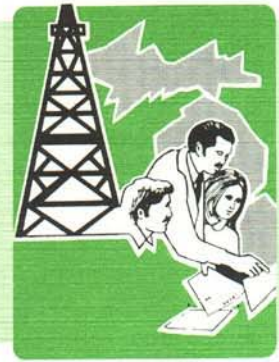


# Seismic Testing on Your Property

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**H**ow can you know if there is oil or gas beneath your property? Drilling is very expensive, so before it is undertaken, there must be reason to believe that oil exists. To help detect oil structures, petroleum engineers have developed instruments that help geologists separate the good prospects from the poor. The most commonly used instrument is the seismograph.

Seismic methods involve creating a sound on or a few feet below the earth's surface that sends off small vibrations

directed into the earth's depths. These are then measured as they bounce back off different layers of the earth's structure (See Figure 1). By measuring the amount of time that it takes for the sound waves to bounce off different structures and return to the surface, technicians determine the depth of many kinds of geological formations, including structures that may contain oil and gas.

Typically, when a seismic company wants to run a line on your property, they will send you a letter requesting your permis-

sion. Most companies use a similar letter and send two copies with an enclosed postage-paid envelope.

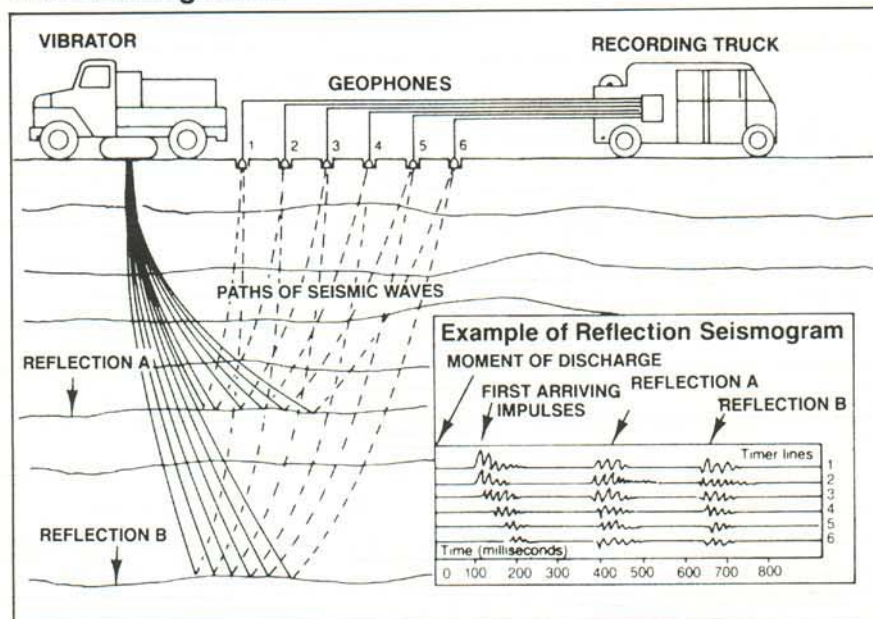
The company may ask to run its line on the road right-of-way in front of your property, or it may want to run a diagonal line across your property. If you agree to their request and return the signed letter, you can expect to have the line run in the near future. If you don't return the signed letter, the company will probably follow-up with a phone call or personal visit.

In Michigan, property owners fronting on county roads generally own the land that runs to the center of the road. If you own property along a state highway, the state probably owns the right-of-way. If you have questions about property ownership, check your deed.

To give your permission, all you have to do is sign the letter and send it back. But before you sign any letter or give permission to any seismic company, consider the following key points.

1. Determine what type of line the company is running and the damage it might cause to your property. If the company runs a line on the road, it may use vibraseismic trucks that thump the land surface to make the vibrations sent into the earth. However, some companies create vibrations using explosive charges placed in holes drilled in

**Fig. 1: When using seismic reflection surveying, the vibrator at point 1 creates shock waves that are reflected by the subsurface formations, picked up by the geophones, and recorded in the recording truck.**



Berger, Bill D. and Kenneth E. Anderson, *Modern Petroleum*, 2 ed. Copyright PennWell Books, 1978, 1981. Used by permission.

the soil. Both methods create shock waves that the company measures to determine the density and thickness of subsurface structures.

2. Once you determine the location and type of line that the company plans to run, you have a better idea of the type of damage your property may incur. Damage that might concern you could include, but is not limited to, broken tile, crop damage, disrupted fences and root damage to trees. You can request payment for these damages and should receive cash prior to allowing the company to run its line.

3. Some landowners without an oil lease request and receive a fee from the company running the seismic line on their property, even if damages are not anticipated. Their reasoning is that the seismic company has a better picture of their property as a prospective exploration site after it runs the line and analyzes the data. Armed with this knowledge, the company has a better idea of their property's value than they do. Landowners reason that the company should pay for the privilege of gathering information from their property.

4. Many landowners allow companies to run lines without charging a fee. Others demand fees up to and even over \$10 per rod (16½ ft.). At \$10/rod, the fee is about \$800 to run a line across a square 40 acre parcel.

5. If you have already leased the land on which some other company wants to run a line, review the granting clause in the first portion of your lease. It probably says that you have granted the exclusive right to explore that land to the company who holds your lease. That means you shouldn't sign anything allowing another company to explore the land until your lease is up. The seismic company is responsible for getting permission from the company that holds your lease. If the company that holds your lease gives another company permission to run a line on your property, you still have the right to personally negotiate and receive payment for any damages the line causes to your property. Be sure to demand cash, a certified check, a bank money order or any instrument that you can immediately deposit in your account. Some landowners in Michigan are still holding checks or site drafts that weren't paid and probably won't be paid even though the line was completed months ago. Many times bank drafts are never honored, and since the payment is delayed for a specified number of days, you don't know it won't be honored until after the line is run.

6. The amount of money that you can collect for damages or the privilege to explore your property depends on how badly the company wants to run a line and the total costs of that line to the company.

7. Consider using a signed document, like the example included in this bulletin, to specify the terms agreed upon before you let a company run its line.

In conclusion, it is to your advantage to look into the pros and cons of seismic testing before you sign an authorization allowing it. Determine what damages such activity might cause to your property. Talk to neighbors or any other landowners who have had lines run on their property or contact your local Cooperative Extension Service office, then decide what action you want to take. The goals outlined in this bulletin are not meant to stop or hamper the exploration of natural resources. They are to help protect your rights and your property.

**Fig. 2: This is an example of a seismic contract that landowners can use instead of the letter that seismic companies send to them. It avoids giving companies blanket permission to do whatever they want to your land and makes a provision for receiving compensation.**

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# STANDARD SEISMIC PERMIT FORM

STATE PERMIT NUMBER \_\_\_\_\_

Seismograph Company \_\_\_\_\_

Home Office Address \_\_\_\_\_ Phone \_\_\_\_\_

Local Office Address \_\_\_\_\_ Phone \_\_\_\_\_

Project Name \_\_\_\_\_ Client \_\_\_\_\_ County \_\_\_\_\_

State \_\_\_\_\_ Party Number \_\_\_\_\_ Date Permitted \_\_\_\_\_

Line Number \_\_\_\_\_

Description of Property \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**The above described property belongs to:**

Name \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Phone \_\_\_\_\_

**If rented, crops belong to:**

Name \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Phone \_\_\_\_\_

Authorization to run a single line across above described property is subject to the following conditions:

- 1) Seismograph company agrees to mark proposed line and secure approval from landowner on line location.
- 2) No explosive charges shall be placed closer than \_\_\_\_\_ feet from any tile lines.
- 3) Seismographic company agrees to respect lessor property and pay for repair of damage to any fences, crops or other property damaged within ten days of such damage.
- 4) Vehicles, including ORV, will be restricted from property except upon landowner approval subject to frost conditions, crop damage, etc.
- 5) Payment of \_\_\_\_\_ in the form of cash, certified check or bank money order, will be made to landowner prior to running line.

**Mineral Owner:** (If different than surface owner)

Name \_\_\_\_\_ Mineral Lessee \_\_\_\_\_

Address \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

6) All holes caused by explosives are to be filled to landowner's satisfaction:

Company contracted to plug holes:

Name \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

Telephone ( ) \_\_\_\_\_ Date to be plugged \_\_\_\_\_

Permitee \_\_\_\_\_ Witness \_\_\_\_\_

7) Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Many other Cooperative Extension Service bulletins are available on the topic of oil and gas. For more information, call, write or visit the Cooperative Extension Service office in your county for a catalog of available publications. Below is a list of some related bulletins available there or by writing to: MSU Bulletin Office, P.O. Box 6640, East Lansing, MI 48826-6640.

- E-1512 Oil/Gas Leasing—Basic Considerations for Landowners, 8 pp., 30¢
- E-1513 Hints on Negotiating an Oil and Gas Lease, 8 pp., 30¢
- E-1514 A Review of Oil and Gas Production in Michigan, 8 pp., 30¢
- E-1515 Rights and Obligations under an Oil and Gas Lease, 12 pp., 35¢
- E-1612 Compulsory Pooling, 2 pp. (free)
- E-1613 Oil and Gas Drainage, 2 pp. (free)
- E-1614 The Dormant Minerals Act, 2 pp. (free)
- E-1615 Oil/Gas Leasing in Michigan—Essential Considerations, 4 pp. (free)
- E-1647 Michigan's Oil and Gas Industry: Past, Present, Future, 4 pp. (free)
- E-1648 Michigan's Oil and Gas Regulations, 4 pp. (free)
- E-2121 Oil and Gas Royalties: Look Before You Lease, 6 pp. (available soon)

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1P-5M-7:88-TCM-SP-New. Price 30 cents. File 28.53 (Oil and Gas).