Mineral Ownership Terms

Oil and Natural Gas are Minerals.

The oil and gas minerals are the “mineral estate” within a given tract of land.

Per COGCC rules, to “Own” the oil and gas minerals means to have the right to develop the oil and gas within a given tract of land.

Ownership is by
- A deed
- A lease
- An operating agreement giving the right to drill

The boundary of a tract of land is a mineral property line.

The boundary is called a “lease line” even if the minerals are owned by deed or by an operating agreement.
You own a nice 2-acre lot in Weld County.

You Own the minerals.

The Niobrara Formation is 7000’ under your property.

It is full of oil.

There is plenty of room in the back yard for a rig.

So you say - let’s drill an oil well!!
A well drains the oil from the rock around the wellbore because the oil in the pore spaces of the rock layers deep in the earth moves.

That’s great - it will move to the well and up the casing to the tank and you will sell it!!

Hooray! You are going to be rich!! (Or, the kids can get braces and go to college!)
The distance away from the well from which oil is drained is the drainage radius.

If the well will produce your neighbors’ oil, the COGCC will not approve a permit for your well.

Why...?
Protection of Correlative Rights

By statute, the COGCC is charged with the protection of correlative rights.

*The COGCC will not allow you to drill a well that will produce someone else’s oil.*

How does the COGCC prevent that from happening?

**Setbacks:** A well must be located a minimum distance (less than the drainage radius) from the boundary of a mineral estate.

- **Rule 318.a**
  - Deep Reservoir (> 2500’ deep) must be 600’ from the lease line

- **Rule 318.b**
  - Shallow Reservoir (< 2500’ deep) must be 200’ from the lease line
Rule 318.a requires a 7000’ well to be 600’ from the lease line.

But...your lot is not even 600’ across!

The rule prevents you from developing your Niobrara oil!!
By statute, the COGCC also has two other charges:

- Fostering the responsible development of the state’s oil and gas resources.
- Prevention of waste of the state’s oil and gas resources.

To fulfill all three charges, the statute gives the Commission the authority to establish Drilling and Spacing Units.

- All interests within the unit are combined to be developed as one mineral estate.
- The unit cannot be smaller than the area that is drained by one well.
- There will be a setback from the Unit Boundary to protect correlative rights.
That’s a great solution!

You apply to the Commission for an order to create a drilling and spacing unit that is large enough for a well to develop your oil - and your 15 neighbors’ oil.

The whole neighborhood will get rich!
Important to note:
Without setbacks and spacing, the only way your neighbors could protect their oil from being drained by your well...
...would be to drill their own wells...
...which would look like this...

Signal Hill, Long Beach, CA
So, the spacing order is approved…

…but, before you hire a drilling rig, you talk to all 15 neighbors about how to share the costs and the profits for the neighborhood unit well. An operating agreement is drawn up and everyone signs on - except for Neighbor # 11. (She does not want to get rich!)

It will cost a lot to drill the well, and you and your other 14 neighbors cannot afford to “carry” her share of the costs.

Now what...?
The statute gives the Commission another tool to foster the responsible development and prevent waste.

That is the authority to pool nonconsenting mineral owners with cost recovery which includes a risk penalty.

Cost Recovery and Risk Penalty
- You and your 14 neighbors are taking a big financial risk to drill this well.
- All of you will recover 100% of your tangible costs and 200% of your intangible costs before Neighbor # 11 receives her full share of profits.

You apply to the Commission for an order to pool the interests in the unit.

Now you can drill the neighborhood well and everyone (including Neighbor # 11) lives happily ever after!
On a bigger scale, spacing also allows for the orderly development of irregularly shaped leases.

- 8 wells only partially develop 7 leases
12 wells fully develop 7 leases

This is much more efficient.

This improves recovery and prevents waste.
And, on an even larger scale, it allows for the drilling of horizontal wellbores that extend up to 2 miles or more...
...and develop *many, many* leases.
Drilling and Spacing Units

Purposes
1. Protect Correlative Rights
2. Foster Responsible Development
3. Prevent Waste

Results
1. Development of Small Leases
2. Orderly Development
3. Development with Horizontal Wells
4. Optimize Recovery
   - Use geologic and engineering data to determine the drainage radius for the reservoir
   - Reduce the setback from unit boundary
   - Establish setback between wells
   - Determine proper number of wells per unit

Note: The creation of a drilling and spacing unit is not the same as unitization.
Drilling and Spacing Unit: Geologic Data
### Codell Horizontal Wells Drainage Area Analysis

<table>
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<tr>
<th>API No.</th>
<th>Lease</th>
<th>Well No.</th>
<th>Reservoir</th>
<th>Operator</th>
<th>Section</th>
<th>Twp</th>
<th>Ring</th>
<th>Cumulative Oil (bbl)</th>
<th>EUR Oil (bbl)</th>
<th>Completed Interval (ft)</th>
<th>Average Porosity (pct)</th>
<th>Water Saturation (Sw) (%)</th>
<th>Thickness (ft)</th>
<th>Drainage Area (acres)</th>
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</table>

**Average Drainage Area: 282 acres**

**Drainage Area Equation:** 
Area = (EUR*Bo)/(7556*phi*(1-Sw)/RF)

**Assumptions Used:**
- Bo (R8/ST8) = 1.42 Formation Volume Factor, From observed Reservoir Fluids
- Recovery Factor (RF) = 16% Average from production analysis and estimated OOIP
Drilling and Spacing Unit Applications

Applicant
- Must own mineral rights for the geologic formation within the area to be the drilling and spacing unit
- No minimum percentage of ownership required

Application Submittal
- Submitted (by an attorney) to the Commission (hearings group)
- Deadline for submittal set by the annual hearing schedule

Application Content
- County
- Oil & gas field (if one exists)
- Geologic formation(s) to be spaced
- Application lands - legal description of the unit (QQ, section, township, range)
- Unit size (acres)
- Number of wells to be drilled
- Setback from unit boundary and between wells
- Type of wells to be drilled (vertical, directional, horizontal)
Drilling and Spacing Unit Applications

Notification
- All Owners within the unit
- If reducing setbacks, also affected Owners in adjacent lands
- LGD for application lands with their jurisdiction, CPW, CDPHE

Testimony
- Technical basis for size of unit, number of wells, and setbacks

Protests
- By interested parties by deadline set by the annual hearing schedule
- May result in contested hearing with testimony before the Commission

Approval
- By the Commissioners at a Hearing
- Drilling and spacing unit created effective immediately
- Order numbers assigned following the hearing
- Approved order posted on website
- DOES NOT DESIGNATE THE APPLICANT AS OPERATOR OF THE UNIT
Pooling Applications

**Preliminary Requirements**
- There must be a spacing unit.
- The nonconsenting unleased Owners have been provided an offer to lease or to participate (with cost estimate)
- The nonconsenting working interest Owners have been provided an offer to participate (with cost estimate)

**Applicant**
- Must own mineral rights for the geologic formation within the drilling and spacing unit
- No minimum percentage of ownership required

**Application Submittal**
- Submitted (by an attorney) to the Commission (hearings group)
- Deadline for submittal set by the annual hearing schedule

**Application Content - Similar to Spacing Application, plus...**
- Identification of well(s)
- Request for cost recovery with imposition of risk penalty
Pooling Applications

Notification
- All mineral interest owners within the unit (includes royalty owners)

Testimony
- Certification that nonconsenting unleased Owners have been provided offer to lease or to participate (with cost estimate)
- Certification that nonconsenting working interest Owners have been provided offer to participate (with cost estimate)

Protests
- By nonconsenting Owners by deadline set by the annual hearing schedule
- May result in contested hearing with testimony before the Commission

Approval
- Similar to Spacing Application
Unique Basin-Specific Elements of Spacing

Piceance Basin (NW Colorado)
- Williams Fork Formation - Equivalent Density for Directional Wells

Greater Wattenburg Area (NE Colorado)
- Niobrara & Codell Formations - Wellbore Spacing Units

San Juan Basin (SW Colorado)
- Fruitland Coal Formation - Restricted Number of Surface Locations
Deadlines

Hearings on the Website

Links to Application PDFs
Rules & Statutes on the Website

- 300 Series - Setbacks
- 500 Series - Hearings

Appendix V - Oil and Gas Conservation Act (statute)
Thank you!

Jane Stanczyk
Permitting & Technical Services Manager