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As a geologist versed in all things water, I have followed with interest Greeley's fascinating and innovative water system.

In the past we have looked exclusively west to obtain snowmelt runoff (surface) water for irrigation, industrial and municipal use, following Horace Greeley's prophetic charge to "Go West ...". Now, in 2021, the City of Greeley is looking to the north in Weld County at Terry Ranch to consider developing subsurface groundwater and storing water in the Upper Laramie Formation aquifer.

I have reviewed more than 200 pages of draft scientific, engineering and water quality/quantity data and plans. As a citizen of Greeley these past 40 years, and as a scientist familiar with subsurface aquifers, I consider it my duty to inform the public whether the proposed project is feasible and wise.

Regarding the need to develop substantial new source of water, please consider:

- Surface water supplies for Greeley and other communities in the Front Range will be inadequate, environmentally damaging, and very costly to fuel the economic development and population growth expected in coming decades.
- Mountain wildfires to our west seriously threaten surface water quality – subsurface water development and water storage below ground in aquifers is not threatened by mountain wildfires.
- Drought and low snowpack conditions from time to time will continue to plague us – subsurface supply and storage are not subject to evaporation losses and permitting delays affecting surface reservoirs.
- On the question of water quality available for development and storage, consider these attributes of the Upper Laramie Formation aquifer:
 - The thickest part of the water –producing zones is in the Terry Ranch parcel.
 - Conditions are excellent, both for getting water out and for recharging the aquifer when excess water is available.

On the all-important question of water quality, based on over 5,000 laboratory analyses of water from the seven existing wells throughout the Terry Ranch parcel, I find:

Overall quality of the water from the Upper Laramie Formation is very good, a result generally consistent with the Colorado Geological Survey's publications "[Colorado Groundwater Atlas](#)" and the older study, "Atlas of Groundwater Quality."

One water quality parameter will need to be treated for removal, according to the design plan: uranium, which is a health hazard at levels above 30 parts per billion. Even though the produced water is very rarely above those EPA and Colorado state limits, the plan is to remove uranium to the "non-detect" level before the produce water enters Greeley's water system.

I reiterate that the safeguards planned for water quality are prudent and more than adequate to deliver safe and high-quality water from the Terry Ranch project. Some have expressed concern about the uranium, but I find those concerns unfounded based on the evidence and the water treatment plan.

Water won't come from the underlying higher-Uranium Fox Hills Formation. I was initially confused on that point, so it is a common misunderstanding.

Likewise, the technical feasibility of delivering high-quality water in sufficient quantities is a good bet to supplement Greeley's future water needs.

The year 2021 celebrates the American Geological Institute's theme, "Water Today and for the Future." More than 50 natural resource scientific societies encourage us in "...learning how to understand, conserve, and protect water, perhaps Earth's most vital resource."

Greeley has long been an innovative pioneer in securing excellent water here in the arid West. I expect the Terry Ranch project will contribute substantially to that legacy and at reasonable cost.

--This piece was originally published in the Greeley Tribune as an opinion piece. Dr. Hoyt has given express permission to reprint it here as an endorsement for the Terry Ranch project.