Flex Trend WAZ 3D
Gulf of Mexico
365.17 blocks (5,000 acre); Lightning Reimaging = 261.55 blocks
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Gulf of Mexico
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Acquisition Parameters (Linear 4x2 Wide Azimuth—WAZ)
- Recording Template: 8Km streamer multi-vessel / multi-pass; E-W
- Receiver Geometry: 12.5m stations @ 120m lines
- Source Geometry: 37.5m alternating stations @ 660m lines
- Energy Source Type: Up to four airgun arrays
- Energy Source Details: 8,475in³ @ 10m depth
- Recording Instruments: Up to 2x10 Q-Marine streamers @ 12m depth
- Nominal Far Offset: 8,000m
- Nominal Fold: 400
- Acquisition Bin Size: 6.25x60 m (25x30 m processed)
- Record Length: 14sec @ 2ms (60,000ft @ 32/16ft processed)
- Acquisition Period: Sep 2013 – Jan 2014

Contractor: WesternGeco

Processing Sequence (WesternGeco 2016)

Signal Processing 2014
1. Receiver motion compensation
2. Navigation merge & Digital group form to 12.5m
3. Controlled marine source designature
4. DeNoise
5. Integrate legacy NAZ over obstructed subsets
6. Water velocity corrections
7. General Surface Multiple Prediction (GSMP) & General Deterministic Water-layer Demultiple (GDWD)
8. Residual DeNoise
9. Regularization & interpolation

Tilted Transverse Isotropy (TTI) Modeling & Imaging
10. Multi-azimuth tomography
11. Multi iteration salt body interpretation
12. Rock physics sub-salt trend modeling via 18 wells >15Kft
13. Sub-salt multi-azimuth tomography
15. Final Kirchhoff Depth Migration (KDM): 70Hz Anisotropic TTI w/ 47 offsets @ 615ft
16. Final scaling and signal enhancement

Lightning Reimaging Technical Enhancements (Schlumberger 2020)
A. Integration of legacy NAZ over entire area
B. Broadband signal preservation via:
   a. 3D Adaptive Noise attenuation
   b. 3D Adaptive Deghosting
C. Enhanced DeMultiple via 3D GDWD & 3D GSMP
D. Velocity Model refinement via:
   a. Refraction Full Waveform Inversion (FWI)
   b. Multi-azimuth tomography
   c. Rock physics sub-salt trend modeling
   d. Multi iteration salt body interpretation refinement w/ targeted refinement
   e. Reflection FWI
   f. Through salt tomography
E. Final RTM: 35Hz Anisotropic TTI w/ 49 Vector Imaged Partitions (VIPS)
F. Final KDM: 90Hz Anisotropic TTI w/ 47 offsets @ 615ft
G. Dip Guided Converted Wave Attenuation (CWA)
H. Dip Guided Selective Stack (DGSS)

Available Products (2016)
A. PrSDM Stacks
   a. RTM Raw & Enhanced
   b. KDM Raw & Enhanced
   c. KDM Angles; 0-12°, 12-24°, 24-36° & 36-48°
B. Final TTI velocity model (Vp, Delta (∆), Epsilon (ε), Dip (θ) & Azimuth (ϕ) fields)
C. Final horizons; water bottom and Top & Base salt
D. KDM gatherings
E. NavMerge Field Shots

Available Products (2020)
A. PrSDM Stacks
   a. RTM Raw, Mild & Enhanced
   b. KDM Raw & Enhanced
   c. KDM Angles; 0-12°, 12-24°, 24-36° & 36-48°
B. Final TTI velocity model (Vp, Delta (∆), Epsilon (ε), Dip (θ) & Azimuth (ϕ) fields)
C. Final horizons; water bottom and Top & Base salt
D. KDM gatherings
E. RTM Vector Imaged Partition (VIP) tiles

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