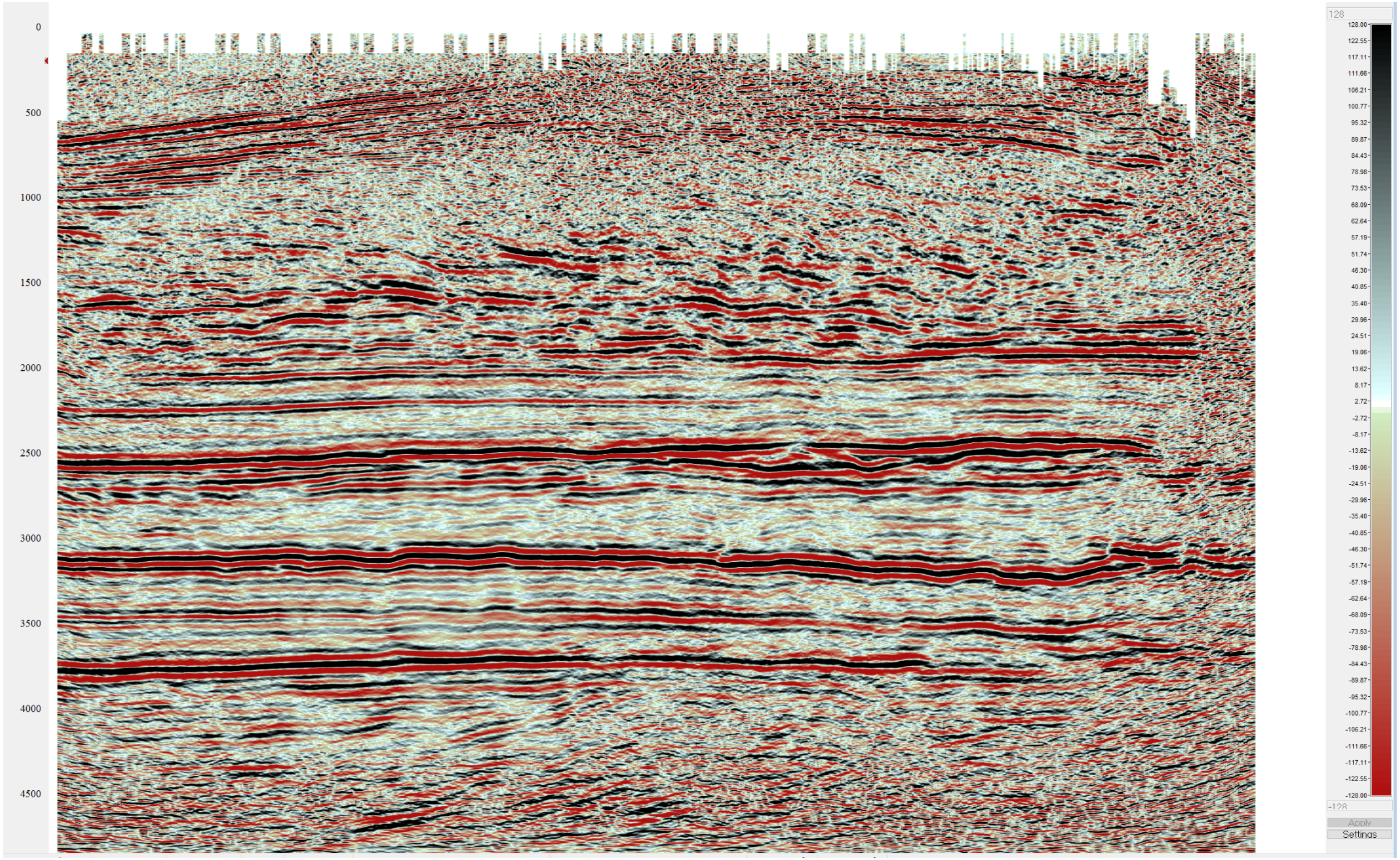
3D Volumes — Pre Stack Time Migration (PSTM) Relative Amplitude Raw (Horizontal scale: 50 traces/inch, Vertical scale: 1.5 inches/second, Time 0 – 5 seconds)



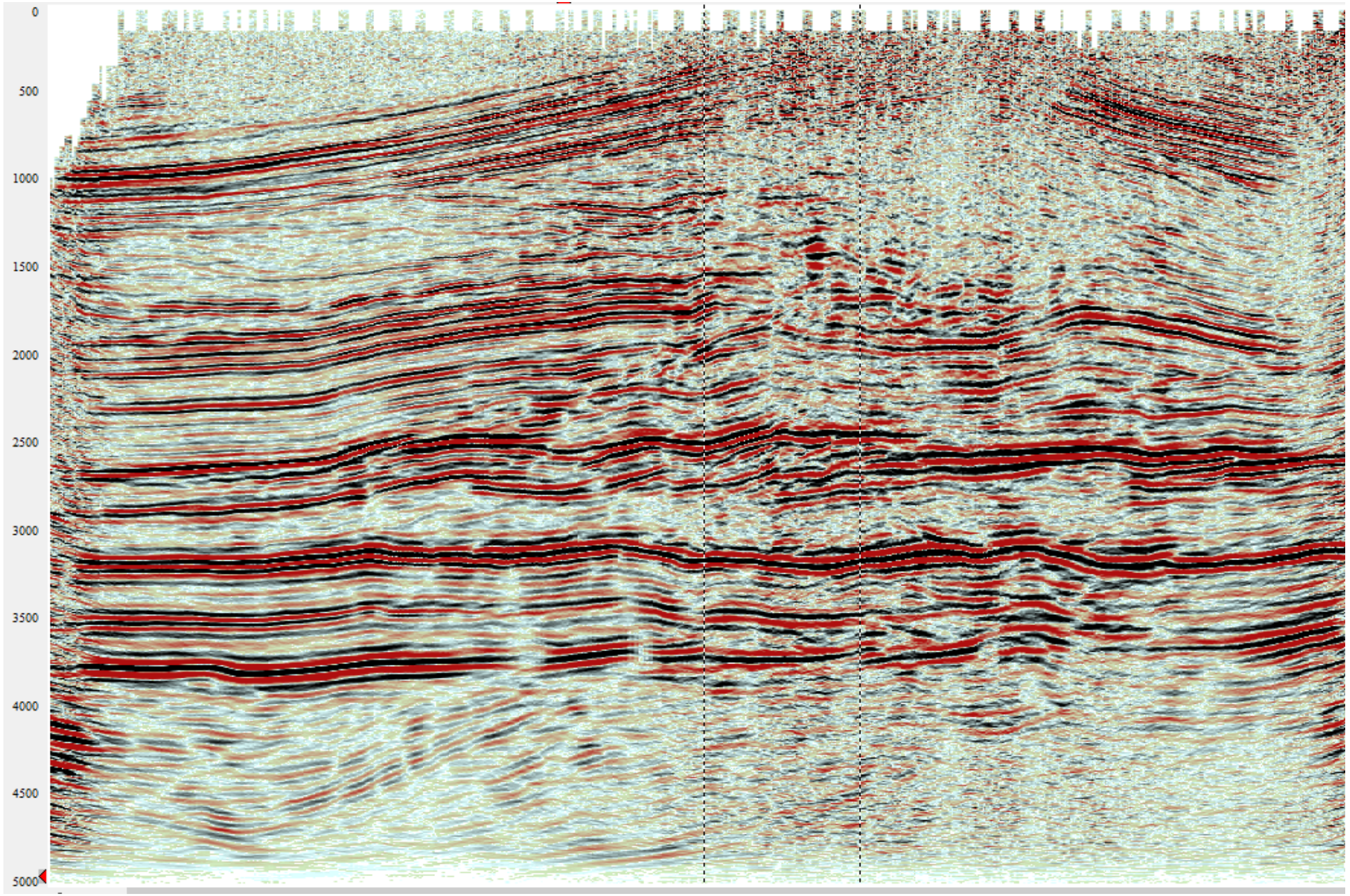
3D Volumes — Pre Stack Time Migration (PSTM) AGC 1000 Full Stack (Horizontal scale: 50 traces/inch, Vertical scale: 1.8 inches/second, Time 0 – 5 seconds)



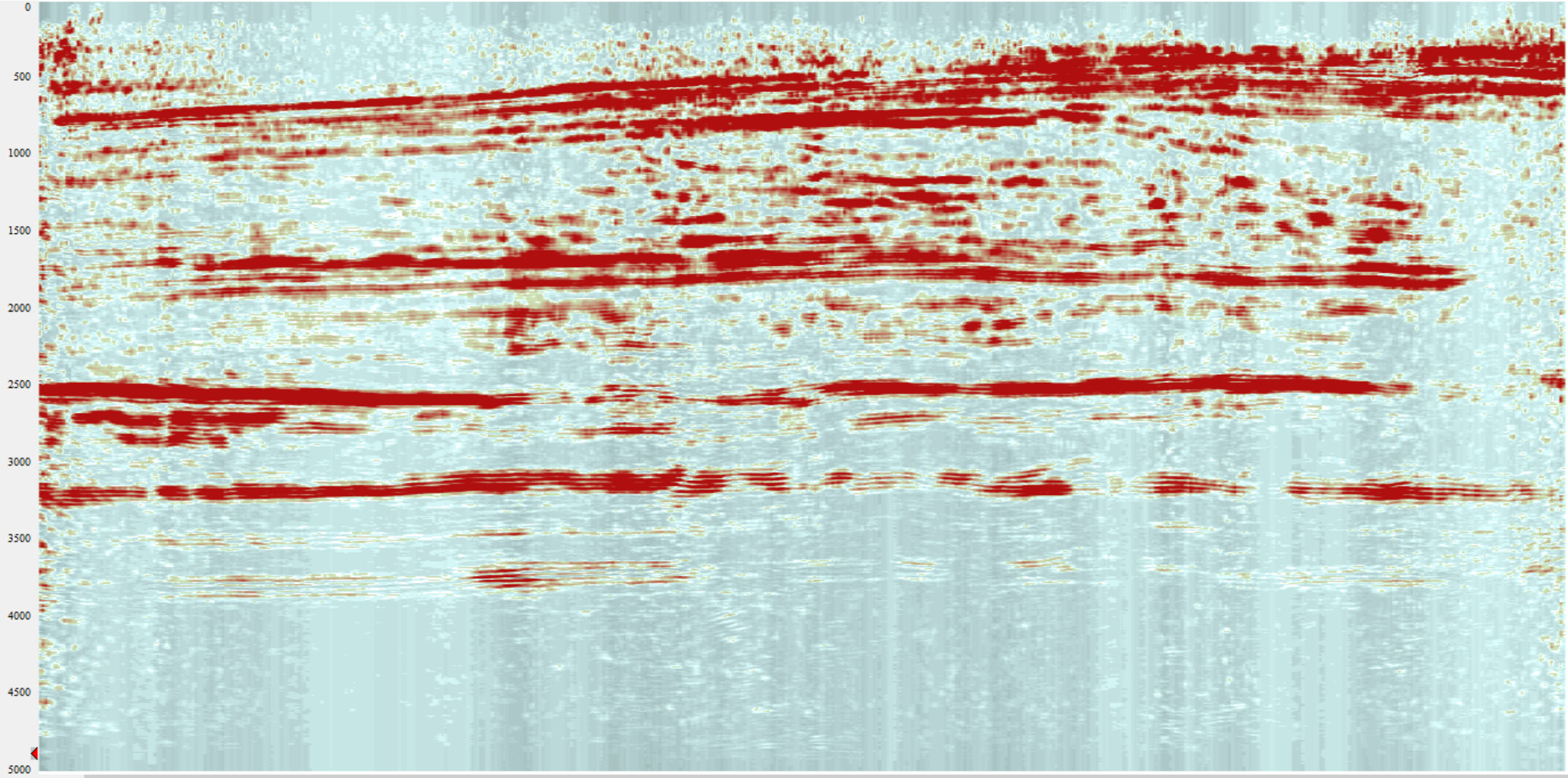
3D Volumes — Pre Stack Time Migration (PSTM) Spectral Balancing AGC (Horizontal scale: 50 traces/inch, Vertical scale: 1.8 inches/second, time 0 – 5 seconds)



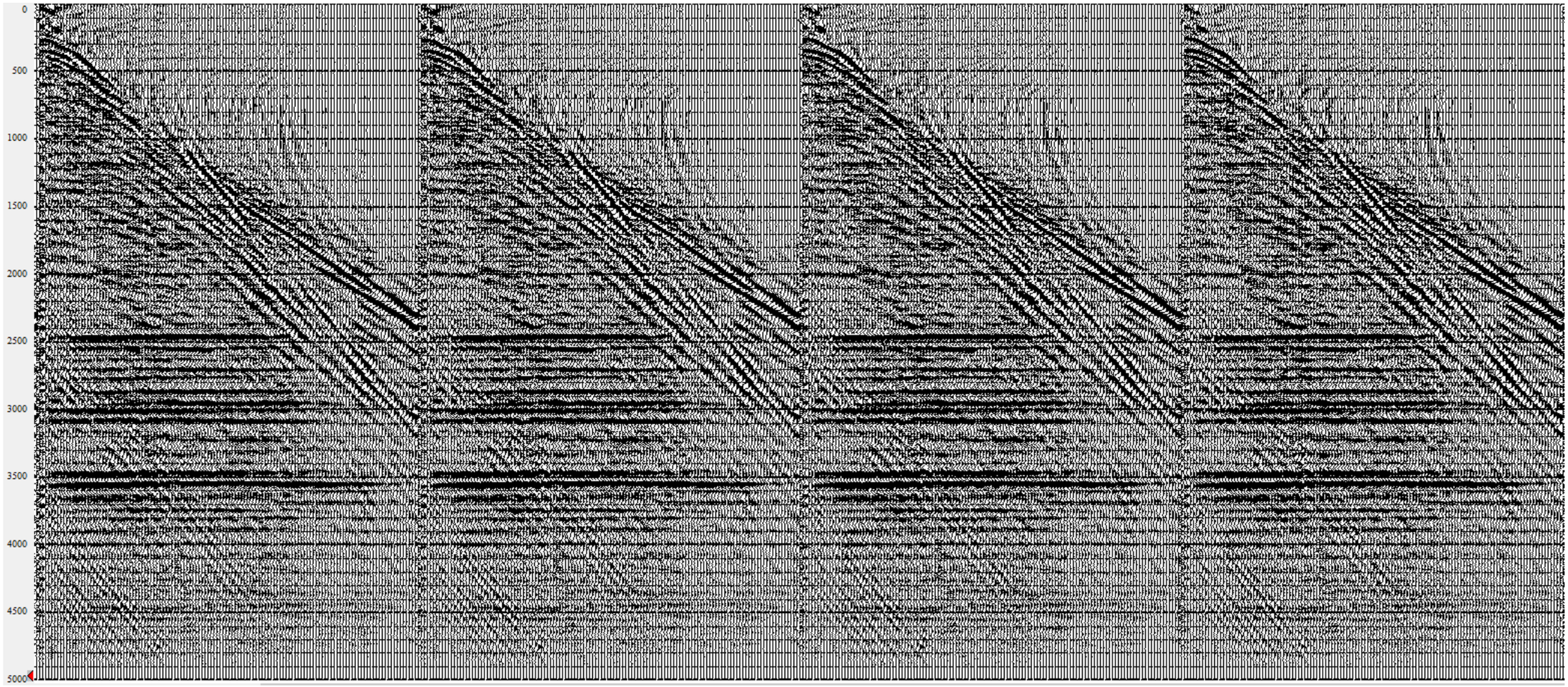
3D Volumes — Pre Stack Time Migration (PSTM) Spectral Balancing Raw (Horizontal scale: 50 traces/inch, Vertical scale: 1.5 inches/second, time 0 – 5 seconds)



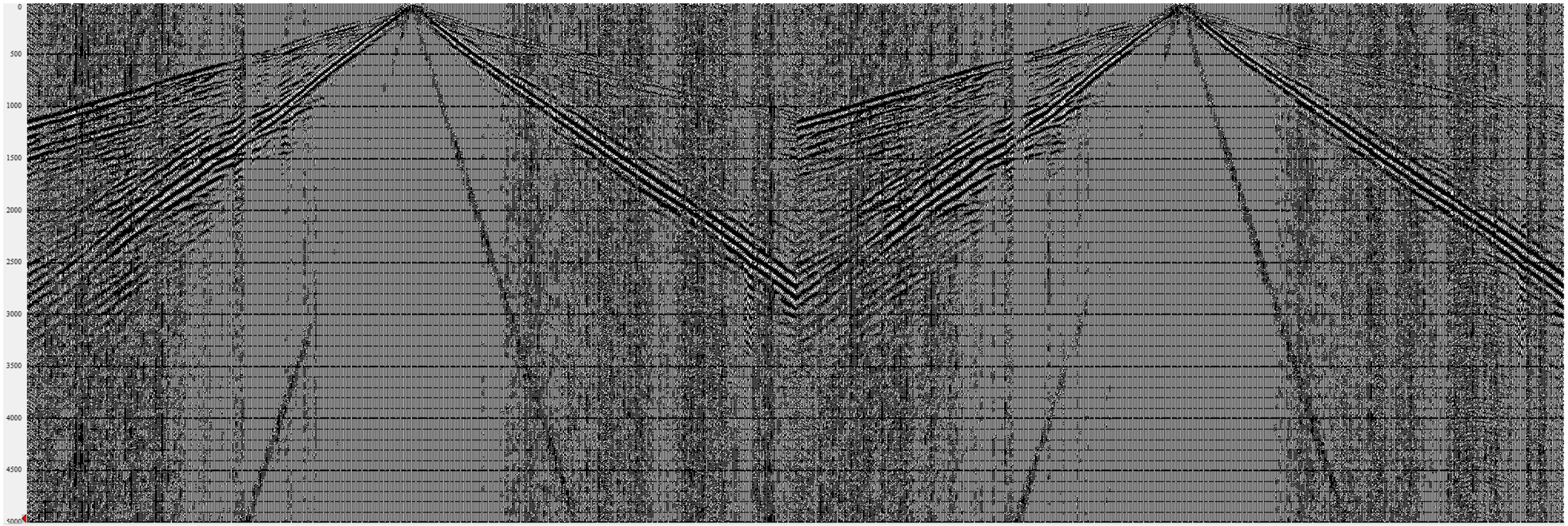
3D Volumes — Energy Absorption (Horizontal scale: 35 traces/inch, Vertical scale: 1.5 inches/second, time 0 – 5 seconds)



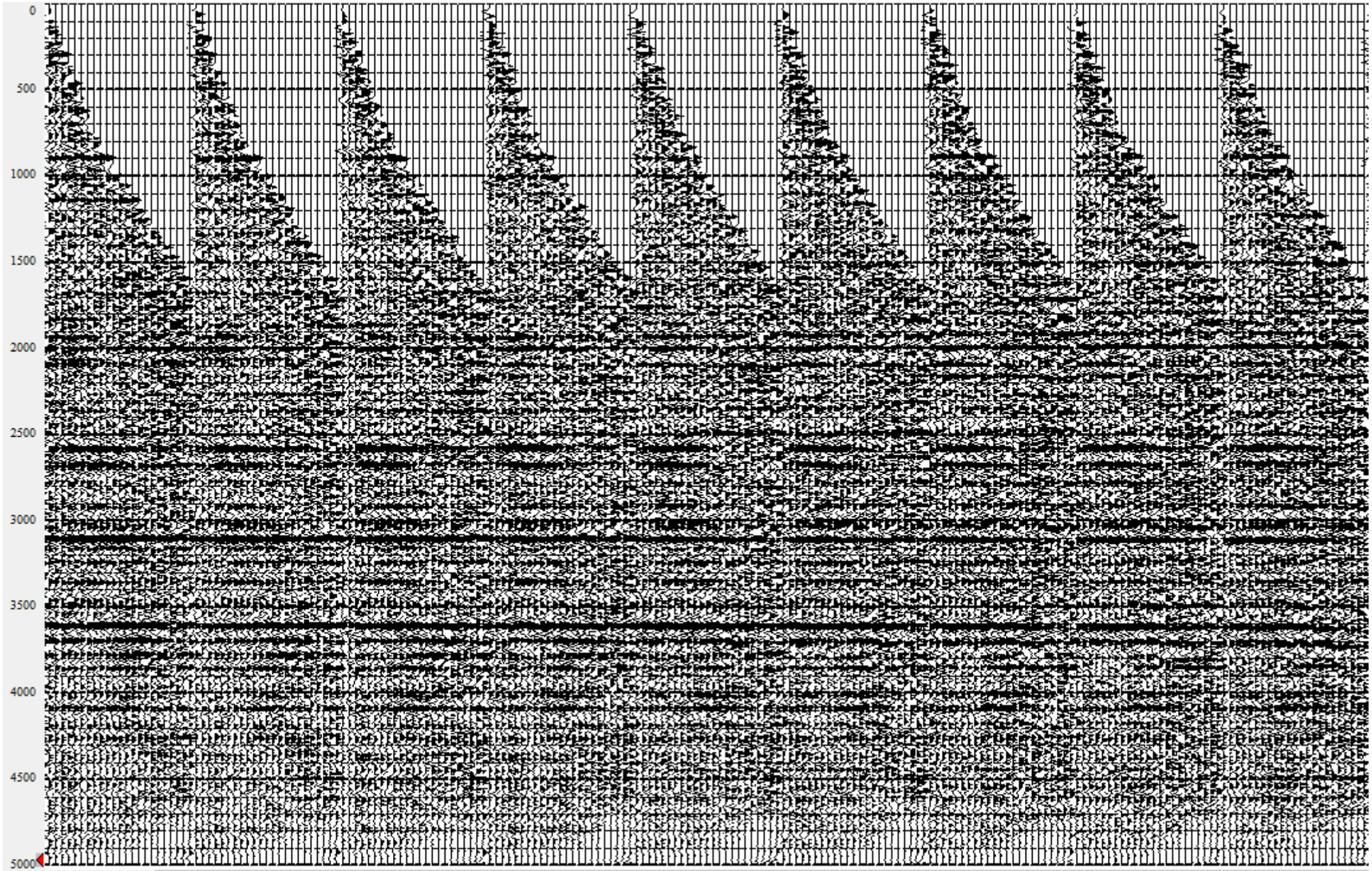
2D Volumes — Pre Stack Time Migration (PSTM) Gathers (Horizontal scale: 35 traces per inch, Vertical scale: 1.5 inches per second, Time 0 – 5 seconds)



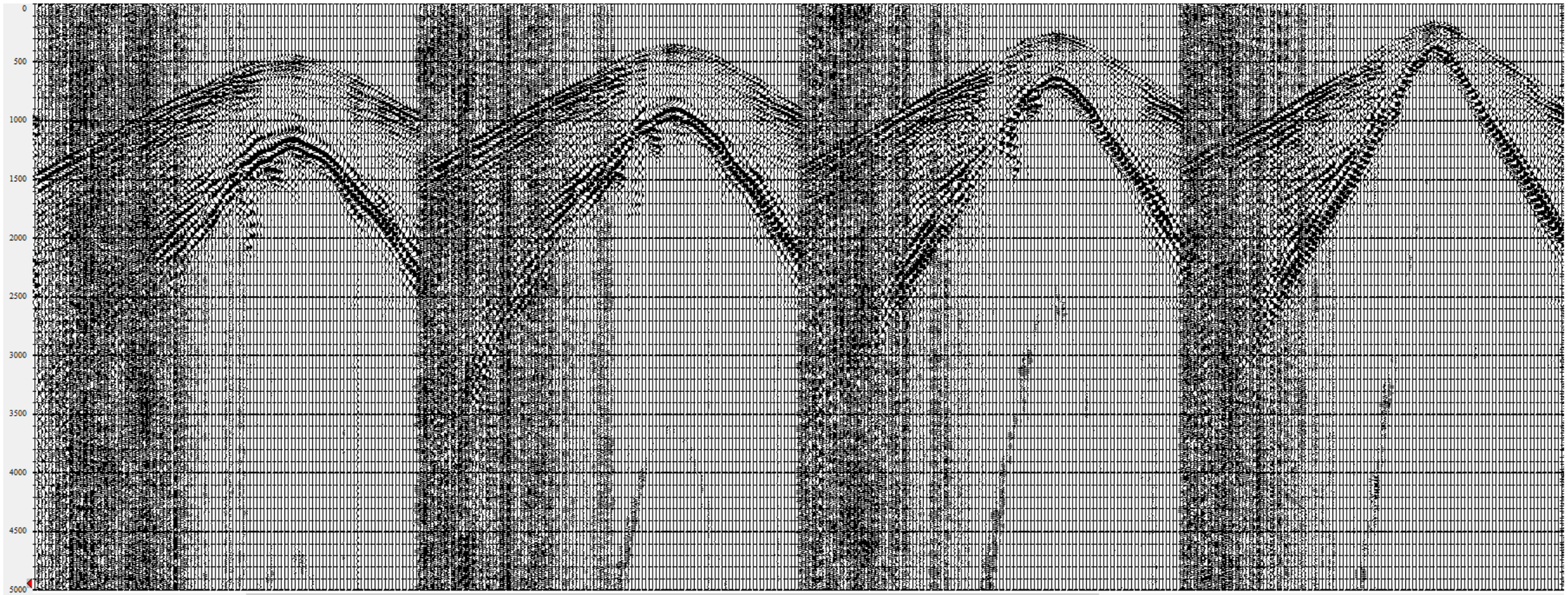
2D Volumes — Correlated Raw Field Files (Horizontal scale: 45.11 traces per inch, Vertical scale: 1.5 inches per second, Time 0 – 5 seconds)



3D Volumes — Pre Stack Time Migration (PSTM) Gathers (Horizontal scale: 18.04 traces per inch, Vertical scale: 1.5 inches per second, Time 0 – 5 seconds)



3D Volumes — Correlated Raw Field Data (Horizontal scale: 22.55 traces per inch, Vertical scale: 1.5 inches per second, Time 0 – 5 seconds)



RENAISSANCE ALASKA 2D

LINE GB-01

Processing Sequence

Processed by: Seismic Ventures, Inc.

September 23, 2008

1) Load data at 4 ms sample rate and 4.0 second records length

2) Geometry definition and assignment

3) Geometry and record quality control (shot edits)

4) Trace edits and spike removal

5) Elevation statics : Datum = 500 ft
Replacement Velocity = 6000'/sec.

6) Spherical divergence correction

7) Deconvolution: Surface Consistent / Spike
Operator length … 180ms.

8) Velocity analysis at 1/2 mile increments

9) Residual statics estimation and application

10) Velocity analysis at 1/2 mile increments

11) Residual statics estimation and application

12) Pre Stack Migration: KIRCHHOFF / time

13) Velocity analysis at 1/2 mile increments

14) Normal Move out

15) Top Mute

16) Stack

17) TVF
    3/6-56/68 HZ at 0.0-1.5 seconds
    5/10-48/62 HZ at 2.0-2.6 seconds
    4/8-38/42 HZ at 3.0-4.0 seconds

18) AGC 1000 ms

19) Noise Reduction: FX Decon

20) SEGY output

RENAISSANCE ALASKA 2D

LINE GB-02

Processing Sequence

Processed by: Seismic Ventures, Inc.

September 23, 2008

1) Load data at 4 ms sample rate and 4.0 second records length

2) Geometry definition and assignment

3) Geometry and record quality control (shot edits)

4) Trace edits and spike removal

5) Elevation statics : Datum = 500 ft
Replacement Velocity = 6000'/sec.

6) Spherical divergence correction

7) Deconvolution: Surface Consistent / Spike
Operator length … 180ms.

8) Velocity analysis at 1/2 mile increments

9) Residual statics estimation and application

10) Velocity analysis at 1/2 mile increments

11) Residual statics estimation and application

12) Pre Stack Migration: KIRCHHOFF / time

13) Velocity analysis at 1/2 mile increments

14) Normal Move out

15) Top Mute

16) Stack

17) TVF
    3/6-56/68 HZ at 0.0-1.5 seconds
    5/10-48/62 HZ at 2.0-2.6 seconds
    4/8-38/42 HZ at 3.0-4.0 seconds

18) AGC 1000 ms

19) Noise Reduction: FX Decon

20) SEGY output

RENAISSANCE ALASKA 2D

LINE REN-AL-01

Processing Sequence

Processed by: Seismic Ventures, Inc.

September 23, 2008

1) Load data at 4 ms sample rate and 4.0 second records length

2) Geometry definition and assignment

3) Geometry and record quality control (shot edits)

4) Trace edits and spike removal

5) Elevation statics : Datum = 500 ft
Replacement Velocity = 6000'/sec.

6) Spherical divergence correction

7) Deconvolution: Surface Consistent / Spike
Operator length … 180ms.

8) Velocity analysis at 1/2 mile increments

9) Residual statics estimation and application

10) Velocity analysis at 1/4 mile increments

11) Residual statics estimation and application

12) Pre Stack Migration: KIRCHHOFF / time

13) Velocity analysis at 1/4 mile increments

14) Normal Move out

15) Top Mute

16) Stack

17) TVF
    3/6-56/68 HZ at 0.0-1.5 seconds
    5/10-48/62 HZ at 2.0-2.6 seconds
    4/8-38/42 HZ at 3.0-4.0 seconds

18) AGC 1000 ms

19) Noise Reduction: FX Decon

20) SEGY output

RENAISSANCE ALASKA 2D

LINE REN-AL-02

Processing Sequence

Processed by: Seismic Ventures, Inc.

September 23, 2008

1) Load data at 4 ms sample rate and 4.0 second records length

2) Geometry definition and assignment

3) Geometry and record quality control (shot edits)

4) Trace edits and spike removal

5) Elevation statics : Datum = 500 ft
Replacement Velocity = 6000'/sec.

6) Spherical divergence correction

7) Deconvolution: Surface Consistent / Spike
Operator length … 180ms.

8) Velocity analysis at 1/2 mile increments

9) Residual statics estimation and application

10) Velocity analysis at 1/4 mile increments

11) Residual statics estimation and application

12) Pre Stack Migration: KIRCHHOFF / time

13) Velocity analysis at 1/4 mile increments

14) Normal Move out

15) Top Mute

16) Stack

17) TVF
    3/6-56/68 HZ at 0.0-1.5 seconds
    5/10-48/62 HZ at 2.0-2.6 seconds
    4/8-38/42 HZ at 3.0-4.0 seconds

18) AGC 1000 ms

19) Noise Reduction: FX Decon

20) SEGY output

RENAISSANCE ALASKA 2D

LINE U8-78-5

Processing Sequence

Processed by: Seismic Ventures, Inc.

September 23, 2008

1) Load data at 4 ms sample rate and 4.0 second records length

2) Geometry definition and assignment

3) Geometry and record quality control (shot edits)

4) Trace edits and spike removal

5) Elevation statics : Datum = Sea Level
Replacement Velocity = 6000'/sec.

6) Spherical divergence correction

7) Deconvolution: Surface Consistent / Spike
Operator length … 180ms.

8) Velocity analysis at 1 mile increments

9) Residual statics estimation and application

10) Velocity analysis at 1/2 mile increments

11) Residual statics estimation and application

12) Pre Stack Migration: KIRCHHOFF / time

13) Velocity analysis at 1/3 mile increments

14) Normal Move out

15) Top Mute

16) Stack

17) TVF
    6/12-56/68 HZ at 0.0-1.5 seconds
    5/10-48/62 HZ at 2.0-2.6 seconds
    4/8-38/42 HZ at 3.0-4.0 seconds

18) AGC 1000 ms
19) Noise Reduction: FX Decon

20) SEGY output

RENAISSANCE ALASKA UMIAT 3D

Processing Sequence

Processed by: Seismic Ventures, Inc.

August 11, 2008

1) Load data at 4 ms sample rate and 5.0 second records length

2) Geometry definition and assignment on 110' x 110' bins

3) Geometry and record quality control using offset sorted records, shot stacks, and receiver stacks

4) Trace edits and spike removal

5) Refraction statics : Datum = 900'
V0 = 8000'/sec.
Replacement Velocity = 11000'/sec.

6) Initial velocity analysis at 2 x 2 mile grid

7) Spherical divergence correction

8) Brute stack

Deconvolution testing was performed as follows:

Single trace spiking deconvolution with a 120 ms operator
Single trace spiking deconvolution with a 180 ms operator
Single trace spiking deconvolution with a 240 ms operator
Single trace gap deconvolution with a 12 ms gap and 180 ms operator
Surface consistent deconvolution with a 180 ms operator
Surface consistent deconvolution with a 180 ms operator + tvsw (5-90 Hz)

After close examination of the results of testing we chose surface consistent deconvolution with Depulse filer, for minimum phase correction, and time variant spectral whitening for the production run .

9) Surface Consistent Deconvolution - shot and receiver terms
180 ms operator
Gate: 400 ms – 3800 ms at 330 feet offset
2000 ms – 4400 ms at 8580 feet offset

10) Time variant spectral whitening: 5-90 Hz, 500 ms operator, 7 frequency panels

11) Top mute testing and selection

12) Deconvolution velocity analysis at 1 x 1 mile grid

13) Deconvolution stack

14) First pass of residual statics

15) Velocity analysis at 1 x 1 mile grid

16) Residual statics pass 1 stack

17) Velocity analysis at 1 x 1 mile grid

18) Second pass of residual statics

19) Velocity analysis at 1 x 1 mile grid

20) Residual statics pass 2 stack

21) FXY Deconvolution

22) Phaseshift Migration

23) TVF
6/12-56/68 HZ at 0.0 seconds
5/10-48/62 HZ at 2.5 seconds
4/8-38/48 HZ at 6.0 seconds

24) AGC 1000 ms

25) SEGY output of post stack migration to Renaissance Alaska

Pre-Stack Time Migration Sequence:

26) Loading of deconvolved static corrected data into the Seismic Ventures Proprietary Migration format

27) PreStack Time Migration into Velocity Analysis bins

28) PreStack Time Migration Velocity Analysis

29) Final review of the PreStack Migration Velocity Field

30) Review of all PreStack Migrated output bins

31) Final Stack of the PreStack Migrated bins

32) Output of a Final Raw PreStack Time Migration to Tape

33) Output of Final Filtered Prestack Time Migration to Tape

Alaska State Plane Zone 4 Projection – NAD 27

umiat_pstm_agc.sgy SEG Y Text Header (EBCDIC)

```
C 1 RENAISSANCE ALASKA, LLC
C 2
C 3 UMIAT 3D
C 4
C 5 NORTH SLOPE ALASKA
C 6
C 7 SAMPLE RATE 4 MS     DATA LENGTH 5.0 SEC
C 8
C 9 PRE STACK MIGRATION (RELATIVE AMPLITUDE)
C10
C11 PROCESSED BY:  SEISMIC VENTURES, INC.
C12
C13 ILINE    XLINE    CDPX       CDPY
C14 1        1       177418.59   5601667.50  LOWER LEFT
C15 1        435      179084.69   5649378.50  LOWER RIGHT
C16 671      1        251073.70   5599095.50  UPPER LEFT
C17 671      435      252739.80   5646806.50  UPPER RIGH
C18
C19 INLINE INTERVAL   110'
C20 CROSSLINE INTERVAL 110'
C21
C22 INLINE         BYTES  181-184 I
C23 XLINE          BYTES  185-188 I
C24
C25
C26
C27 JULY 16,2008
C28
C29
C30
C31
C32
C33
C34
C35
C36
C37
C38
C39
C40 END EBCDIC
```

The polarity convention (Target display polarity) followed in this dataset is the same as that used to record the data in the field.