

**IN THE OFFICE OF THE STATE ENGINEER
OF THE STATE OF NEVADA**

IN THE MATTER OF APPLICATION 84003)
FILED TO CHANGE THE POINT OF)
DIVERSION AND PLACE OF USE OF THE)
PUBLIC WATERS OF AN UNDERGROUND)
SOURCE WITHIN THE TRACY SEGMENT)
HYDROGRAPHIC BASIN (83), STOREY)
COUNTY, NEVADA.)

RULING
#6335

GENERAL

I.

Application 84003 was filed by TRI General Improvement District (TRI) on June 27, 2014, to change the point of diversion and place of use of 1,000.0 acre-feet annually (afa) of water for quasi-municipal purposes, previously appropriated under Permit 65062. The proposed point of diversion is described as being located within the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 32, T.20N., R.22E., M.D.B.&M. The existing point of diversion is described as being located within the SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 10, T.19N., R.22E., M.D.B.&M. The proposed place of use is fully described in Exhibit A to the Application, which Exhibit is attached to and made a part of this ruling. The existing place of use is described as being located within the SW $\frac{1}{4}$ of Section 32 lying south of the Southern Pacific Railroad, the S $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 32, the S $\frac{1}{2}$ of Section 33, the S $\frac{1}{2}$ of Section 34, Section 36, all within T.20N., R.22E., M.D.B.&M.; Sections 1 through 5, and Sections 9 through 16, the N $\frac{1}{2}$ of Section 23, the N $\frac{1}{2}$ of Section 24, all within T.19N., R.22E., M.D.B.&M.; the S $\frac{1}{2}$ of Section 29, the S $\frac{1}{2}$ of Section 30, and Sections 31 and 32, all within T.20N., R.23E., M.D.B.&M.; Sections 5 through 8, the W $\frac{1}{2}$ of Section 9, the W $\frac{1}{2}$ of Section 16, Sections 17 through 21, 29 and 30, and the W $\frac{1}{2}$ of Section 22, all within T.19N., R.23E., M.D.B.&M.¹

II.

Application 84003 was timely protested by the Pyramid Lake Paiute Tribe (Tribe) on the grounds as summarized below:¹

1. The base right (Permit 65062) was one of twelve applications (Permits 65060 through 65071), which were granted pursuant to Ruling No. 5747, for a total

¹ File No. 84003, official records in the Office of the State Engineer.

- combined duty of 2,700 afa. Application 84003 seeks to change 1,000 afa, or 37% of the total combined duty of the twelve permits granted by Ruling No. 5747. Application 84003 involves matters not addressed during the hearing on the twelve prior applications, but which have since been addressed by the State Engineer; therefore, the new matters should be addressed through a hearing.
2. If granted, Application 84003 is highly likely to have a greater impact on the Truckee River than pumping from the existing well, as the application proposes to change 1,000 afa from the existing point of diversion located over 2½ miles from the river, to a proposed point of diversion located between ¼ to ½ mile from the river.
 3. The proposed point of diversion for Application 84003 is an existing well that is the point of diversion for Permit 61778, for which proof of beneficial use was due by July 26, 2002. The State Engineer should not continue to grant extensions of time for Permit 61778 and should not grant Application 84003 for any more water than has been put to beneficial use under Permit 61778.
 4. The proposed point of diversion for Application 84003 is an existing well, which is the point of diversion for Permit 61778. The lithologic log for Permit 61778 provides evidence of a direct connection between water that would be pumped from the well and surface water flows of the Truckee River.
 5. Permit Nos. 65060 through 65071 were granted conditioned on a monitoring plan to be submitted to the State Engineer. Application 84003 should not be granted until the monitoring plan required under Permit 65062 has been prepared and submitted to the State Engineer.
 6. In Ruling No. 5747-A, the State Engineer found that the Tracy Segment is a gaining stretch, gaining 11,000 acre-feet annually; however, the State Engineer did not consider dry year conditions and the impact of well pumping on the Truckee River during dry years such as the current condition. Current records show that the Tracy Segment has been a losing reach since August 2014, and the Tribe's Claims 1 and 2 are not being met, with groundwater pumping in the Tracy Segment being a contributing factor. Application 84003 will further diminish flows in the river in direct conflict with the Tribe's Claims 1 and 2.
 7. In issuing Ruling No. 5747, the State Engineer was disinclined to consider the protest ground that there was a surface to groundwater connection, affirming the

State Engineer's regulation of surface water and groundwater as separate sources. Since the issuance of that ruling, the State Engineer has more recently conceded the bright line distinction in treating them as separate sources is fading (citing Ruling No. 6290).

8. Granting the application would threaten to prove detrimental to the Tribe, to the purposes for which the reservation was created, and to the public interest by depleting flow in the river and reducing inflows to Pyramid Lake. Depleted river flows would conflict with the Tribe's senior claims and would operate to the detriment of the threatened and endangered species inhabiting Pyramid Lake and the lower Truckee River.

III.

Application 84003 was timely protested by the U. S. Bureau of Reclamation (BOR) on the grounds as summarized below:¹

1. The proposed point of diversion (POD) is at least two miles closer to the Truckee River than Permit 65062. Studies performed by the U.S. Geological Survey within the Tracy Segment show connections between groundwater and surface waters of the river. BOR submits that it is shown that pumping from the proposed POD may intercept surface water that would otherwise flow to the river, not just the precipitation recharge within the Tracy Segment, as described in Ruling No. 5747-A, which granted Permit 65062.
2. It is questionable whether allocating an average recharge from precipitation actually allocates surface water. In drought years, allocating the average estimated recharge/discharge of a groundwater source connected to surface flow may have a bigger impact on surface flows than in wet years.
3. Granting the application would be detrimental to the United States, the Newlands Project and the public interest by depleting flows in the Truckee River. Depleted river flows would operate to the detriment of threatened and endangered species inhabiting the lower Truckee River and Pyramid Lake, and would reduce surface flows available under Claim 3 of the *Orr Ditch* Decree.
4. Granting the application may be otherwise contrary to law or the public interest as can yet be determined based on information in the application.

IV.

The Applicant submitted a timely Answer¹ to the protests pursuant to Nevada Administrative Code (NAC) § 533.140, which Answer is discussed more fully herein.

FINDINGS OF FACT

I.

Nevada Revised Statute § 533.365(3) provides that it is within the State Engineer's discretion to determine whether a public administrative hearing is necessary to address the merits of a protest to an application to appropriate the public waters of the state of Nevada. The State Engineer finds that sufficient evidence is available in the Office of the State Engineer to evaluate the merits of Application 84003 and a hearing on the application is not necessary.

II.

Background

The Tracy Segment Hydrographic Basin ("Tracy Segment") is located in the Truckee River Basin, and is underlain by two main hydrogeologic units; bedrock composed of predominantly volcanic rock that extends beneath the majority of the basin, and basin-fill composed of alluvium that is thickest along the Truckee River and tributary drainages.²

The main sources of water in the Tracy Segment are the Truckee River and precipitation. The Truckee River flows west to east across the basin and has an average flow of 614,000 acre-feet annually where it enters the Tracy Segment. Historical gauging data indicate that on average, the river gains a net of 11,000 acre-feet annually across the Tracy Segment. Mean annual precipitation has been estimated at approximately 150,000 acre-feet per year.³ Of that amount, the State Engineer has determined that 11,500 acre-feet per year is the best estimate of average annual recharge to the groundwater from precipitation.⁴

² BOR protest, Exhibit D, Carl E. Thodal and Mary L. Tumbusch, *Hydrology, Water Chemistry, and Revised Water Budgets for Tracy Segment Hydrographic Area, Storey, Washoe, and Lyon Counties, West-Central Nevada, 1998-2002, Scientific Investigations Report 2006-5010*, (United States Geological Survey), 2006. (Hereinafter, "Tracy Segment Report")

³ Tracy Segment Report.

⁴ State Engineer's Ruling No. 5747-A, dated May 31, 2013, official records in the Office of the State Engineer.

Application 84003 is a change application filed by TRI concerning its Tahoe-Reno Industrial Center property. The change application proposes to move the point of diversion of its base right, Permit 65062, approximately 3½ miles to the northwest of its existing point of diversion. The change would move the point of diversion from a location that is approximately 2½ miles from the Truckee River to a new location that is approximately 1,600 feet from the Truckee River. The change application does not propose an increase in overall duty.

III.

The State Engineer Must Examine Application 84003 on its Own Merits

Both Protestants assert that the application will impair existing rights by depleting flows in the Truckee River. They allege that the proposed point of diversion is hydraulically connected to the river by virtue of its position close to the river and within hydrogeologic units that are hydraulically connected to the river.

The Applicant's Answer asserts that these same protests were made and evaluated in the administrative hearing that resulted in Ruling No. 5747-A, which granted Permit 65062 - the base right associated with this change application. Consequently, the Applicant characterizes the protests against Application 84003 as attempting to gain a second bite at the apple and the Applicant asserts that Application 84003 should be approved because it is supported by the record established in Ruling 5747-A. The Applicant refers to the abundance of scientific evidence produced at that hearing on behalf of TRI and the protestants to those applications concerning the effects that the proposed diversion rates would have on the river. It points to the fact that this scientific evidence was the subject of cross examination during the hearings, and notes that the evidence was considered in Ruling No. 5747-A.

The State Engineer finds that indeed many of the same protest grounds were raised by the protestants to Permit 65062. However, the key difference in this change application is that it proposes to move the point of diversion substantially closer to the Truckee River than the points of diversion considered in Ruling No. 5747-A. This places the proposed point of diversion for Application 84003 in a potentially different hydrologic environment; and, at a location that is substantially nearer to senior surface water rights. For these reasons, the State Engineer must evaluate this change application based on its own unique attributes, as doing so is consistent with the State Engineer's statutory mandate to analyze any change application for potential conflicts with existing

rights, regardless of whether the change application's base right has been previously considered as part of a ruling.⁵

The State Engineer finds that the record established by Ruling No. 5747-A did not consider the point of diversion as proposed in Application 84003, and therefore does not provide the grounds to grant Application 84003 without further analysis of potential conflicts with existing rights. Application 84003 has a sufficiently different proposed point of diversion compared to its base right warranting independent consideration for approval or denial on a conflicts analysis. In light of the foregoing, the Applicant's assertion that the application can be granted without further analysis because it is supported by the record established by Ruling No. 5747-A, is rejected. Nevertheless, the State Engineer does agree with the Applicant that the administrative hearing record leading to Ruling No. 5747-A contains an abundance of scientific evidence that is relevant to the analysis of Application 84003, as discussed more fully herein.

IV.

Impacts to Existing Rights

The Tribe argues that in prior rulings, the State Engineer was disinclined to consider the protest ground that there was a surface to groundwater connection in the Tracy Segment, with the State Engineer affirming the regulation of surface water and groundwater as separate sources. Since the issuance of Ruling Nos. 5747 and 5747-A, the Tribe points to recent rulings of the State Engineer where he has accepted that the bright line distinction in treating surface water and groundwater as separate sources is fading. The State Engineer does not disagree with the Tribe's statement, and more recently, the State Engineer has begun a slow and careful departure from the century-long treatment by the State Engineer of surface and groundwater as separate sources.⁶ Recent State Engineer rulings⁷ signal a slow shift away from the management of surface and groundwater as separate sources, where appropriate. Indeed, in *United States v. Orr Ditch Co.*, 600 F.3d 1152 (9th Cir. 2010), which involved an appeal of the permits

⁵ See generally, e.g., NRS § 533.370(2) (where a proposed change conflicts with existing rights, the State Engineer shall reject the application and refuse to issue the permit).

⁶ See e.g., NRS Chapter 533 (surface water), cf. Chapter 534 (groundwater).

⁷ See Ruling Nos. 6290, dated August 15, 2014, 6299, dated December 24, 2014, and 6311, dated April 16, 2015, official records in the Office of the State Engineer. In addition, there has been a recent spate of lawsuits to compel the State Engineer to curtail groundwater pumping alleged to have impacted senior decreed surface water rights.

granted under Ruling No. 5747 in the Tracy Segment, the Ninth Circuit found that the reciprocal hydraulic connection between surface water and groundwater had been known to both the legal and professional community for many years. 600 F.3d at 1158. The Ninth Circuit concluded in that case that the district court was aware of hydraulic connectivity when issuing the *Orr Ditch* Decree, holding that the proper construction of the Decree is that Claims 1 and 2 cannot be defeated by allocation of water to others – whether by allocation of surface or groundwater. *Id.*

The Protestants point to lithologic information from well logs at or in the immediate vicinity of the proposed point of diversion as evidence of a direct connection between water that would be pumped and the Truckee River. The principal data used to support this assertion is well driller's log 63437,⁸ which provides lithologic data for the original test well, WS-1, drilled at the proposed point of diversion for Application 84003.

The BOR also asserts that data and interpretations documented by U.S. Geological Survey aquifer test reports⁹ and in the Tracy Segment Report demonstrate that there is a connection between the Truckee River and groundwater; that surface water and groundwater interact in the general vicinity of the proposed point of diversion; that there is flow from the river into the aquifer; and that there are surface-water impacts due to groundwater pumping in the general vicinity of the proposed point of diversion.

The State Engineer has reviewed the data and finds that a preponderance of evidence indicates that there is a hydraulic connection between the Truckee River and the shallow aquifer system in the general vicinity of the proposed point of diversion and there is an unquantified potential for pumping to impact flows in the Truckee River in the general vicinity of the proposed point of diversion. However, the State Engineer finds the data referenced by the BOR in its protest does not provide evidence that specifically indicates a direct hydraulic connection between the proposed point of diversion and the Truckee River, or evidence to determine the timing and amount of any streamflow capture that would be caused by pumping at the proposed point of diversion if Application 84003 were granted.

⁸ Well Log No. 63437, Nevada Division of Water Resources' Well Log Database, official records in the Office of the State Engineer, available at <http://water.nv.gov/data/welllog/>.

⁹ BOR protest, Exhibit C.

To resolve those questions, the State Engineer reviewed evidence admitted during the administrative hearing leading to Ruling No. 5747-A.¹⁰ Information was contained within the record that documents certain data collected from well WS-1, the original test well located at the proposed point of diversion.¹¹ Stable isotope results for groundwater samples from WS-1 are reported as $\delta^{18}\text{O} = -11.8$ per mil and $\delta^2\text{H} = -93$ per mil.¹² These same stable isotope constituents were used in the Tracy Segment Report to estimate the percent contribution of Truckee River source water to groundwater at various wells in the Tracy Segment. Applying the methodology used in the Tracy Segment Report to the WS-1 results yields an estimated 59% (for $\delta^{18}\text{O}$) and 67% (for $\delta^2\text{H}$) recharge contribution from the Truckee River to the groundwater collected at WS-1. These results indicate that a substantial component of water sourced from the Truckee River can move from the river to the aquifer system at WS-1. The State Engineer finds that these results demonstrate that water to be pumped from the proposed point of diversion is hydraulically linked to the river. The State Engineer also finds these results indicate that, even though this is a gaining reach of the river, characterized by overall groundwater flow from the aquifer to the river, there is also river recharge to the aquifer in areas proximal to the river.

The same exhibit reports on a constant discharge aquifer test at WS-1 conducted in 1997. The report states that:

A distinct recharge boundary was reached at 400 minutes into the aquifer test, when additional drawdown ceased, indicating that the aquifer was being recharged at that point in time from a constant head source.¹³

The results from the 1997 aquifer test at WS-1 illustrate a relationship between pumping and water levels that is consistent with streamflow capture that can be conceptualized as follows: groundwater pumping will lower water levels in the aquifer until drawdown caused by pumping reaches a recharge or discharge boundary causing either an increase in recharge or decrease in discharge, respectively. The cumulative

¹⁰ Public administrative hearing before the State Engineer regarding Application Nos. 63805, 64171, 65060, 65061, 65062, 65063, 65064, 65065, 65066, 65067, 65068, 65069, 65070, 65071, 66729, 69594, 69595 and 69596, December 12-14, 2006, and February 27-March 1, 2007, official records in the Office of the State Engineer. Hereinafter, exhibits will be referred to by exhibit number.

¹¹ Exhibit 128.

¹² Exhibit 128, Table 13 and Figure 12.

¹³ Exhibit 128, p. 22.

decrease in discharge plus increase in recharge is termed 'capture' or 'depletion'. If no boundary is reached, water levels will continue to lower as long as pumping continues. This can occur either because the pumping well is far away from any recharge and discharge boundaries, or because there is a poor hydraulic connection between the pumped well and recharge or discharge boundaries. If a boundary is reached, drawdown will diminish as water is captured at that boundary. Drawdown will cease and water levels will stabilize at a lower level, once capture equals pumping. All things being equal, the closer to and better connected the pumping well is to a river, the larger and more immediate the depletion. It is important to note that capture cannot exceed pumping.

In that event, the aquifer test at WS-1 shows water levels at the pumping well to drop at a constant rate, as measured on a semi-log time scale, until the drawdown curve flattens and water levels stabilize. This "flattening" is an indicator of the cone of depression reaching a boundary (or "constant head source"). As the cone of depression encounters that boundary, it can begin to capture flow at the source slowing the rate of drawdown at the pumping well. When the rate of captured flow becomes equal to the pumping rate, drawdown ceases and water levels stabilize. Results of the aquifer test are consistent with pumping at WS-1 capturing 100% of the pumped amount from a boundary after less than seven hours (400 minutes) of pumping.

Based on the foregoing, the available evidence clearly indicates that pumping under Application 84003 at the proposed point of diversion will capture flow from a boundary within hours after pumping commences and at a capture rate that, over time, will approach that of the entire pumping rate. Since the only known boundary in the immediate vicinity of the proposed point of diversion is the Truckee River, the associated impacts will be to the Truckee River. The State Engineer finds that pumping at amounts up to the proposed 1,000 acre-feet per year would capture Truckee River flow within a matter of days and at an amount that could ultimately approach the entire pumping rate. Accordingly, the State Engineer finds there would be a measureable conflict with senior decreed surface water rights.

Finally, in its Answer, the Applicant states that the protections as required by NAC § 534.390 for a well drilled near a stream system are in place at the well in question, and are intended to minimize, if not eliminate any direct impact to the surface flows. The State Engineer finds that well WS-1 has this protection.⁸ However, based on

the previous finding that pumping at WS-1 would impact Truckee River flows, the State Engineer finds that such protection is not adequate at this particular location.

CONCLUSIONS OF LAW

I.

The State Engineer has jurisdiction over the parties and the subject matter of this action and determination.¹⁴

II.

The State Engineer is prohibited by law from granting a permit under a change application that requests to appropriate the public waters where:¹⁵

- A. there is no unappropriated water at the proposed source;
- B. the proposed use or change conflicts with existing rights;
- C. the proposed use or change conflicts with protectable interests in existing domestic wells as set forth in NRS § 533.024; or
- D. the proposed use or change threatens to prove detrimental to the public interest.

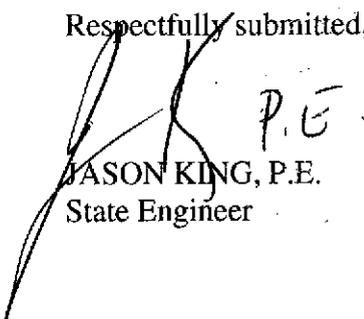
III.

The State Engineer concludes that the changes proposed by Application 84003 will conflict with existing rights.

RULING

The protests to Application 84003 are upheld in part and Application 84003 is hereby denied on the grounds that its approval would conflict with existing rights. No ruling is made on the remaining protest grounds.

Respectfully submitted,


JASON KING, P.E.
State Engineer

Dated this 26th day of
January, 2016.

¹⁴ NRS Chapters 533 and 534.

¹⁵ NRS § 533.370(2).

EXHIBIT "A"

Proposed Place of Use

Aliquot Part	Section(s)	T.N.	R.E.	Base & Meridian
All	1, 2 & 3	18	22	MDB&M
All	10, 11 & 12	18	22	MDB&M
All	13, 14 & 15	18	22	MDB&M
All	22, 23 & 24	18	22	MDB&M
All	1 thru 8	18	23	MDB&M
Portions North of Stagecoach GID	9 & 10	18	23	MDB&M
All	11, 12 & 13	18	23	MDB&M
Portions North of Stagecoach GID	14 thru 17	18	23	MDB&M
All	18 & 19	18	23	MDB&M
Portions North of Stagecoach GID	20 & 24	18	23	MDB&M
All	1 thru 18	18	24	MDB&M
Portions North of Stagecoach GID	19	18	24	MDB&M
All	20 thru 24	18	24	MDB&M
Portions outside of SSMWC*	25 & 26	18	24	MDB&M
All	27 thru 29	18	24	MDB&M
All	32 thru 34	18	24	MDB&M
Portions outside of SSMWC*	35 & 36	18	24	MDB&M
All	6 & 7	18	25	MDB&M
Portions outside of SSMWC*	18 & 19	18	25	MDB&M
Portions outside of Lake Lahonton	29 & 32	18	25	MDB&M
All	31	18	25	MDB&M
Portions South of Interstate HWY 80	1	19	21	MDB&M
All	1 thru 5	19	22	MDB&M
All	6	19	22	MDB&M
All	7 thru 30	19	22	MDB&M
All	33 thru 36	19	22	MDB&M
All	1 thru 36	19	23	MDB&M
All	6 & 7	19	24	MDB&M
All	18 & 19	19	24	MDB&M
All	30 & 31	19	24	MDB&M
Portions South of Interstate HWY 80	36	20	21	MDB&M
Portions South of the Truckee River	24 thru 26	20	22	MDB&M
Portions South of the Truckee River	28	20	22	MDB&M
Portions South of Interstate HWY 80	31 & 32	20	22	MDB&M
Portions South of the Truckee River	33 thru 35	20	22	MDB&M
All	36	20	22	MDB&M

EXHIBIT "A"

Place of Use - Continuation Exhibit "A"

Portions South of the Truckee River	13	20	23	MDB&M
Portions South of the Truckee River	19 thru 24	20	23	MDB&M
All	25 thru 36	20	23	MDB&M
Portions South of the Truckee River	18	20	24	MDB&M
All	19	20	24	MDB&M
All	30 & 31	20	24	MDB&M

* SSMWC = Silver Springs Mutual Water Company