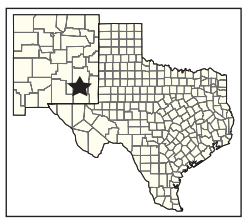

Multiclient

Northern Delaware Basin

Permian Basin Land 3D / Southeast New Mexico

Key Highlights

Kirchhoff prestack time migration available on New Mexico EMerge 1

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For more information,
call +1 713 689 1000, e-mail nammc@slb.com, or visit www.slb.com/multiclient.

Northern Delaware Basin

Acquisition Parameters	
Buffalo Valley	
Recording system	I/O System II, RSR
Energy source	Vibroseis
Recording geometry	6 lines × 108 channels / lines, three component phones
Source lines	220 ft interval: 880 ft apart, SW/NE
Receiver lines	220 ft interval: 660 ft apart, E/W
Nominal fold	40 (CMP) / 46 (CCP)
Cell size	110 × 110 ft
Average far offset	11,962 ft
Survey completed	2000
Central Eddy I	
Recording system	1,056 channel distributive system
Energy source	Vibroseis / Pelton II Advance Vibrator Electronics
Spread geometry	8 lines × 132 channels
Sweep frequency	8–106 Hz: 3dB/octave
Sweep length	8 s
Receiver lines	220 ft intervals: 1,100 ft apart, NE/SW
Source lines	220 ft intervals: 1,320 ft apart, NW/SE
Nominal fold	44
Cell size	110 × 110 ft
Survey completed	1999
Oak Lake I	
Energy source	HFVS Vibroseis
Spread geometry	8 lines × 119 channels
Receiver lines	220 ft interval: 1,760 ft spacing
Source lines	110 ft interval: 1,100 ft spacing
Nominal fold	40
Cell size	110 × 55 ft
Record length	4 s
Sample rate	2 ms
Survey completed	1999
Oak Lake II	
Energy source	HFVS Vibroseis
Spread geometry	12 lines × 75 channels
Receiver lines	220 ft interval: 2,200 ft spacing
Source lines	210 ft interval: 1,100 ft spacing
Nominal fold	40
Cell size	110 × 110 ft
Record length	4 s
Sample rate	2 ms
Survey completed	1999
Dawson Sand Tank	
Energy source	Vibroseis
Spread geometry	7 lines × 120 channels
Receiver lines	220 ft intervals: 1,320 ft spacing
Source lines	220 ft intervals: 1,540 ft spacing
Nominal fold	35
Cell size	110 × 110 ft
Record length	4 s
Sample rate	2 ms
Survey completed	1999
Geco Sand Tank	
Energy source	Vibroseis
Spread geometry	12 lines × 96 channels
Receiver lines	220 ft intervals: 1,320 ft spacing
Source lines	220 ft intervals: 1,320 ft spacing
Nominal fold	48
Cell size	110 × 110 ft
Record length	4 s
Sample rate	2 ms
Survey completed	n/a
Cedar Lake	
Energy source	Vibroseis
Spread geometry	10 lines × 70 channels
Receiver lines	220 ft intervals: 1,320 ft spacing
Source lines	220 ft intervals: 1,540 ft spacing
Nominal fold	35
Cell size	110 × 110 ft
Record length	4 s
Sample rate	2 ms
Survey completed	n/a

Acquisition Parameters	
Eddy Lea I / III	
Recording System	1,152 channel distributive system
Energy source	Vibroseis / Pelton II Advance Vibrator Electronics
Spread geometry	8 lines × 144 channels
Sweep frequency	8-100 Hz: 3dB/octave
Sweep length	12 s
Receiver lines	220 ft intervals: 1,100 ft apart: E/W
Source lines	220 ft intervals: 1,320 ft apart: N/S
Nominal fold	48
Cell size	110 × 110 ft
Survey completed	1999
Maljamar I, II, & III	
Energy source	Vibroseis
Spread geometry	8 lines × 120 channels
Receiver lines	220 ft intervals: 1,100 ft apart: E/W
Source lines	220 ft intervals: 1,320 ft apart: N/S
Nominal fold	40
Cell size	110 × 110 ft
Record length	4 s
Sample rate	2 ms
Survey completed	Phase I–1995 Phase II–1997 Phase III–1999
New Mexico Emerge 1	
Multiclient input surveys:	
Oak Lake I & II	
Maljamar I, II, & III	
Dawson Sand Tank	
Geco Sand Tank	
Cedar Lake	

Processing Flows
Buffalo Valley – Compressional Wave
Data initialization
Amplitude recovery
Surface consistent wavelength deconvolution
Spectral whitening
Offset relative amplitude compensation
3D refraction statics
Velocity analysis
3D surface consistent residual statics (2 iterations)
EQ dip moveout (DMO) and stack
Spectral whitening
Random noise attenuation
3D full field extended Stolt migration (one pass)
Final cell size: 110 × 110 ft
Buffalo Valley – Converted Wave
Data initialization
Horizontal geophone rotation
Amplitude recovery
Surface consistent wavelength deconvolution
Spectral whitening
Offset relative amplitude compensation
3D refraction statics
Velocity analysis
Long period detector statics
3D surface consistent residual statics (2 iterations)
Velocity analysis
Stack
Random noise attenuation
F-K dip filter
3D full field extended Stolt migration (one pass)
PS or PP time correction
Central Eddy I
Data initialization
Amplitude recovery
Offset relative amplitude compensation
Surface consistent wavelet deconvolution
Spectral whitening
3D refraction statics
Velocity analysis
3D surface consistent residual statics (2 iterations)
Trim
Progressive stack DMO
Spectral whitening
Random noise attenuation
3D migration
Spectral whitening (optional)
Band pass filter and gain
Final cell size: 110 × 110 ft

Processing Flows
Oak Lake I, Oak lake II, & Sand Tank
Geometry merge
Vibroseis minimum phase correction
Spherical divergence and exponential gain correction
Refraction statics
Surface consistent spiking deconvolution
Predictive deconvolution
First pass velocity analysis (3,520 ft grid)
Surface consistent residual statics
DMO velocity analysis (1,760 ft grid)
Final DMO corrected stack
Noise attenuation (FXY deconvolution)
3D migration
3D coherency filtering
Time variant bandpass filter
Trace amplitude balancing
Eddy Lea I / III (High Resolution Flow Sequence)
Data initialization
Refraction statics
Signal processing: Geometric spread compensation Minimum equivalent filter Surface consistent deconvolution Zero phase deconvolution
Velocity analysis
3D surface consistent residual statics (2 iterations)
Surface consistent noise attenuation, zone anomoly process (ZAP)
Surface consistent amplitude compensation (SCAC)
Residual amplitude compensation (RAAC)
Progressive stack DMO
Random noise attenuation (RNA, FXY deconvolution)
3D migration
Q compensation (optional)
Time variant filter
Kirchhoff 3D EQ DMO to common offset / common grid
Velocity analysis (0.5 mile grid)
DMO stack
Band pass filter and gain
New Mexico EMerge 1
2 ms processing sample rate
Data initialization and geometry / navigation merge
Amplitude recovery / trace editing
Survey match
Anomalous amplitude attenuation (AAA)
Coherent noise attenuation
Refraction statics solution (Tau-P tomography)
Preliminary velocity analysis (2 mile grid)
Survey phase match and merge
Surface consistent deconvolution
Model based wavelet processing
AAA
Surface consistent amplitude compensation
3D residual statics: 3 passes
Velocity analysis (0.5 mile grid)
Residual noise attenuation
Binning / offset regularization
(KPSTM) Kirchhoff prestack time migration (1 mile grid)
Full isotropic, ray traced KPSTM
Residual velocity analysis (0.5 mile grid)
Final normal moveout (NMO) / mute / stack for full fold volume
Spatial residual amplitude compensation
Time variant filter
3D KxKy filter
Monk whitening
Tau-P coherency enhancement
Processing completed: January 2009

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