

Section 1: Short Answer (50 words or less for each question)

1. Ownership of land is gained through accretion and/or alluvion, which in this case would be the river depositing soil midway through the property at a bend. Ownership can also be gained through reliction, which is land being exposed due to water receding or shrinking; this change must be permanent.
2. Ownership of land is lost through erosion, like at the north end of the property where soil is being slowly washed away. Again, the change must be gradual and imperceptible.
3. Alluvion is the increase in land caused by the gradual deposition of solid material from the operation of natural causes.
4. Subsidence is when water submerges previously exposed land due to the land beneath the property sinking. In this case, the water being pulled from the underground through wells is causing the land to sink.
5. The sudden loss or addition of land by the action of water is known as avulsion.
6. The addition of dry land from the drying up of water is known as reliction.

Section 2: Analysis (150 words or less for each question)

1. Carol should be concerned about the gain or loss of title on portions of her property (through erosion, accretion, and alluvion), developable land due to subsidence and reliction, regulations regarding water use load, and the prior conveyance/ leasing of mineral rights and impact on the amount of water that can be utilized. The river changing course over time has caused erosion at the north end of the property and alluvion midway through the property at a riverbend. Water being extracted from underground has caused subsidence and the lake has moved inward impacting potential developable land. The pond has also shrunk (reliction) exposing an additional half acre. The mixed-use development will cause a substantial increase in water usage which could be subject to regulation (Edwards Aquifer) and potentially cause additional subsidence of land. She also needs to review the conveyance of mineral rights regarding reservation of water for residential purposes.
2. As the river changed course over time, the north end of the property saw soil being slowly washed away due to erosion which would result in loss of title/ownership of this loss of land. However, some of this soil was being slowly deposited midway through the property at a bend in the river by alluvion which would result in gain of title/ ownership of this gain in land. She likely gained and loss title in the two areas, but we are unsure if this is a net positive or negative in overall title/ ownership of land.
3. As the lake moves inward and decreasing exposed land, the question is whether this is due to erosion or subsidence (sinking) of land. If this is deemed erosion (imperceptible), then title would be lost. However, if this is likely due to subsidence of the land due to extraction of the underground water which would not result in loss of title. Either way, it impacts the amount of developable land as the case states the area impacted was envisioned for commercial development. The pond is an example of reliction as an additional half acre is exposed resulting in gain of title in this land. It also increases the amount of developable land.
4. The Edwards Aquifer is heavily regulated by TCEQ as a vital natural resource in the state of Texas. To protect its quality and sustainability there are many rules/ regulations which include, water quality, recharge, transition zones, protection of federally listed species, sensitive features encountered during construction, and other rules regarding construction restrictions and best

practices. Carol should work closely with TCEQ and local water authorities on specific permits and restrictions regarding construction, water usage restrictions, environmental regulation compliance, sustainable building practices, geological assessments, and other rules regarding the aquifer. She should likely hire a consultant that specializes in the rules of Chapter 213 in Title 30 of the Texas Administrative Code and can advise her as she works with TCEQ. This will be a crucial aspect during the planning process of the development. TCEQ is especially concerned with the health and sustainability of the Edwards Aquifer.