

CHAPTER 17

Legal Aspects of Geophysical Exploration

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Synopsis

§ 17.01. Introduction.

§ 17.02. Geophysical Exploration.

§ 17.03. The Legal Characterization of Geophysical Exploration.

[1]--Property Right.

[2]--Grant of Right to Conduct Geophysical Exploration.

[a]--Express Grant.

[b]--Implied Grant.

[3]--Exclusivity of Right to Conduct Geophysical Exploration.

§ 17.04. Parties from Whom Permission Must be Obtained.

[1]--Surface Owners, Mineral Owners, and Lessees.

[2]--Counties and Townships.

§ 17.05. Liability for Geophysical Exploration.

[1]--Theories of Liability for Authorized Geophysical Exploration.

[a]--Liability to Owner of Land Upon Which Geophysical

Exploration Occurs.

[i]--Surface Damages.

[ii]--Unreasonable Use of the Surface Estate.

[b]--Liability to Adjoining Landowners.

[2]--Theories of Liability for Unauthorized Geophysical Exploration.

[a]--Geophysical Trespass and Physical Entry.

[b]--Geophysical Trespass in the Absence of Physical Entry.

§ 17.06. Damages Resulting from Geophysical Exploration.

[1]--Damages Resulting from Authorized Exploration.

[a]--Actual Surface Damages.

[b]--Punitive Damages.

[c]--Physical Pain, Mental Anguish, and Inconvenience.

[2]--Damages Resulting from Unauthorized Geophysical Exploration.

[a]--Actual Surface Damages.

[b]--Damages in the Absence of Physical Injury.

[i]--Nominal Damages.

[ii]--Decrease in Speculative Value.

[iii]--Reasonable Rental Value.

[iv]--Restitution.

[c]--Punitive Damages.

§ 17.07. Conclusion.

§ 17.01. Introduction.

Early Appalachian Basin oil and gas producers focused their efforts on the prolific shallow oil and gas formations throughout the region such as the Big Injun Sandstone, Berea Sandstone, Clinton and Medina Sandstones, Bradford Sands, and the Trenton limestone. However, development of these shallow oil and gas reservoirs has exhausted the supply of attractive shallow drilling locations. In recent years, oil and gas producers have been forced to focus on deeper horizons that offer greater rewards with correspondingly greater risks. As the search for oil and gas in the Appalachian Basin moves to these deeper, riskier horizons, geophysical exploration has emerged as a necessary tool. Interested in gaining an economic advantage, Appalachian Basin oil and gas producers have come to rely heavily on these geophysical exploration techniques. These techniques aid in making more informed drilling decisions as to the presence of subterranean formations that might prove to be oil or gas bearing without incurring the costs of drilling to determine if those formations even exist.

The financial and technological difficulties of finding economic oil and gas reserves in the Appalachian Basin will result in continued reliance on geophysical exploration where it is practical. This reliance, combined with advances in technology, is likely to lead to increased tensions between geophysical explorers and landowners. Therefore, it is important that geophysical explorers, mineral owners, and surface owners have a basic understanding of their rights, duties, and liabilities with respect to geophysical exploration.

The focus of this Chapter is on the basic legal aspects of geophysical exploration. The Chapter will investigate the rights of various interest holders to explore by geophysical methods, the respective rights of surface versus mineral owners, and the exclusivity of exploration rights. This Chapter will also examine various theories of liability and damages resulting from geophysical exploration.