Oil & Gas Leasing Issues

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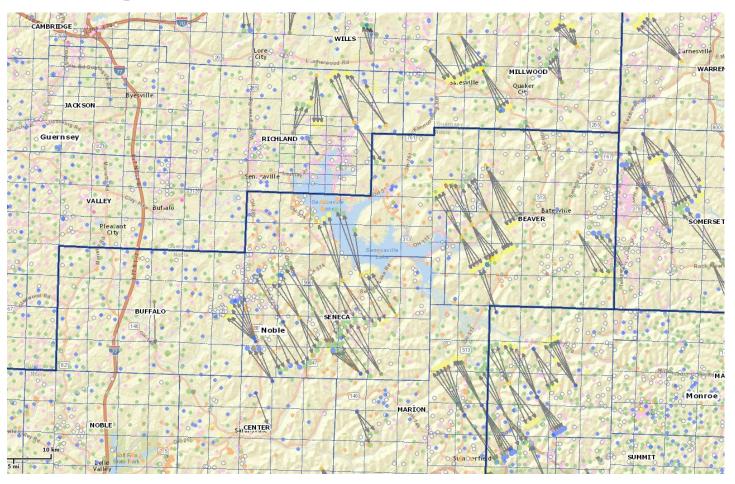


Hot Locations in Ohio



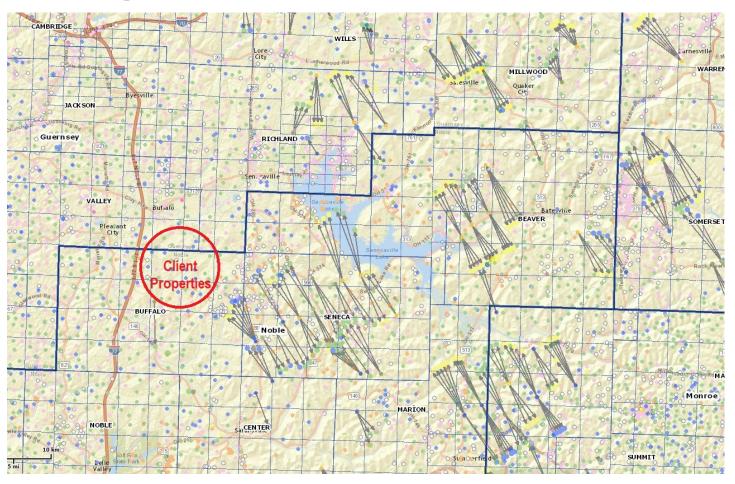


Drilling Near Senecaville Lake





Drilling Near Senecaville Lake





The Oil & Gas Lease

- Establishes the rights, privileges and obligations of the mineral interest owner ("Lessor") and the exploration company ("Lessee") as to a specific property ("Premises).
- The Premises needs to be carefully described by references to the conveying deeds, acreage, and county auditor parcel numbers.
- There is no "standard" lease form. All terms are negotiable.



Rights Conveyed to Lessee

- The exclusive right to drill, explore, conduct seismic tests, operate, produce, remove and market all of the oil, gas, liquid and gaseous hydrocarbons and their constituents and byproducts located in the Premises that are not specifically reserved by Lessor.
- The limited right to construct roads, pipelines, electric power facilities, and other production facilities across & through the Premises

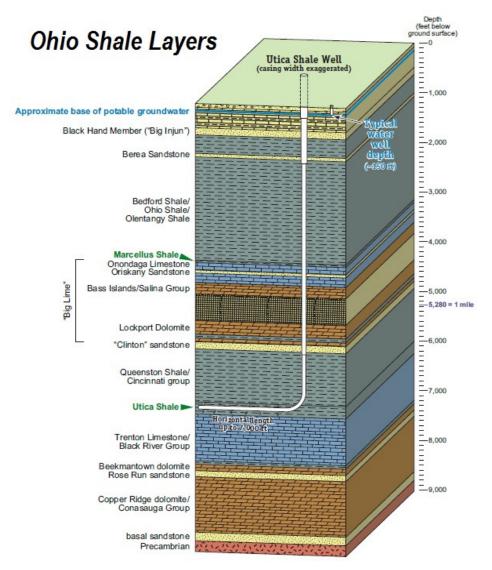


Lessor's Reserved Rights

- Reserving oil & gas rights above and below the selected shale formation.
- Reserving rights to sulfur, coal, lignite, uranium, and other fissionable material, geothermal energy, base and precious metals, rock, stone, gravel, and any other mineral substances.
- Reserving exclusive right to surface area near existing or planned structures. Common setbacks: 500' from unoccupied structures and 750' from occupied structures.



Lessor's Reserved Rights



Some leases in Southeast Ohio are restricted to either the Utica or the Marcellus Shale layers at specific depths.



Mineral Layer Depths

Formations

Formation	Тор
BEREA SANDSTONE	1437
MARCELLUS SHALE	4012
BIG LIME	4016
ORISKANY SANDSTONE	4155
LOCKPORT DOLOMITE	5120
PACKER SHELL	5474
WHITE CLINTON	5673
MEDINA SAND	5857
QUEENSTON FORMATION	5877
UTICA SHALE	7154
POINT PLEASANT FORMATION	7258
TRENTON LIMESTONE	7363



Compensation to Lessor

- Lessee pays Lessor a one-time cash bonus per acre.
- Lease bonus payments in southeast Ohio can \$3,000 - \$6,000 per acre.
- Lessee pays Lessor a "royalty interest percentage" for the value of oil and gas actually produced from the property.



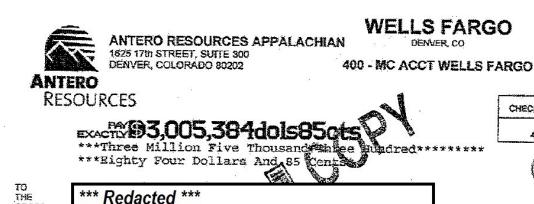
Compensation to Lessor

LEASE BONUS PYMT; 513.741 NET ACRES; TURNER LEASE; OHIO/UTICA

DETACH AND RETAIN FOR TAX PURPOSES

DETACH AND RETAIN FOR TAX PURPOSES

DETACH AND RETAIN FOR TAX PURPOSES



PLEASANT CITY, OH 43772

ORDER

CHECK NUMBER DATE PAY EXACTLY
4819 | 1804-08-2012 | \$3,005,384.85

Check No. 4819

#004819# #121000248#

4124525841#



Royalties

- Historical royalties were 1/8 or 12.5% for traditional vertical wells.
- Royalties for horizontal wells have been going for 18% - 20% in southeast Ohio.
- The "net revenue" received by Lessor depends upon the royalty percentage and whether any costs are allocated to Lessor for extraction, compression, dehydration, transportation, marketing and other expenses related to the production and sale of the product.



Mineral Lease Term

- The "primary term" is the fixed number of years during which the Lessee can maintain its rights without drilling (typically 3 - 5 years).
- The "<u>secondary term</u>" is the extended period of time for which rights are granted to the Lessee once production has occurred.
- The secondary term can last indefinitely after Commencement of Operations for so long as production of product continues on the Premises. (See Held by Production definition below)



Commencement of Operations

- The term "Operations" means:
 - constructing a well site, drilling, fracturing, completing, reworking, recompleting, deepening, plugging back or repairing a well to obtain production of Lease Products, conducted in good faith and with due diligence, whether on the Leased Premises or the Pooled Unit ("Drilling Operations"); and
 - production of Lease Products in Paying Quantities subsequent to drilling ("Production Operations").



Held by Production

- The Lease may be held in force after the termination of the Primary Term and any renewal purchased by Lessee so long as:
 - Lease Products are being produced in Paying Quantities from the Leased Premises or any Pooled Unit which includes all or part of the Leased Premises; or
 - Lessee is diligently and in good faith reworking a non-producing well on the Leased Premises or Pooled Unit.

Paying Quantities

- The production of Lease Products in quantities sufficient to yield a return in excess of operating costs (even though drilling and equipment costs may never be repaid) by the Lessee making a good faith commitment to maximizing production from each well.
- Lessor has an interest in precisely defining this term but Lessees will resist precise definitions.



Force Majeure - Extends Term

- Force Majeure provides an excuse from nonperformance caused by circumstances beyond the reasonable control of the Lessee, such as Acts of God and Acts of the Government that are resisted by Lessee in good faith.
- Term of Lease is extended during Force Majeure.
- From a Lessor's perspective, the Force Majeure clause should be limited in time (2-3 years is common).



Surface Use Fee

- Lessee pays Lessor an additional amount (\$50,000.00 is common) for each 10 acre well pad constructed on the Leased Premises.
- For any acres of disturbed land outside of the well pad, Lessee pays Lessor an additional amount (such as \$6,000.00) per disturbed acre.
- Additional disturbed land includes acreage for tanks, equipment, roadways, pipelines and other operations servicing the wells.



Location Approval

- To minimize disruption of Lessor's current or future use of the Leased Premises and to maintain its aesthetic value:
- the final location of well pads, access roads, pipelines, canals, ditches, ponds, levees, dams, fences, telephone and power lines, compressors, dehydration facilities, pits and waterlines shall be approved by the Lessor in writing.
- approval shall not be unreasonably withheld.



Shut-In Royalty Clause

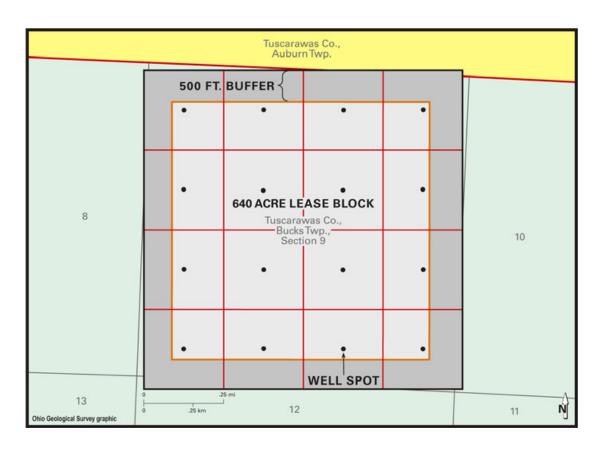
- Allows the Lessee to hold a lease past the primary term without actually producing product from an operable well because of unfavorable market conditions.
- Lessors want this time period to be short (2-4 years is common) to encourage Lessee to promptly produce minerals, otherwise risk losing the lease.
- A nominal payment (such as \$50 per well/acre) is common

Pooling of Properties

- Allows Lessee to "pool" the Lease Premises with other land to more effectively drain the target layer of product, using the best production technology in common use at the time of drilling ("Pooled Unit").
- Extraction of product from any property in the Pooled Unit "holds by production" all properties in the Pooled Unit.
- Lessor will want to limit the total size of the pool (640 acres is common).



The Old Way



Development of a one square mile lease block (640 acres) requires 16 vertical wells

Each well involves a 2 acre drill site plus roads and pipelines.



The Old Way

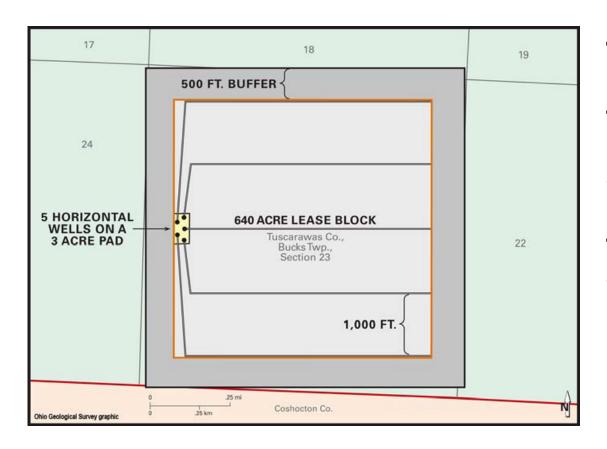




The Old Way





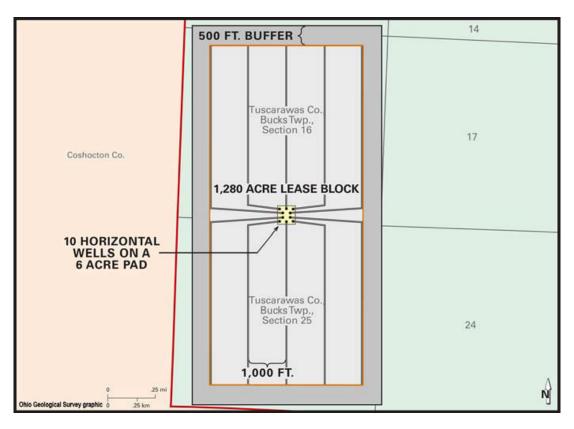


Today, using horizontal wells, the same square mile can be drained with 5-6 horizontal wells from a single 3-6 acre drill site.



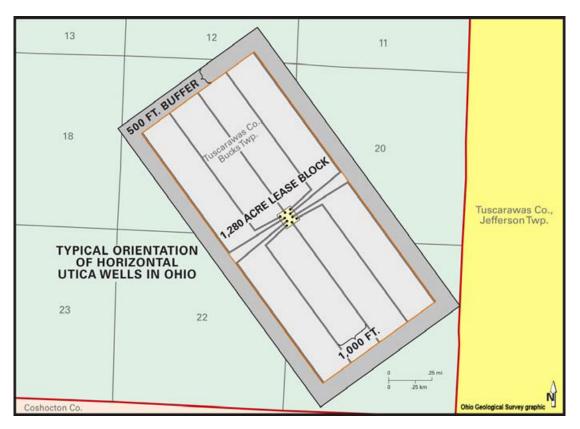






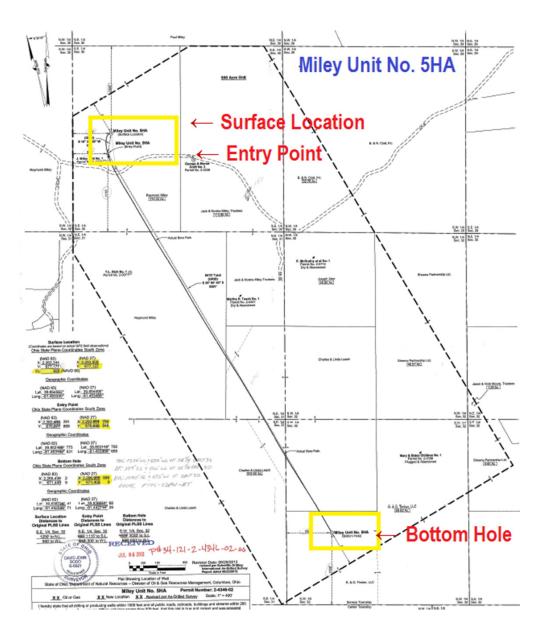
Operators would like to have lease blocks of about 2 square miles contiguous to allow drilling in two directions from one central drill pad.





Most horizontal wells in Ohio are being drilled in a NW-SE orientation to intersect the natural NE-SW joints and fractures.

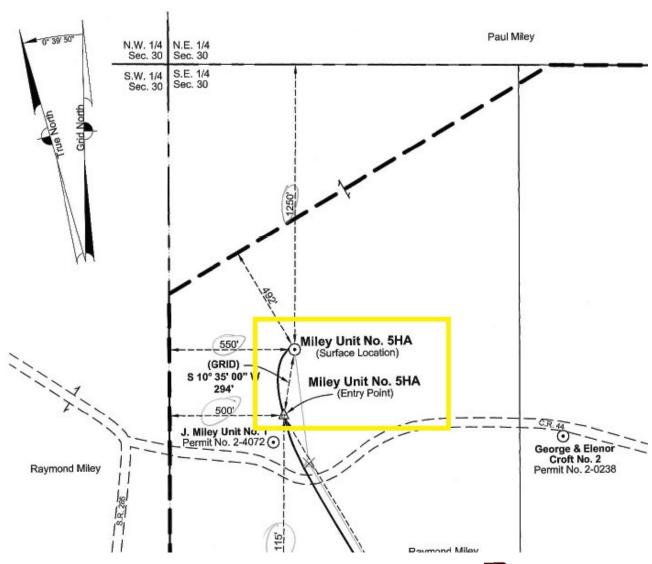




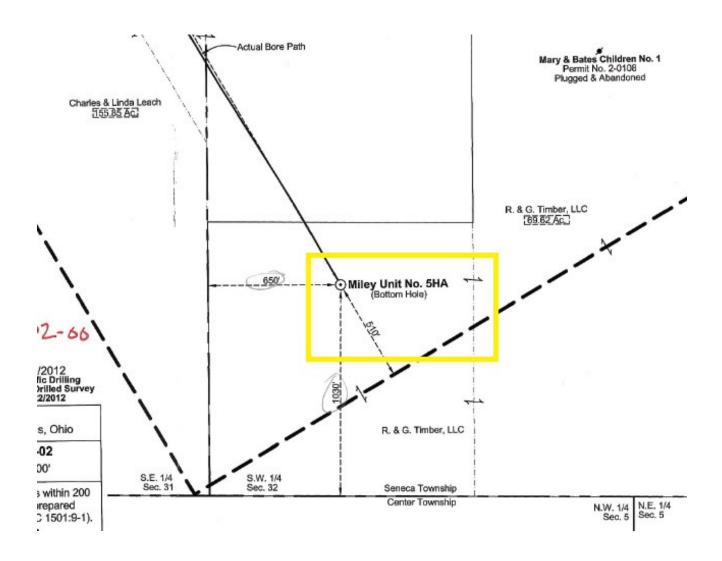
Antero Resources

- 640 acre unit
- Permitted Issued 04/27/12
- Began Producing 4th quarter 2013
- Gas & Oil







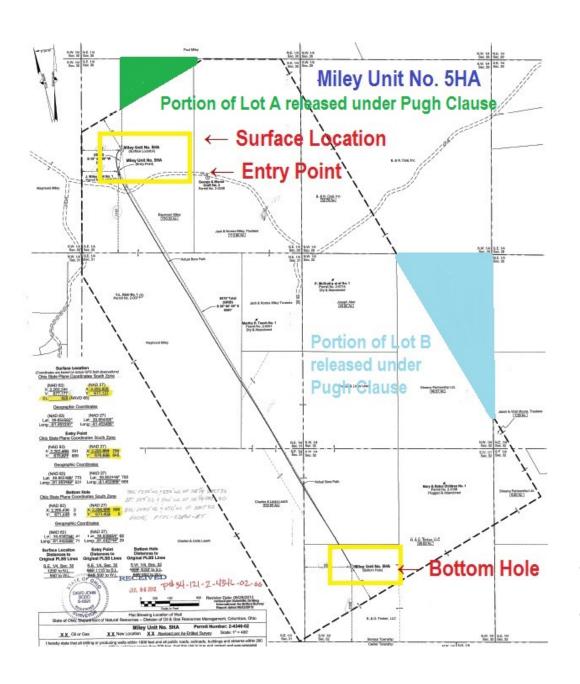




Pugh Clause

- The general rule is that the entire Lease Premises will be held by production on any part of the Lease Premises.
- A Pugh Clause is intended to prevent the holding of non-producing acreages located outside of the Pooled Unit.
- In negotiated Leases, the release language should not only include the undrilled acres but also depths below the producing formation. This is referred to as a vertical and horizontal Pugh Clause.





How the Pugh Clause Works



Surface Use Implications

- Drilling and maintaining a well may involve water use, vehicular access, noise, crop damage, timber loss, and other negative impacts.
- Unless the Lease provides otherwise, there is no common law duty to restore land and Lessee has the implied right to use as much water that is reasonably necessary to produce the minerals from the Leased Premises.



Degree of Care

- Lessee shall act as a prudent operator within reasonable standards to prevent its operations from:
 - Polluting soils, water or air at or near the Leased Premises;
 - Causing erosion or loss of soil fertility;
 - Damaging crops, grasses, trees and pastures;
 - Harming wild or domestic animals;
 - Damaging buildings, roads, structures or fences.



Surface Protections

- No right to use surface or groundwater.
- No right to dig or maintain pits unless permitted by ODNR.
- Dikes & firewalls around all containers.
- Fences and gates around operational facilities.
- Surface and groundwater testing procedures.
- Maximum roadway width.
- Underground power lines.
- Timber removal payments provision.
- Crop damage payment provision.



Surface Reclamation

- Triggered upon completion of Drilling Operations:
 - Removal of all debris, equipment and personal property within 30 days.
 - Reduction in the pad site footprint to the minimum necessary size.
 - Restoration of disturbed soils by seeding, fertilizing and/or mulching to prevent erosion.
- Triggered when well ceases to produce:
 - Removal of all remaining equipment, debris and structures.



Other Important Documents

- Title Report
- Subordination of Mortgage
- Oil & Gas Lease Binder
- Memorandum of Lease
- Affidavit of Non-Production & Non-Compliance



General Advice

- Get involved early.
- Be patient.
- Don't be afraid to ask for language that protects the landowner.
- Read final documents carefully.





