

**2010/11 Evans Geophysical, Inc.
West Virginia Pennsylvania Group Shoot**

Line Number	Approximate Mileage*
EG-2010-WVPA-1	93.96 miles (n-s line)
EG-2010-WVPA-2	51.79 miles n.green-marshall
EG-2010-WVPA-3	62.22 miles (s.green-marshall)
EG-2010-WVPA-4	61.66 miles (monongailia-wetzel)
EG-2010-WVPA-5	70.80 miles (taylor-harrison-tyler)
EG-2010-WVPA-6	92.52 miles (pleasants to barbour)
Total	432.95 miles

Minimum commitment is 25 miles per line.

Cost

Cost, includes acquisition and processing, excludes third party costs i.e. damages, prints, copies, shipping, etc. is based on the number of participants per area of interest.

<u>Number in Group</u>	<u>Cost per Mile</u>
5+ Participants	\$1240.00
4 Participants	\$1525.00
3 Participants	\$2060.00
2 Participants	\$2895.00

The exclusive use period for original participants shall be 1 year for lines that have 1 or 2 participants and 7 months for all others commencing on the day of delivery of the final data set for each line. It is understood that after the exclusive use period expires, the data will be made available to the general oil and gas industry, all revenues from data licenses shall be the property of EVANS.

Program Rebates: In instances where there are less than 3 participants in a given line, or part thereof, the following program rebates shall apply; 1 Participant/Line, 2 yr. Rebate (50% of all proceeds from brokerage for 2 years after the expiration of the exclusive use period), 2 Participants/Line, 1 yr. Rebate (50% of all proceeds from brokerage for 1 year after the expiration of the exclusive use period),

The program as shown is subject to minor changes as required by terrain, permits and participation.

Seismic Reflection 2-D Data Acquisition Parameter Sheet

Client	Evans 2010 Pennsylvania Group Shoot
Line Name	Various
Location State Counties	Pennsylvania Various (Attached)
Type of survey	P-Wave reflection, 2-D
Live Channels	360 180 Split
Fold	90
Offsets	19,800 ft
Receiver Station Interval	110 feet
Source Station Interval	220 Vib Point Intervals (feet)
Record Length	6 Seconds
Geophones Per Station	6
Geophone Array	Inline over 110'
Sample Rate	1 Ms
Number of Vibrators	3 Active Vibrators
Sweep frequency	10-130 Hz
Sweep length	8 seconds
# Sweeps/Station	4/6/8 as needed
Number of Vibes	3 or 4
Recording instrument	ARAM (24 bit) Data Acquisition systems
SEGY copy of field tapes QCed	On DVD
SPS files	On CD or equivalent
Daily reports via email upon request	

REIMBURSABLE ITEMS, as required:

1. Permittee claimed non-negligent damages and conditions of permit reclamation.
2. Permit fees and related costs, there will be no Permit Agent Fees.
3. Project specific bonding and insurance costs.
4. Archaeological surveys, BLM & Reservation requirements and their associated costs.
5. Non-negligent re-survey, stand-by or re-survey for archaeological areas.
6. Any applicable sales or property taxes, duties, levees or fees.
7. Maps and Charts
8. Line clearing including dozing, plowing, snow removal, brush cutting, gates and related Mobilization/Demobilization and supplies.
9. Source motion study, water well testing, and H2s safety equipment.
10. All cost related to shipping Data.
11. Road Side Safety Crews as needed
12. A 3% handling fee for all reimbursable items.
13. All cost related to surveying.
14. Test Time/Weather Down Time: \$3,300 per hour (if requested/required).

Processing sequence

The processing sequence used on these data sets will consist of the following general flow and may be modified as necessary to meet specific requirements.

BASIC PROCESSING

1. **Reformat SEGD to Internal Format**
2. **Spherical Divergence Correction and Trace Edits**
3. **Refraction Analysis – *Every Record Picked***
Utilizing Green Mountain Geophysics Fathom 2-D or Renegade Software
4. **2D Geometry and Elevation/Refraction Static Application**
5. **Surface Consistent Deconvolution**
Source, Receiver, Offset
6. **Zero Phase Spectral Whitening**
Typically over Sweep Frequencies
7. **CDP Sort**
8. **Velocity Analysis**
Program utilizes Stack Response, Gather and Semblance in Interactive Picking
9. **Surface Consistent Auto Statics**
Minimum 2 Passes
10. **Iterate Steps 8 and 9 as necessary**
11. **Noise Reduction as necessary**
12. **CDP Statics**
13. **2D CDP Stack**
14. **Post Stack Filter/Scaling/Decon or Whitening Application**
15. **Post Stack Signal Enhancement -FX Prediction Filter**
16. **Final Structural output**
17. **DMO pre post stack migration in structurally complex areas.**
18. **Post Stack Kirchoff Migration**
19. **Post Migration 2D Signal Enhancement – FX Prediction Filter (if necessary)**
20. **Migration output to SEG Y**
21. **ASCII CD with stacking velocities**
22. **Post Stack Migration output (Raw Migrated Data)**

ADDITIONAL PROCESSING AND COSTS

Finite Difference migration (substitute for Kirchoff Migration)	\$ 30.00/mi
Pre-Stack Time Migration (Tsunami Module)	\$ 75.00/mi
Z-White Spectral Enhancement	\$ 60.00/mi
650 Mb CDROM media cost plus	\$ 35.00/stack dataset
DLT Cartridge media cost plus	\$ 35.00/stack dataset
SEG Y copy of the field data with geometry stuffed headers	\$ 30.00/mi
ASCII CD with stacking velocities	N/C upon request

Third party charges such as tape copies, printing and shipping charges will be charged at cost plus 3%.