

“It is more than just a hole in the ground...”

Water well drilling up 25% in 2020 despite the pandemic

The pandemic did not curtail the need to access and use fresh groundwater or hinder the well drilling industry in Utah. During 2020, 573 new water wells were drilled, which is 112 more than 2019 and an increase of about 25%. It appears that 2021 is following the same increasing trend inasmuch as water wells are up more than 40 percent from last year in this first quarter. Economy-driven types of non-production wells regulated by the Division of Water Rights such as closed-loop groundsource heat pump wells, dewatering wells, and cathodic protection wells are also on the increase. Many licensed well drillers report that they have never been busier with backlogged work from weeks to months out. The increase in well drilling activity is likely attributed to a stable state economy, ongoing drought conditions, and a mild winter. The statement by Benjamin Franklin “When the well is dry, we know the worth of water” still rings true.

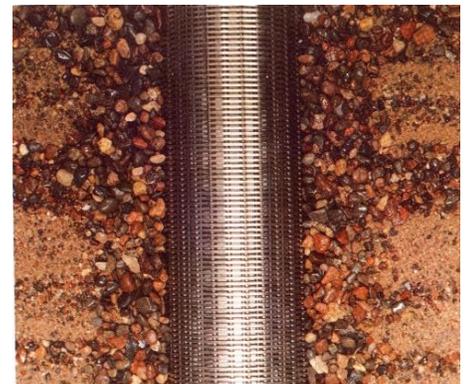
The Utah Division of Water Rights orderly administers the appropriation and distribution of the State’s valuable water resources. A key component of that administration is the regulation of well drilling activities and the licensing of well drillers and pump installers as authorized by [Section 73-3-25 UCA](#) (statute) and [R655-4 UAC](#) (well rules). Because groundwater resources are both valuable and vulnerable, the legislature tasked the Division (having expertise in groundwater protection and use) with licensing and regulating well drillers and pump installers (rather than the Division of Occupational and Professional Licensing). This well regulation and driller licensing approach helps safeguard the physical integrity of and prevent pollution of aquifers within the state; prevent wasting of water from flowing wells; obtain accurate records of well construction operations; and insure compliance with the state engineer's authority for appropriating water.

Click [here](#) to read more about the Division of Water Rights Well Program.

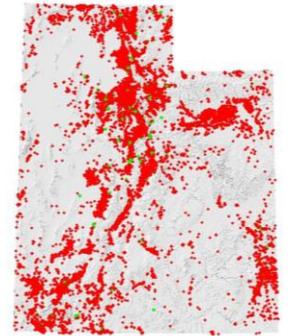
The Division of Water Rights regulates and tracks all water well activities (i.e., drilling, construction, deepening, repairing, renovating, cleaning, development, testing, disinfection, pump installation/repair, and abandonment of water wells), including the licensing and regulation of well drillers and pump installers. In addition to water wells (e.g., public supply, domestic, stockwater, irrigation, industrial/commercial wells, open loop heat pump, etc.), the Division of Water Rights also regulates many types of non-production wells (e.g., monitoring, piezometer, cathodic protection, closed-loop groundsource heat pump, inclinometer, and dewatering, etc.) if they intersect an established aquifer.

Licensed water well drillers and pump installers must perform the aforementioned activities according to the well rules and submit official logs (well, pump, & abandonment) to the Division. In Utah, a person cannot drill their own well without a license (unless it is 30-feet deep or less), but they can do their own pump work on their own well on their own property and they must have a water right. On average, the Division licenses and regulates 150 licensed well drillers, 125 Licensed Pump Installers, and 250 Registered Operators (works under a licensed driller or pump installer similar to an apprentice status). To view a listing of licensed drillers and pump installers and see their current and past well activity and logs click [here](#).

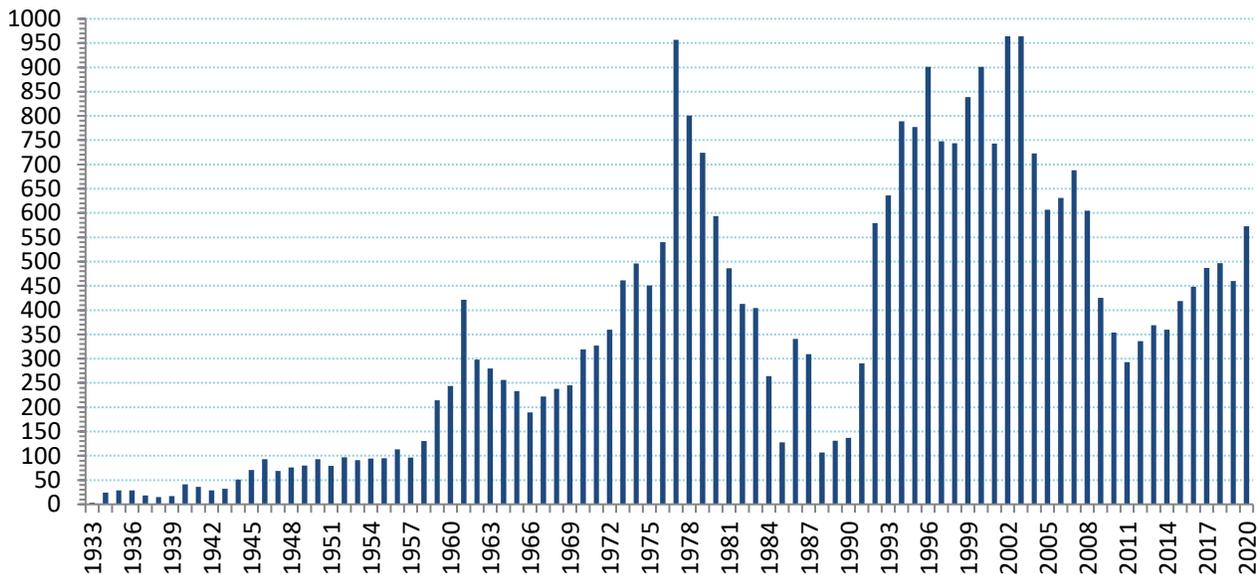
During 2020, 573 new water wells were drilled, which is 112 more than 2019 and an increase of about 25%. It appears that 2021 is following the same increasing trend inasmuch as water wells are up more than 40 percent from last year in this first quarter. The majority of that increase was with the drilling of domestic water wells. Most water wells in the



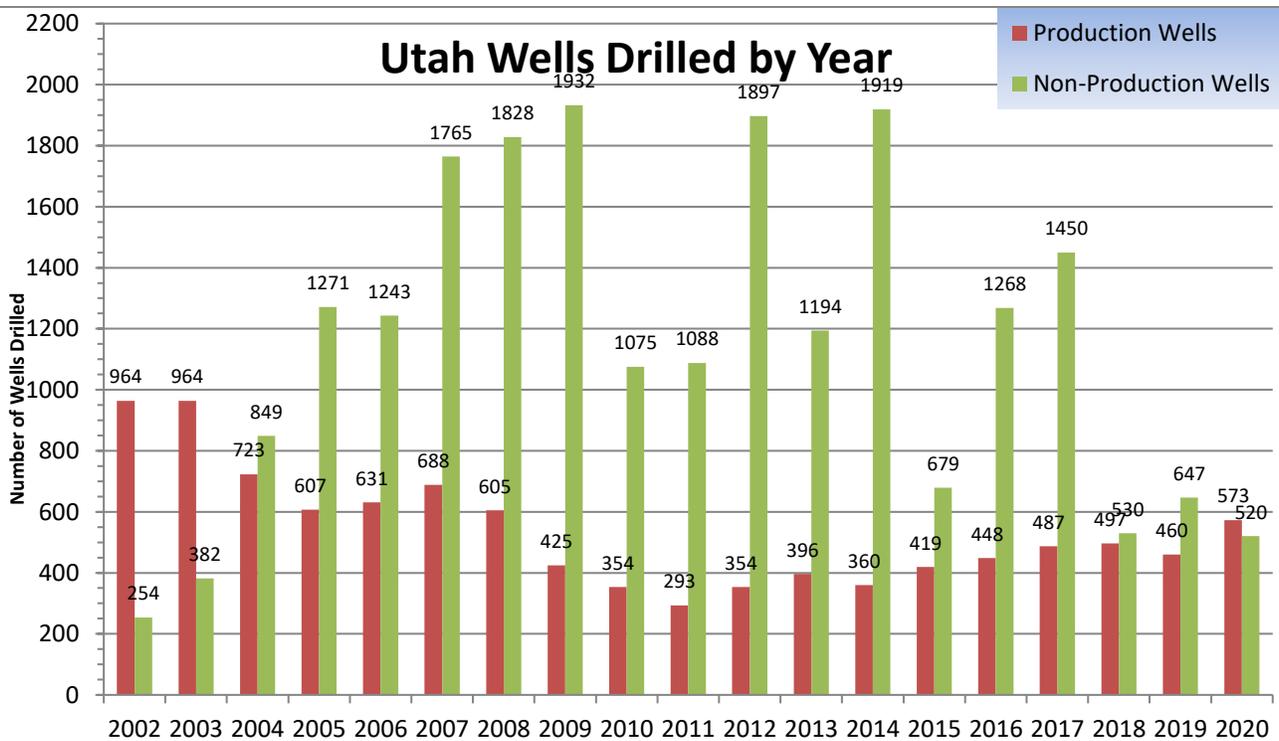
State of Utah are drilled using some form of air rotary (64%) with a fair amount still being drilled by mud rotary (24%) and cable tool (12%). Small diameter water wells (6-inch diameter or less) make up about 75% of the new wells drilled. The five water right areas with the most active well drilling include areas 43 (Uinta Basin at 13.2%), 35 (Counties of Weber, Morgan, Summit at 12.1%), 65 (Sanpete County at 6.7%), 71 (above Milford to Beryl/Enterprise area at 6.7%), and 15 (Tooele-Rush Valley area at 6.3%). For detailed drilling statistics year by year including new wells by type (e.g., domestic, irrigation, stock, public supply, commercial/industrial, etc.), by water right area, by drilling method, by well diameter, and by well-related activity (e.g., new, replace, repair, deepen, pump work, abandon, etc.) click [here](#).



Number of Production Wells Drilled by Year



Utah Wells Drilled by Year



At about 1050 million gallons per day, groundwater from wells comprises approximately 27% of all freshwater use in Utah. Groundwater from wells comprises about 57% of public supply water, and nearly 100% of individual household water (self-supplied). About 18% of irrigation water comes from wells, and about 92% of water used for livestock/aquiculture comes from groundwater wells. Industrial (self-supplied) water use consists of about 70% groundwater, and about 50% of water for mining purposes comes from groundwater.¹

Administrative well requirements include driller licensing and renewal, authorization to conduct regulated activity, start cards, well logs and other reports, on-site requirements, process for issuing on-site cease and desist orders, rule violations/infractions, penalties and adjudicative proceedings, and the non-production well approval process. Well construction requirements include verifying well locations, process for issuing variances, approved products, materials, and procedures, well casing and casing joints, surface and interval seals, gravel-packed wells, use of safe down-hole chemicals/materials, aquifer protection, aquifer commingling/cross-contamination, well disinfection, surface completions, pitless adapters/units, and well development and testing.

The Rules also contain a section for requirements specific to certain well types such as public supply wells, cathodic protection wells, closed-loop and open-loop groundsource heat pump wells, and recharge and recovery wells. The Rules also include sections with specific requirements for well renovations, monitoring wells, pump installation/repair, and well abandonment.

The process of monitoring and compliance checking is initiated with the submittal of the start card. Knowing when, where, and who is drilling a well allows the Division to compliance inspect the operation at any time. Moreover, the driller is required to submit well log within 30 days of well completion. Each well log is reviewed for accuracy, completeness, and compliance with the well construction rules by a qualified well drilling specialist.

The Division's well program manager has primary responsibility for the implementation of the Rules including licensing/registration and renewals, start card and log review, management of the well drilling database (start cards, logs, licensees), licensee continuing education, non-production well application review/approval, well-related public inquiry/complaints, interstate coordination, interagency coordination, staff training, maintain and update well rules, inspections, and enforcement. The well program manager is the primary well inspector and on average inspects approximately 30 percent of the wells drilled per year. Occasionally and as the need arises, staff in regional offices conduct inspections. Over the last decade, Utah has averaged 480 production wells and 1100 non-production wells per year.



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¹ Dieter, C.A., Maupin, M.A., Caldwell, R.R., Harris, M.A., Ivahnenko, T.I., Lovelace, J.K., Barber, N.L., and Linsey, K.S., 2018, Estimated use of water in the United States in 2015: U.S. Geological Survey Circular 1441, 65 p., <https://doi.org/10.3133/cir1441>. [Supersedes USGS Open-File Report 2017-1131.]