

Quench My Thirst:

Water Rights in the Context of Water Treatment Technologies



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Introduction



- 35,000 wells hydraulically fractured in the U.S. Annually
- Over one million wells have been hydraulically fractured since its introduction in the 1940s
- 90% of all wells drilled in the U.S. today are stimulated by hydraulic fracturing

Source: American Petroleum Institute
and Environmental Protection Agency

Water, Water . . .



- Hydraulic Fracturing involves use of water -- lots of water
- Estimated 70 billion to 140 billion gallons of water consumed through hydraulic fracturing annually in U.S.
- Equivalent to amount of water annually consumed by the cities of Chicago or Houston.

Frac Water



- Water used in hydraulic fracturing is pre-treated with formation-specific chemical additives
- Additives include anti-corrosive agents, biocides, friction reducers, lubricants, surfactant and clay stabilizers and other chemicals and substances
- Additives comprise a small percentage of overall volume, but render the return water (“flowback water”) non-potable and unusable



What Happens to Wastewater

- Most common method of disposing of wastewater is by disposal well injection into porous formations thousands of feet underground.
- Water may be permanently removed from the hydrologic cycle by disposal injection well
- Development of advanced water treatment can lessen impact of oilfield operations on water resources.



BY VIRTUE OF REUSE, A MARKET IS BORN

- Disposal of wastewater is being replaced by the reuse of such wastewater treated by water treatment technologies.
- Treated water (recycled water) can be used for hydraulic fracturing, and in alternative agricultural, commercial, industrial, municipal, oilfield or other applications.
- Who stands to benefit from the value created by water treatment technologies?
- Texas law neither contemplates the reuse of wastewater, nor the ownership of the economic benefits.



Ownership of Water



- A fee simple owner owns the groundwater in place underlying his land as a vested real property right subject to constitutional protection.
- Following the severance of the surface and mineral estates, groundwater in place is a part of the surface estate.

Source: *Edwards Aquifer Authority v. Day*

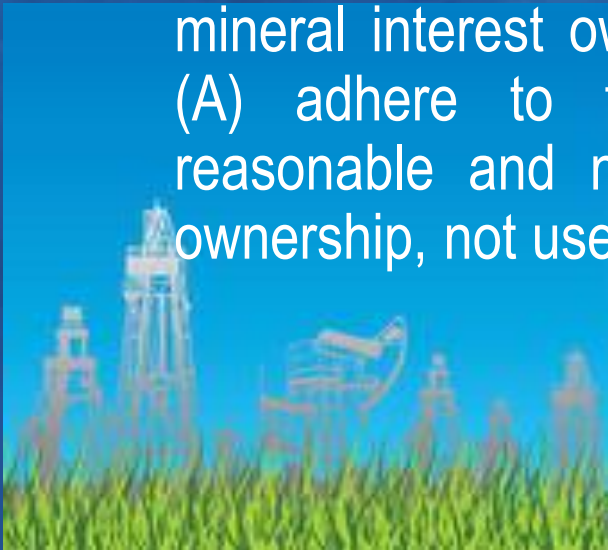
CORRELATIVE AND DOMINANT RIGHTS

- Upon severance of the surface and mineral interests (as in the case of an oil and gas lease), the mineral interest owner has superior rights over the surface estate—the rights of the mineral interest owner are said to be *dominant*.
- The correlative and dominant rights of the mineral interest owner afford it the necessary authority to carry out mineral exploration, production, and development activities under the oil and gas lease. Absent language to the contrary in the lease, these activities carry certain rights to the surface *implied* in all grants of minerals.
- Without the implied right the mineral interest owner would be unable to develop the minerals, and the benefits sought by the parties through the lease would be unrealized.
- The implied right of surface includes use of such part and so much of the water as is reasonably necessary to comply with the terms of the mineral lease.



THE IMPLIED RIGHT OF SURFACE USE

- The commonly stated principle of law is that the grant of minerals carries with it the *implied right of use of such part and so much of the surface as is reasonably necessary to comply with the terms of the mineral lease and effectuate its purpose.*
- However, the scope of the implied right is not limitless. A mineral interest owner's implied right of surface use must (A) adhere to the accommodation doctrine; (B) be reasonable and non-negligent; (C) yield to principles of ownership, not use; and (D) benefit the mineral estate.





A. Accommodation Doctrine

- The accommodation doctrine requires a mineral interest owner to *reasonably accommodate the existing use of the surface* by a surface estate owner, and in certain circumstances may require a mineral interest owner to adopt alternative usage of the surface.
- Three fundamental considerations provide the backbone of the accommodation doctrine:
 - *First*, is there an existing use of the surface by the surface estate owner?
 - *Second*, does use of the surface by the mineral interest owner preclude or impair the surface estate owner's existing use?
- *Third*, under established practices in the industry, are reasonable alternatives available to the mineral interest owner that nevertheless permit it to comply with the terms of the mineral lease and effectuate its purpose?

A mineral interest owner is permitted to exercise its implied right of surface use to access water solely from the surface for such operations, even if such operations preclude and impair the pre-existing use of the surface owner.



B. Reasonable and Non-Negligent Uses of the Surface



- The reasonable use standard requires mineral interest owners to conduct activities in a manner that is appropriate in character and scope given the circumstances.
- Reasonable use includes the right to use water from the leased premises in such amount as may be reasonably necessary to carry out the lessee's operations.
- Even where the use of water would shorten the life of the surface owner's water supply by several years, or where the use of water would completely drain water.

Negligence Standard

- Even if the mineral interest owner's use is reasonable, the negligence standard imposes further limitation by requiring that mineral interest owners conduct activities in a non-negligent manner.



- Will this limitation one day require mineral interest owners to adopt water treatment technologies to treat wastewater?

Surface Use vs. Ownership

The rights of a mineral interest owner are described in the context of use, not ownership. A mineral interest owner may use such part and so much of the surface as is reasonably necessary to comply with the terms of the mineral lease and effectuate its purpose; however, *the implied right does not grant ownership of the surface to the mineral interest owner.*



- Mineral interest owner must obtain ownership of water from the surface estate owner in order to sell treated wastewater and derive any economic benefit from the sale.
- Absent such ownership, mineral interest owners are unlikely to be incentivized to adopt water treatment technologies.
- Costs expended on water treatment technologies would create no economic benefits for the mineral interest owner and implementation of water treatment would yield to less costly disposal well alternatives



Surface Use Must Benefit the Mineral Estate

- A mineral interest owner is prohibited from using the surface of one mineral estate for the benefit of another. Since the purpose of a mineral lease is to enable the mineral interest owner to carry out mineral exploration, production, and development activities on the subject tract, it follows then that use of the surface cannot be for the benefit of activities or any other purposes that do not benefit the mineral estate of the subject tract (*i.e.*, another tract of land).
- Where express terms of lease permit pooling, mineral interest owner rights of surface use must be for the exclusive benefit of collective mineral estate.



- Mineral interest owner only has the right to dispose of water in injection wells located on the surface from which the water was produced and does not have right to dispose of water on land covered by another lease.



- Use of treated wastewater is confined to that which benefits the mineral estate of subject tract and lands pooled therewith.
- Treated wastewater can only be used to hydraulically fracture additional wells or used in other oilfield operations so long as it benefits the subject mineral estate and lands pooled therewith.
- Use of treated wastewater would be prohibited and unreasonable to extent it benefited a tract other than the tract from which was produced or for purposes unrelated to effectuating the mineral lease.

BREACH OF THE IMPLIED RIGHT OF SURFACE USE

A successful claim for breach of the implied right of surface use may result in the payment of damages by the mineral interest owner to the surface estate owner, in addition to the mineral interest owner being enjoined from future use in violation of the implied right.



- Surface owner may be entitled to damages for all of the wastewater used without consent.
- Absent language to the contrary, mineral interest owners incurring the expense of water treatment technologies are prohibited from benefiting from the use or sale of treated wastewater unrelated to the mineral lease.
- Texas mineral owners unlikely to adopt water treatment technologies.



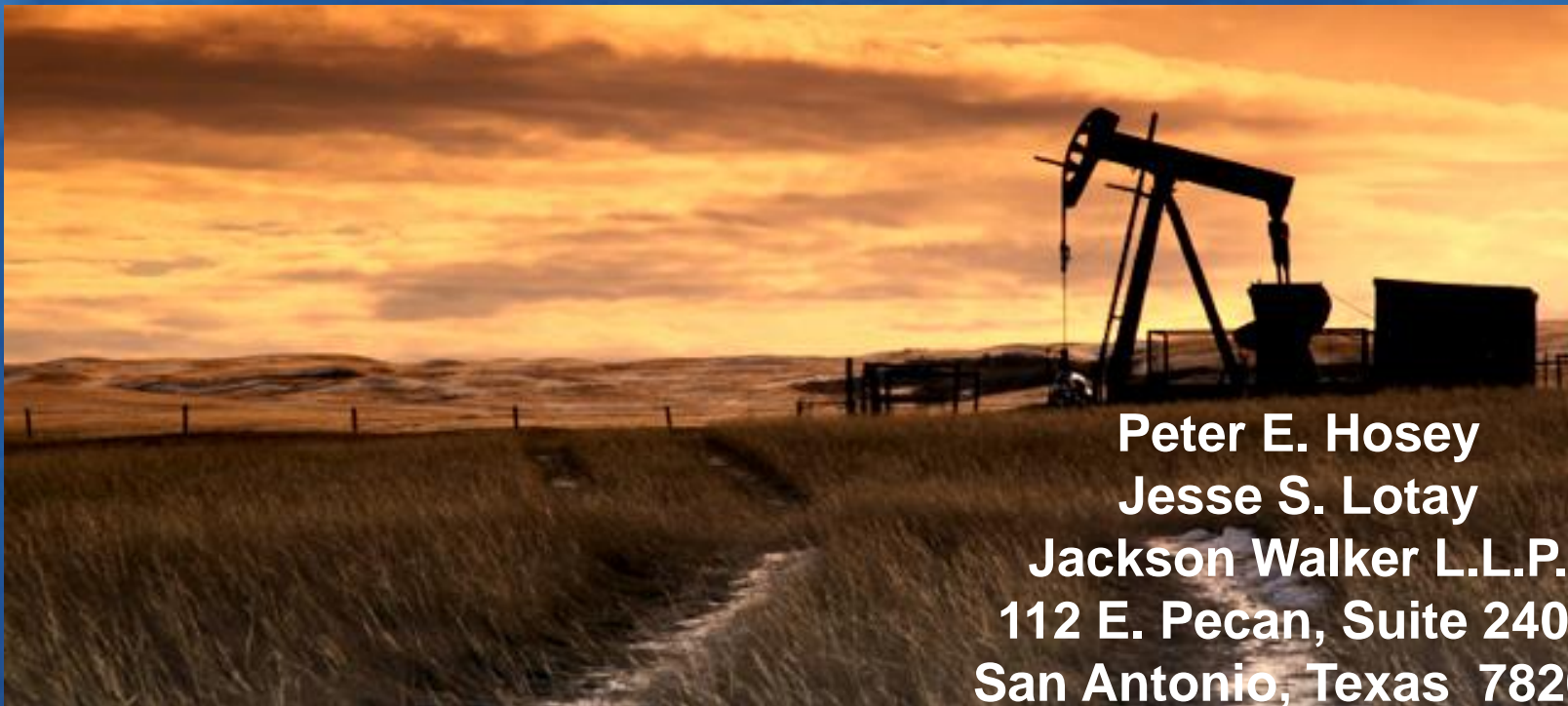
Conclusion



- Water treatment technologies create value where none was thought to exist before, and who stands to benefit is of paramount significance.
- Mere surface use provisions are not enough to enable a mineral interest owner to fully benefit from the value created by water treatment technologies.
- Mineral interest owners are encouraged to negotiate outright purchase and ownership of water as part of surface use agreement.

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