



STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER RIGHTS

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M E M O R A N D U M

TO: Earl M. Staker, Deputy State Engineer
FROM: Edward D. Feldt, Area Engineer, Utah Lake and Jordan River Drainage
DATE: February 7, 1980
RE: State Engineer's Policy on Groundwater Appropriations in Salt Lake County

This memorandum expresses my understanding of the State Engineer's present policy regarding applications to appropriate groundwater in Salt Lake County and gives my interpretation of the reasons for his present policy. Some of the opinions expressed could be my own and not that of the State Engineer, but I hope that this is not the case. Also, some of the stated opinions may concur with the State Engineer's, but the position expressed may not have sufficient support by present law and should not be stated to the general public.

G E N E R A L P O L I C Y

In Salt Lake County the State Engineer is generally approving new appropriations of groundwater throughout Jordan Valley (Salt Lake Valley), provided that the applications to appropriate meet the guidelines of the statutes. This policy is less restrictive than that which is in effect on the upper reaches of the Utah Lake and Jordan River drainage because investigations and present conditions indicate that there is still a great deal of groundwater in Jordan Valley which can be placed to beneficial use, i. e., appropriated. Furthermore, it must be considered that the lowest point of groundwater discharge in Jordan Valley is into the Great Salt Lake, and hence is no longer available for "conventional" beneficial use. The State Engineer recognizes the potential problem of salt water intrusion from the Great Salt Lake which can occur from excessive diversion of groundwater, and he will act accordingly on further applications to appropriate groundwater when there are indications of a developing problem.

The remaining physiographic part of Salt Lake County beyond Jordan Valley is comprised of portions of the Oquirrh and Traverse Mountains and the

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Wasatch Range which are the drainage areas for the streams flowing into Jordan Valley. Many of these streams are perennial and their waters have been considered fully appropriated for a long time. Furthermore, the base flows of these streams are derived principally, or entirely, from groundwater influent to their channels. In view of this, the State Engineer will generally not approve applications to appropriate groundwater in the mountainous areas of Salt Lake County. This specifically includes most of the Wasatch Range, which is drainage for the various Wasatch streams, and the southern portions of the Oquirrh Mountains and the western portion of the Traverse Mountains, which are the drainage areas for Bingham, Butterfield and Rose Creeks. This policy is somewhat general and does not exclude the possibility of approving or rejecting a particular application to appropriate groundwater in a mountainous area if site-specific geohydrology indicates that there will or will not be an impairment of existing water rights.

The above-discussed policy of the State Engineer regarding groundwater appropriation in Salt Lake County is general. Present policy in Jordan Valley imposes certain restrictions in some areas, and these will now be mentioned.

S P E C I F I C P O L I C Y

Southwestern Salt Lake County

This area extends southerly from the middle of Township 3 South (approximately 11000 South Street) to the Salt Lake County-Utah County line. It is bounded on the west by the Oquirrh Mountains and on the east by the Jordan River. Excluded from the area are the extreme south and west ends respectively of the Oquirrh and Traverse Mountains as has been noted above under the general policy. Groundwater recharge in this area is principally from precipitation falling on the Oquirrh and Traverse Mountains, and the magnitude of this precipitation is on the average substantially less than that falling to the east and northeast on the Wasatch Range. Furthermore, many applications to appropriate large quantities of groundwater in this area for irrigation, domestic, and municipal uses were filed in the late 1950's and early 1960's, and ultimate development under these applications has not yet been completed. Also, this is the area of Salt Lake County where there is the greatest demand for private water wells, which is evidenced by the fact that the majority of applications filed with the State Engineer to appropriate groundwater for individual domestic use are received from here because there is no other feasible water supply available.

In view of the foregoing, it is the opinion of the State Engineer that there is rather limited unappropriated groundwater available in this part

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of the County and he believes that the best public interest should be strongly considered in allocating this resource. Consequently, the policy indicated in the following has been adopted by the State Engineer.

In southwestern Salt Lake County the State Engineer has for approximately the last 15 years been considering for approval only those applications which meet the following criteria:

1. Flow of water to be appropriated does not exceed 0.015 second-feet.
2. Water is to be used for the domestic purposes of one family and/or limited stockwatering.
3. Extent of domestic-related irrigation use for lawn and garden does not exceed 0.25 acre.
4. Or use of water is in very small commercial or industrial operations where the principal purpose is to provide sanitary facilities for employees.

The above-stated policy is subject to future review and change by the State Engineer as developments under large pending applications to appropriate water finalize and resultant groundwater conditions are evaluated. It should be noted that all applicants holding such applications are presently being required by the State Engineer to make a satisfactory showing of due diligence toward completion of their appropriations as required under Section 73-3-12, Utah Code Annotated, 1953, as amended, 1975. However, it should also be noted that there are pending applications to appropriate water for municipal use in this area and the above-cited statute requires the State Engineer to act favorably regarding extensions of time on such applications when it can be shown that the application is necessary to meet the reasonable future needs of the public.

Magna Area

This is a relatively small area situated east of Magna in the vicinity of where 2100 South Street curves southwesterly (as one proceeds westward) into 2300 South Street. An artesian condition exists here and historically wells have naturally flowed. There is some indication that large new wells drilled in this area have caused a diminution in the flow of older wells. Such an effect can also be demonstrated theoretically based on the aquifer characteristics.

It is the opinion of the State Engineer that natural artesian pressure should not be guaranteed as part of a water right (the second well drilled

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in an artesian basin could have an effect) if one is to make optimum development of a groundwater resource. Nevertheless, the State Engineer believes that he is restrained by present statutes and must therefore consider any impairment of established right to water use in making his decisions. Statutory changes and/or judicial precedence can establish future guidelines.

Therefore, the State Engineer has addressed the potential problem of interference to existing flowing wells in the Magna area by new proposed wells to be drilled here. Most of these existing wells have a relative shallow depth (200 feet or less). New applications to appropriate large quantities of groundwater (more than a few gallons per minute) are carefully considered and, if approved by the State Engineer, are subject to the requirement that the development of groundwater be made from an aquifer which is deeper than that from which existing wells divert water. The State Engineer believes that this may reduce the chance of impairment to existing groundwater rights.

Murray Area

The so-called Murray area comprises a region in-and-around the center of Murray City. Again it is an area where an artesian condition exists which has historically produced naturally flowing wells. Both observation and theoretical calculations demonstrate that generally a new well which diverts a large flow in this area can diminish the natural flow of a neighboring well.

This is an area where a municipal water supply is generally available for domestic requirements. It is also an area where there exists a relatively shallow unconfined groundwater table.

Most of the applications to appropriate groundwater in this area which are submitted to the State Engineer seek to appropriate water for the main purpose of watering lawns and gardens.

In view of the above-described situation in the Murray area, the State Engineer has generally approved applications to appropriate with the condition that development of water must be from the shallow unconfined aquifer. This places a maximum depth restriction on the well, depending on site-specific information, of between 30 to 75 feet. In many cases this policy has coincided with the applicant's wishes, i. e., he only wanted to construct a shallow well to provide irrigation water for his garden.

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Jordan Narrows Area

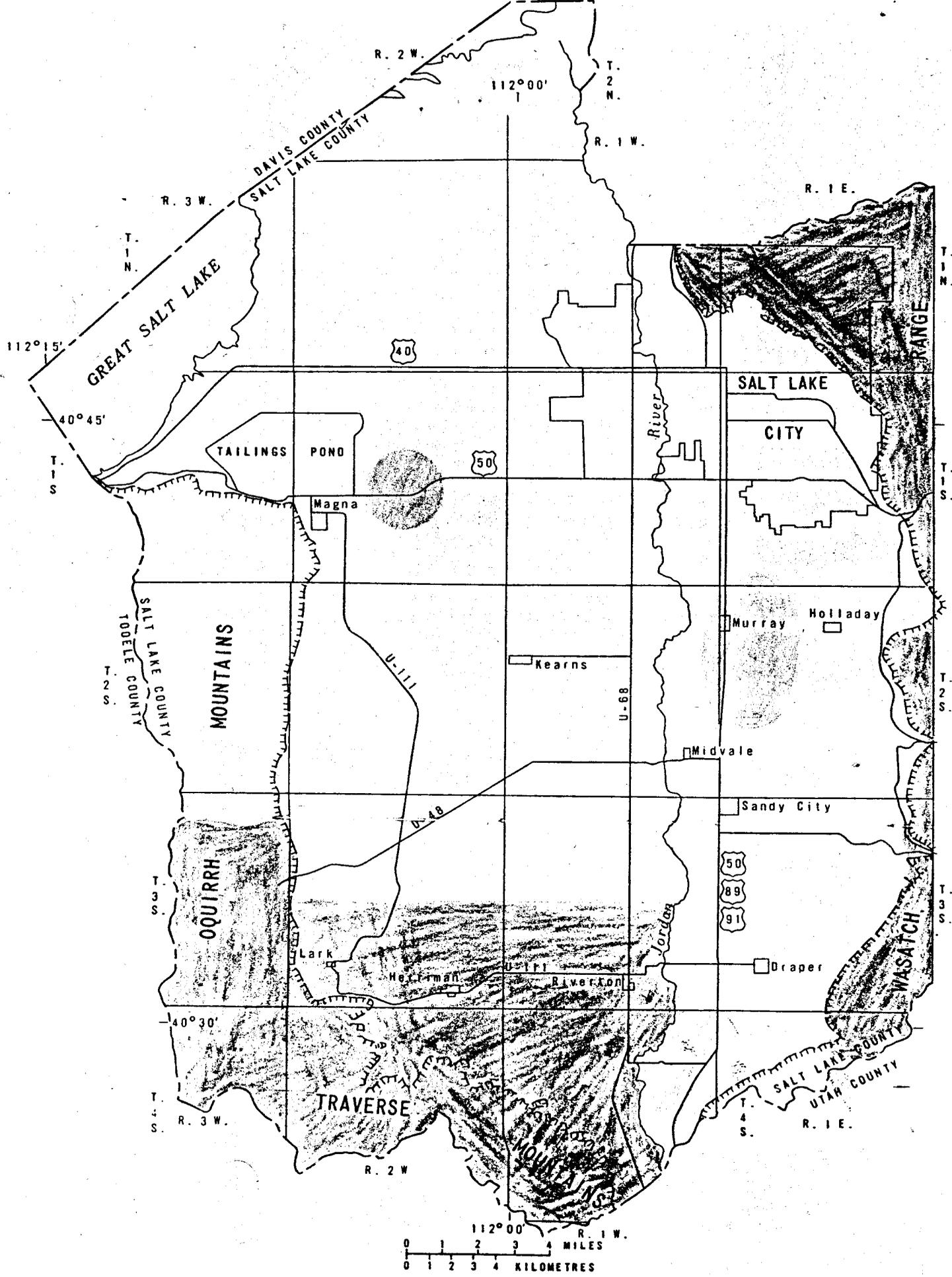
Conditions in this area are similar to those existing in southwestern Salt Lake County. Present studies by the United States Geological Survey indicate that there is a relatively small underflow from Utah Valley which recharges this area (approximately 2500 acre-feet annually). Also, recharge from precipitation falling on the Traverse Mountains is not a large quantity. There are several applications to appropriate large quantities of groundwater under which development has not been completed. One difference, however, is that there has not yet been a large demand for individual domestic wells.

It should also be noted that the northern part of this area contains a known low-temperature geothermal resource, and applications to develop this resource have been filed with the State Engineer (two applications are approved). Thus, intrusion of the hot water source on the cold water source, or vice-versa, must be considered by the State Engineer.

The above-mentioned conditions in the Jordan Narrows area have caused the State Engineer to adopt a somewhat cautious policy regarding further appropriations of groundwater. This policy may be summarized as follows:

1. Applications to appropriate small quantities of cold or hot water are generally being approved at this time.
2. Applicants seeking to appropriate a large quantity of cold water may be required to develop water from a deep depth.
3. Applicants seeking to appropriate a large quantity of low-temperature geothermal water may be required, after use of this water, to return it to the same source from which it was diverted.
4. A particular application may be held without specific action, or rejected, if the State Engineer has reason to believe that approval of the application would not be in the best public interest at this time.

Since the State Engineer must be cautious in approving any new applications to appropriate large quantities of groundwater in the Jordan Narrows area, it is quite possible that he may hold all such applications filed in the future until development is completed and resulting groundwater conditions can be evaluated.



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