



Seismic Testing FAQs

1) What is a seismic test?

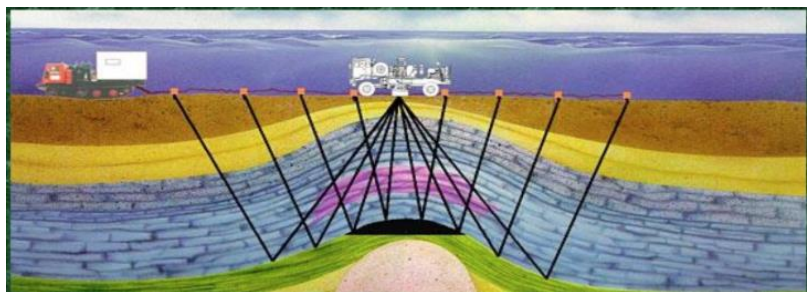
Seismic testing is a way to obtain an image of rock formations below the Earth's surface.

2) What is seismic data?

Seismic data shows different rock formations as layers of reflectors. Different rock types cause seismic reflection events. Seismic data is collected in the field, processed in a computer center, and interpreted by a geophysicist. There is 2, 3, and 4 dimensional seismic data (2D, 3D, 4D) being collected around the world at this time. 2D seismic shows a single slice of the earth. 3D seismic shows a volume of earth. 4D seismic shows a 3D volume at different times in the life of an oil and/or gas field. 3D seismic is the primary choice of data collection today for oil and gas exploration.

3) How is seismic data collected?

The "Reflection Seismic Method" is a geophysical technique used to map in 2D or 3D, an image of the earth's subsurface. Sound waves are sent into the ground using an energy source such as vibrators, air guns or dynamite.



The sound waves pass through the earth and are reflected off of, and transmitted through, the rock layers. (Think of sonar, an MRI, or a cat scan).

4) When is seismic data collected?

Seismic data is collected when the environmental requirements and weather conditions permit. This can be during the day or night. Usually, it is done when there is the least cultural (people) activity (9 a.m. – 3 p.m. in residential areas). Door hangers will be distributed 24-72 hours in advance to the areas where vibe trucks will be operating. The Crestone/SAS Acme/Vessels Minerals project is planned to begin in mid-February and be done by mid-March.

5) Why is Crestone Peak Resources using seismic testing?

Crestone Peak Resources is partnering with Seismic Acquisition Services, LLC. (SAS) to conduct a 3D seismic survey to safely and efficiently develop oil and natural gas in the area.

6) Why is seismic testing important to oil & gas production?

Seismic data allows scientists to identify the rock formations that have the characteristics required to hold oil and gas. By using this technology, scientists are able to reduce the industry footprint and maximize production from individual wells.

7) How much does it cost to collect seismic data?

The cost of acquisition depends on permit costs, crew costs, and other equipment costs. Currently, it costs around \$75,000 per square mile to acquire 3D seismic data. The Oil and Gas Company that requests the acquisition spends at least \$1M, and possibly over \$40M, before they see any of the results. The mineral owners and surface owners pay nothing.

8) How do I give permission to a company that wants to collect seismic information on my property?

You will be contacted by a permit agent prior to any activity on the surface of your land. Read the permit carefully. Make it clear what your expectations are for the use of the surface of your land. Put any special requirements in the permit, (i.e. gate entry, locks, call 1st, etc.) You can mention to them that they also need to acquire a state permit for seismic testing.

9) Is this permit a contract or a lease?

Once paid, the permit is a binding contract but only for access to the property. It does not convey any mineral rights.

10) Will the seismic permit allow a company to drill an oil & gas well on my property?

No, a seismic permit is simply temporary written permission from the landowner allowing seismic testing across your property and should not be confused with an oil & gas lease or seismic option agreement.

10) How will seismic testing benefit me as a mineral owner?

Seismic testing can help to discover and develop those resources that otherwise could not be accessed. Seismic testing will also allow more precise drilling which will produce higher recovery rates and larger payments to mineral owners.

11) What activities will take place on my property?

Not every property is affected in the same way. It depends on the test design and other variables but the activities may include:

- surveying and mapping proposed seismic lines, energy points and access routes
- clearing vegetation for safe access along seismic lines and/or to and from energy points (for the Crestone Acme/Vessels Minerals Survey, no vegetation will need to be cleared)
- placing small surface markers including pin flags or paint spots along seismic lines, at energy points and along access routes
- placement of energy source points

- laying out temporary cables and introducing recordable sound waves (for the Crestone Acme/Vessels Minerals Survey, minimal cable will be used)
- recording sound wave vibrations as they reflect back to the surface

12) How will this affect my farming?

Conducting seismic and farming operations simultaneously can be challenging but good communication and planning will minimize any inconvenience. The seismic crew will have liaisons/permit agents working with the landowners and recording crew to minimize any interruption to the surface owners activities on the property.

13) Who can I contact for more information?

SAS Main Office (720) 688-0052 or Crestone at (720) 410-8537

