

REQUEST FOR RECONSIDERATION

This document serves as a formal request for reconsideration of the decision by the Utah State Engineer, made on January 16, 2019, to approve EID permanent change application a44045, including 5 new well sites in the Burr Fork drainage in Pinecrest Canyon, on the following grounds:

IMPAIRMENT OF EXISTING WATER RIGHTS

1 - Main Canyon

The Utah State Engineer has received numerous letters of private well owners in the main canyon reporting water quality and quantity impairments and wells going dry, attributed to commercial wells operated by EID, yet in its memorandum decision approving permanent change application a44045 these concerns are not adequately addressed.

Utah code 73-3-3 authorizes the State Engineer, upon reviewing the change application, to determine whether the proposed change would result (or has resulted) in quantity impairments of other water rights.

Quantity impairment under Utah code 73-3-3 (1)(c)(i) is defined as any reduction in the amount of water a person is able to receive in order to satisfy an existing right to the use of water that would result from a change application, including diminishing quality in the source of supply and change in timing (i.e. impairment during summer months).

In its memorandum decision the Utah State Engineer bases approval of EID's permanent change application upon inability to connect concerns expressed by residents with EID's change application. This finding is hardly surprising since there is no hydrologic data available for review. However:

Utah code 73-3-3 (5)(a) states that the applicant (EID) has the burden of proof to provide evidence to support a reasonable belief that the change application will not cause existing rights to experience quantity impairments.

EID has spent 14 million dollars on development of reservoirs, wells and a water distribution system, but has not invested in any hydrologic studies or computer models that provide insight on the effects of commercial wells on groundwater flow patterns, which are likely complex and dynamic and may particularly affect parts of the canyon where topographic divides are less pronounced and the stream is losing ground. There are also no studies indicating effect of existing EID wells on aquifers and streamflow and how to protect water resources in the main canyon. Could it be they have not done so because they do not want to find data demonstrating interference?

Bill Bowen, EID trustee from 1996-2005, declared in sworn testimony on July 9, 2018 that EID board members were informed - by EID hydrologist Jack Barnett - that large diameter wells would reduce the Emigration Canyon aquifer and dewater smaller wells. So while EID was aware of potential interference problems before developing the water system left to them by the Boyer company, they did not take any action to determine the

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extent of the problem or how to find ways to mediate the effect of their commercial wells on existing water rights and water resources.

2 - Burr Fork Drainage

In the 2000 Emigration Canyon Hydrologic Report, exploring feasibility of 5 new well sites in the Burr Fork drainage, authors Adolph Yankee and EID hydrologist Don Barnett lament the lack of hydrologic data available and recommend “long term monitoring of well water levels and production, long term monitoring of water quality, additional well aquifer tests, tracer tests and geochemical and isotopic studies of groundwater residence times (to)...better understand fluid flow patterns, estimating safe yield and protecting water resources.” EID did not follow through on any of these recommendations.

Based on Utah code 73-3-3 (5)(a) and Utah code 73-3-3 (1)(c)(i) the Utah State Engineer should require EID to provide data that shows that the 5 new wells in the Burr Fork drainage will not undermine the ability of residents in Pinecrest Canyon to access the volume of water necessary year-round to satisfy their water rights.

Based on Utah code 73-3-8 (1)(a)(ii) the Utah State Engineer should reject the 5 well sites if evidence is found they may interfere with existing water rights.

PRIORITY OF EID’S WATER RIGHTS

EID’s water right was originally deeded at the mouth of the canyon and later moved upstream. When a water right is moved, there is potential interference with previously established and approved water rights.

If the Utah State Engineer finds the change application impairs or will potentially interfere with previously established and approved water rights, these rights have priority over EID.

As evidenced by EID’s presentation during the hearing on December 19, 2018, EID claims the priority date of their water right (1872) entitles them to declare ownership of all water in the canyon. However, that statement is not correct in case of impairment: Bill Bowen, EID board member from 1996-2005, in a sworn statement on July 9, 2018, stated EID trustees discussed in board meetings that EID did not have a senior priority to water rights because of the change in the point of diversion. If EID’s water diversions impair previously established and approved water rights of private well owners, the Utah State Engineer has a regulatory obligation and mandate to protect those rights since they have priority over water rights owned by EID.

EFFECTS OF EID WELLS ON STREAMFLOW

In their Water Management Plan of 2002, EID acknowledged that all present and future water diversions impact the canyon’s water resources and recognized the importance of streamflow for residents with wells along the stream, who depend on streamflow for recharge of aquifers.

Recognizing that existing and future water depletions impact the flow of Emigration Creek, EID adopted a creek protection policy to maintain minimum streamflow in all but the worst drought years. The minimum streamflow goal adopted was 1.6 cfs. However, during the hearing on December 19, 2018, Dr. Hansen reported EID's minimum streamflow goal was not met in 10 of the last 17 years. Decreased streamflow over the last 17 years - not just during the hot summer of 2018 - is a significant finding and warrants investigation by the Utah State Engineer.

Utah code 73-3-8 (1)(b) states that if the Utah State Engineer, based on information in its possession... has reason to believe the application will unreasonably affect ...the natural stream environment... the state engineer shall withhold approval or reject the application until the state engineer has investigated the matter.

The Utah State Engineer has a legislative mandate to look into this problem, since streamflow is the life-blood of the canyon and is essential for protection of wildlife, flora and fauna. As outlined in the 1966 Barnett master thesis on groundwater hydrology of the canyon, streamflow is also essential for proper functioning of private wells along the stream. The capacity of these wells is 50% or less compared to wells in other areas of the state. The ability to draw water from the fragile aquifers these wells rely on is dependent on shallow groundwater flow, streamflow and related artesian pressure.

POTENTIAL INTERFERENCE PROBLEMS IN THE BURR FORK DRAINAGE

The 5 additional wells EID plans to drill in the Burr Fork drainage, as documented in the 2000 study of Yonkee and Burnett, are located in a region of high elevation (>8000ft) with high precipitation levels, considered particularly important for recharge of aquifers and runoff to streams.

In its memorandum decision of October 8, 1982, the Utah State Engineer specifically denied diversion of water from the Burr Fork drainage due to potential interference problems.

If the Utah State Engineer determined in 1982 an EID well in the Burr Fork drainage would cause potential interference problems, its memorandum decision to approve 5 wells in the same area 37 years later does not appear to comply with statutory safeguards put in place to prevent impairment of pre-existing water rights.

The decision to allow 5 commercial wells in this sensitive area is especially surprising since changing weather patterns related to climate change, as discussed by Dr. Hansen during the hearing on December 19, 2018, is affecting recharge of aquifers, which influences the amount of water available in private wells. Climate change is also causing prolonged periods of drought affecting the ability of private well owners to access the volume of water necessary year-round to satisfy their water right. Water rights owned by private well owners, as mentioned above, have priority over those belonging to EID in case of impairment and require protection by the Utah State Engineer.

HEALTH THREAT DUE TO EID WELLS IN THE BURR FORK DRAINAGE

Unlike impairment of water rights in the main canyon, there is good evidence of increased risk of drinking water contamination as a result of the 5 EID wells in the Burr Fork drainage. The 2000 study by Yonkee and Barnett warns pumping by commercial wells in areas of steeply dipping fractured bedrock aquifers, found in the Burr Fork drainage, lowers the water table below the stream, resulting in leakage of surface water into the ground. If surface stream and shallow groundwater are contaminated with E. coli bacteria - attributed to improperly constructed or leaking septic tanks - the chance of contamination of wells increases. Water molecules in fractured steeply dipping bedrock tend to travel more quickly with less time for filtration down to deeper ground levels where they can infiltrate wells, threatening the health of private well owners.

Under Utah code 73-3-8 (1)(a)(III) change applications that pose a threat to public welfare should be rejected.

FINANCIAL FEASIBILITY OF EID'S WATER SYSTEM

EID spent roughly 14 million dollars on a water system currently serving close to 300 homes. Of the 4 wells operated by EID, the Upper Freeze Creek well, built in 2014 at a cost of 2 million dollars, is its sole reliable source of water and meets nearly 90% of water demand. During the fall of 2018, EID's manager announced possible water restrictions to its costumers if dry summers like 2018 continue, a pretty good bet considering predicted changes in weather patterns related to climate change.

The 2000 study by Yonkee and Barnett blames loss of productivity of Freeze Creek well #1 and #2 on limited storage ability of fractured bedrock aquifers with low primary porosity, which results in large seasonal fluctuations in water levels and relatively rapid lowering of water levels during pumping. Prolonged or high rates of pumping, especially during times of drought, damages aquifers: Fractures in the bedrock that transmit water to the well close down and do not completely reopen once water levels in the well regain its normal level, permanently reducing efficiency. EID's Brigham Fork well, built in 2004, failed Health Department water quality standards and is no longer operational.

In the 2000 study by Yonkee and Barnett, the authors warn that long-term yield of the aquifers commercial wells in Emigration Canyon rely on cannot be determined, which is a major concern and puts long-term viability of EID's water system into question. Considering uncertain long-term yield of aquifers, failing wells and a leaking reservoir, an independent study assessing financial viability of EID's water system is indicated to see if it is a realistic long-term solution for providing water in Emigration Canyon.

Under Utah code 73-3-8 (1)(aIV) change applications should be rejected when there are concerns about financial feasibility.

ECONOMIC IMPACT OF EID'S WATER SYSTEM

EID's water system is posing an increasing economic strain on residents in the canyon:

1. EID appears to be creating their own demand for water connections. Interference of EID wells with streamflow and proper functioning of private wells may lead to quality and quantity impairment and eventually to wells running dry. At that point private well owners face the choice between either putting more money into their well or connecting to EID - at a cost of around \$15,000 per connection - which poses an economic strain on residents.

2. When EID took over operation of the water system from the Boyer company they assured residents only those using their system would pay for it. That statement is no longer accurate. EID's water system is financed by taxation of Emigration Canyon property owners - connected or not - to the maximum extent possible. When EID's debt ballooned to 14 million dollars after building their latest 2 million dollar well in 2014, EID implemented additional base and impact fees to service their outstanding loans. As a result, many home owners are paying fees and taxes for a system they do not benefit from and that only provides services to less than half of the homes in the canyon.

3. It should be noted that EID has no plans to provide water to all canyon residents. Current build-out plans are for servicing a total of around 500 homes. EID currently provides water to just under 300 homes and has firm contractual obligation for 97 additional lots/homes, which leaves about 100 additional water connections. Even if all of those connections would go to existing homes along the creek, it would leave over 200 homes dependent on private wells. These private well owners have a high likelihood of experiencing impairment due to EID water diversions and may be forced to spend thousands of dollars in upgrades to maintain productivity of their wells. Meanwhile, they are charged for EID's costly water system through taxes and fees for the next several decades. Private well owners are essentially charged twice. They first pay for a water system that is depleting their aquifers, and then they pay again for upgrading their wells.

Under Utah code 73-3-8 (a)(III) change applications should be rejected when there are concerns about their economic impact.

LAND SPECULATION

The federal government provided EID with its first 1.8 million dollar loan, based on the purported goal of providing safe drinking water to homeowners living along the stream (described as economically disadvantaged communities). Expansion of EID's infrastructure and distribution system increased federal loans over time to a total of 6.3 million dollars. One of the conditions for the loans was that federal money could not be used for additional development.

Bill Bowen, EID trustee from 1996-2005, declared under sworn testimony on July 9, 2018 that EID was not to use the system to provide water to facilitate new development and argued against building the 1,000,000 gallon reservoir, stating that this was facilitating new development and was contrary to federal law and contrary to the purpose and requirements of the federal funds.

Considering the different areas of new homes in the canyon serviced by EID, it appears conditions for the federal loans were not met as required by the federal government which has led to a false claims lawsuit against EID and land developers. Availability of water and land speculation have gone hand-in-hand in Emigration Canyon. Additional development of lots in the canyon is ongoing, despite calls for a moratorium due to traffic concerns, strain on available water resources and threats to streamflow, wildlife, flora and fauna.

Under Utah code 73-3-8(a)(V) change applications should be rejected if there is reason to believe they will be used for purposes of speculation.

EID'S WATER MANAGEMENT PLAN

In EID's Water Management and Conservation Plan, published in 2002, the two main goals adopted were to maintain minimum streamflow of 1.6 cfs (not met in 10 of the last 17 years) and to limit the total number of homes in the canyon - connected to EID or private wells - to a maximum of 700 homes (objective abandoned). The 700 build-out limit is supported by the Emigration Canyon General Plan of 1999. There are currently almost 700 homes in the canyon. EID's latest build-out plans will exceed the 700 number by up to 200 homes, which may further decrease streamflow, threaten water resources and decrease recharge of fragile aquifers already affected by changing weather patterns related to climate change. EID has not only failed to meet its own water management goals, but, as demonstrated by their response to residents concerned about the health of the creek, has shown no interest in implementing a sustainability plan required to protect streamflow.

Under Utah code 73-3-8(a)(VI) change applications should be rejected without implementation of a groundwater management plan.

EID MONITORING WELLS

EID recently provided data from five monitoring wells providing depth-to-water table, i.e. the distance in feet between the surface of the ground and the start of saturated ground levels. Data were only collected from four wells, since one of the wells has gone dry - a possible indication of things to come for private well owners.

Data from the monitoring wells vary greatly during the year - shallower during spring runoff and immediately after snowmelt, deeper during summer and fall, and illustrate wetter and dryer years. Monitoring wells also provide information on water storage levels over time. Since the water table depth has roughly remained the same in the last 27 years, EID argues their commercial wells have not caused impairment of private wells along the stream. However, while water storage levels provide information on the overall groundwater reservoir and are used to estimate safe yield, they do not provide information on availability of the water source. Impairment is indicated by decreased water quantity, quality and water availability throughout the year to satisfy a water right. Water quantity is closely related to refill of aquifers while water quality depends on

proper functioning of private wells, which is influenced by the close interaction between shallow groundwater, stream flow and related artesian pressure.

Improving things like depth, diameter and perforation levels of private wells may very well increase access to saturated ground levels and improve well production, but it is questionable if well improvements costing thousands of dollars would constitute access to water that is "reasonably available" as mentioned in Utah code 73-3-3 (1)(c)(ii).

CONCLUSION

Based on the information provided above, there are numerous statutory reasons to deny or provide additional conditions on approval of permanent change application a44045 as described in Utah code 73-3-8 (6)(b) to prevent further impairment or potential interference with pre-existing water rights.

In particular, and most importantly, the Utah State Engineer should require EID to conduct scientific studies to determine if their water diversions result in quantity impairment of pre-existing water rights, as mandated in Utah code 73-3-3 (5)(a).

If, after further study, impairment of water rights by EID's water system is established, the matter of priority will need to be considered. Since EID moved their water right from the mouth of the canyon upstream, water rights of private well owners with previously established and approved water rights have priority over those owned by EID, which should be taken into consideration when considering any type of plan to mitigate the problem.

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