

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

IN THE MATTER OF APPLICATIONS 67152, 67195,)
67205, 67206, 67243, 71220, AND 72276 FILED TO)
APPROPRIATE GROUNDWATER WITHIN THE)
LOVELOCK VALLEY HYDROGRAPHIC BASIN)
(73), PERSHING COUNTY, NEVADA.)

RULING
#6299

GENERAL

I.

Application 67152 was filed on January 22, 2001, by Nevada Land & Resource Company, LLC, later assigned to New Nevada Lands, LLC, to appropriate 10.0 cubic feet per second (cfs) of groundwater for industrial purposes. The proposed point of diversion is described as being located within the NW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 9, T.28N., R.32E., M.D.B.&M. The proposed place of use is described as being located within Section 11, T.28N., R.32E., M.D.B.&M. Item 12, the remarks section of the application, indicates that the water is to be used for an 800 megawatt power generation facility and its ancillary uses with consumptive use estimated at 6,000 acre-feet annually.¹

II.

Application 67195 was filed on February 6, 2001, by Nevada Land & Resource Company, LLC, later assigned to New Nevada Lands, LLC, to appropriate 10.0 cfs of groundwater for industrial purposes. The proposed point of diversion is described as being located within the NW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 17, T.28N., R.32E., M.D.B.&M. The proposed place of use is described as being located within Section 11, T.28N., R.32E., M.D.B.&M. Item 12, the remarks section of the application, indicates that the water is to be used for an 800 megawatt power generation facility and its ancillary uses with consumptive use estimated at 6,000 acre-feet annually.²

¹ File No. 67152, official records in the Office of the State Engineer.

² File No. 67195, official records in the Office of the State Engineer.

III.

Application 67195 was timely protested by the Pershing County Water Conservation District on the grounds that granting the application will affect the water table and drainage and adversely affect the decreed waters of the Humboldt River.²

IV.

Application 67205 was filed on February 8, 2001, by Nevada Land & Resource Company, LLC, later assigned to New Nevada Lands, LLC, to appropriate 10.0 cfs of groundwater for irrigation purposes. The proposed point of diversion is described as being located within the NE¼ NE¼ of Section 19, T.28N., R.32E., M.D.B.&M. The proposed place of use is described as being located within all of Sections 17 and 19, T.28N., R.32E., M.D.B.&M. (1,200 acres).³

V.

Application 67206 was filed on February 8, 2001, by Nevada Land & Resource Company, LLC, later assigned to New Nevada Lands, LLC, to appropriate 10.0 cfs of groundwater for irrigation purposes. The proposed point of diversion is described as being located within the NE¼ NE¼ of Section 3, T.28N., R.32E., M.D.B.&M. The proposed place of use is described as being located within the W½ of Section 35, T.29N., R.32E., M.D.B.&M. and the E½ of Section 3, T.28N., R.32E., M.D.B.&M. (640 acres).⁴

VI.

Application 67243 was filed on February 28, 2001, by Nevada Land & Resource Company, LLC, later assigned to New Nevada Lands, LLC, to appropriate 10.0 cfs of groundwater for industrial purposes (power generation). The proposed point of diversion is described as being located within the NW¼ NW¼ of Section 9, T.28N., R.32E., M.D.B.&M. The proposed place of use is described as being located within Section 11, T.28N., R.32E., M.D.B.&M. Item 12, the remarks section of the application, indicates that the water is to be used for an 800 megawatt power generation facility and its ancillary uses with consumptive use estimated at 6,000 acre-feet annually.⁵

³ File No. 67205, official records in the Office of the State Engineer.

⁴ File No. 67206, official records in the Office of the State Engineer.

⁵ File No. 67243, official records in the Office of the State Engineer.

VII.

Application 71220 was filed on May 13, 2004, by Nevada Land & Resource Company, LLC, later assigned to New Nevada Lands, LLC, to change the point of diversion of the water applied for under Application 67195. The proposed point of diversion is described as being located within the SW¼ SW¼ of Section 5, T.28N., R.32E., M.D.B.&M. Item 12, the remarks section of the application, indicates that the water is to be used for an 800 megawatt power generation facility and its ancillary uses with consumptive use estimated at 6,000 acre-feet annually.⁶

VIII.

Application 72276 was filed on February 25, 2005, by Nevada Land & Resource Company, LLC, later assigned to New Nevada Lands, LLC, to change the point of diversion of the water applied for under Application 71220. The proposed point of diversion is described as being located within the SE¼ SW¼ of Section 11, T.28N., R.32E., M.D.B.&M. Item 12, the remarks section of the application, indicates that the water is to be used for an 800 megawatt power generation facility and its ancillary uses with consumptive use estimated at 6,000 acre-feet annually.⁷

IX.

Application 72276 was timely protested by the Pershing County Water Conservation District on the grounds that granting the application will affect the water table and drainage and adversely affect the decreed waters of the Humboldt River.⁷

FINDINGS OF FACT

I.

Nevada Revised Statute § 533.365(4) 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 Nevada. The State Engineer finds that in the case of Applications 67195 and 72276 there is sufficient information contained within the records of the Office of the State Engineer to gain a full understanding of the issues and a hearing on this matter is not required.

⁶ File No. 71220, official records in the Office of the State Engineer.

⁷ File No. 72276, official records in the Office of the State Engineer.

II.

Applications 67152, 67195, and 67243, which are for an industrial power plant purpose, were first filed in 2001, followed by Applications 71220 and 72276 to change the point of diversion of Application 67195. Since that time the State Engineer has on several occasions requested the Applicant to provide information on the specifics of a power plant project. By letter dated February 14, 2008, the Applicant indicated this project was being pursued as a coal fired power facility and asked for additional time for developing a project. By letter dated October 5, 2009, the Applicant indicated that it was continuing to pursue energy generation project and in February 2008 entered into a geothermal lease with Vulcan Power Company, which includes a project on property adjacent to the point of diversion and place of use under its applications. In said letter dated October 5, 2009, the Applicant also indicated that through its affiliate Fish Springs Ranch, LLC, it submitted a proposal regarding a solar project that could be located on Section 11, T.28N., R.32E., M.D.B.&M. because both of these projects were only in the development stage it could not provide any specific information on actual water use.¹

By letter dated August 30, 2011, the Applicant indicated that it continues to pursue an energy generation project, it restates the information about a lease with Vulcan Power Company, which became Gradient Resources, Inc. in August 2010, and indicates that Gradient received a permit from the Nevada Division of Minerals for the Colado Project Area to drill production, injection and observation wells. By letter dated August 8, 2012, the Applicant indicated that since 2008 Gradient Resources has been conducting exploration on the lease and determined that it could support up to a 200 megawatt power generation facility; however, the project would be developed in phases of 30 megawatts. The Applicant requested that Application 67152 be permitted in the amount of 10 cfs, and that it would withdraw Applications 67195, 67243, 71220 and 72276.¹

The State Engineer finds that over thirteen years have passed since the filing of the applications and there is no information that indicates there is any specific project that would utilize any water that may be granted under these applications is ready to proceed.

III.

Perennial Yield Oreana Subarea

The Lovelock Valley-Oreana Subarea Hydrographic Basin (Basin 073A), was designated as an area of concern by the State Engineer by Order No. 369, issued on February 25, 1969, due to issues relating to water quantity and water quality.

Pursuant to State Engineer's Order No. 370, issued on February 25, 1969, the State Engineer curtailed the issuance of any additional permits for irrigation purposes within a portion of the Oreana Subarea and declared municipal use a preferred use of groundwater within the designated area. The remaining portion of the Lovelock Valley Basin has not been designated.

Pursuant to State Engineer's Order No. 1079, issued on May 17, 1993, the State Engineer expanded the area of preferred use, municipal and irrigation to be denied, into other portions of the Oreana Subarea. The purpose of these designation orders was to preserve the limited fresh groundwater resources in the basin for municipal use, rather than for irrigation. The State Engineer recognized that most of the recharge from precipitation in the valley was derived from precipitation in the Humboldt Range and, by designating the Oreana Subarea, he was preserving that limited supply for municipal use. South and west of the Oreana Subarea in Lovelock Valley the water quality was less favorable for municipal use, and in locations further south is not potable.

Groundwater recharge in the Oreana Subarea is estimated to be 2,000 acre-feet per year.⁸ The perennial yield of the Oreana Subarea is currently established as 2,000 acre-feet, equal to local recharge from precipitation. Existing groundwater rights in the Lovelock Valley - Oreana Subarea currently approximate 4,975 acre-feet annually.⁹ The State Engineer finds that the existing water rights exceed the perennial yield of the Oreana Subarea.

Lovelock Valley

Lovelock Valley is located at the terminus of the Humboldt River flow system. It extends from Rye Patch Dam to the end of the Humboldt Sink. Groundwater recharge from

⁸ D.E. Everett and F. Eugene Rush, *Water Resources Appraisal of Lovelock Valley, Pershing County, Nevada*, Water Resources-Reconnaissance Series Report 32, (Department of Conservation and Natural Resources and United States Geological Survey), April 1965.

⁹ Nevada Division of Water Resources' Water Rights Database, Hydrographic Basin Summary, Lovelock Valley – Oreana Subarea (073A), October 24, 2014, official records in the Office of the State Engineer.

precipitation within the basin, excluding the Oreana Subarea, is estimated to be approximately 1,200 acre-feet per year. An additional 1,000 acre-feet annually enters the basin as subsurface inflow from the Imlay Area Hydrographic Basin. Groundwater recharge also occurs through river and canal seepage, and from deep percolation from irrigated lands. Discharge of groundwater from Lovelock Valley occurs by evapotranspiration (ET) from phreatophytic plants around the perimeter of the valley floor, seepage to irrigation drains and subsequent ET from the Humboldt Sink, subsurface flow to the Carson Desert, or by pumpage.

The perennial yield of Lovelock Valley is currently established as 43,000 afa. This figure was first published by the Nevada State Engineer in 1971,¹⁰ citing two reconnaissance analyses prepared by the USGS in the 1960s. One was Reconnaissance Series Report 32 (Recon 32),¹¹ which was specific to Lovelock Valley and evaluated individual components of the Lovelock basin water budget, including an appraisal of water quality and a discussion on perennial yield. The other was Bulletin 32,¹² which provided a hydrologic assessment of the entire Humboldt River basin.

The authors of Recon 32 and Bulletin 32 did not explicitly calculate a perennial yield, but they did evaluate individual components of the Lovelock water budget from which perennial yield can be derived. Recon 32 estimated groundwater discharge by phreatophyte evapotranspiration to be 22,500 afa in Lovelock Valley excluding the Humboldt Sink and the Oreana subarea. Recon 32 also estimated that 21,000 afa of infiltrated irrigation water is discharged to drains and conveyed to the Humboldt Sink, where it is ultimately lost through ET. In Bulletin 32, the authors estimated total groundwater evapotranspiration in the Lovelock Valley, including the Oreana Subarea and the Humboldt Sink, to be 31,100 afa; however, the authors do not provide supporting information such as ET areas or rates.

The fact that the authors of Recon 32 did not calculate a perennial yield is notable because this was one of their stated objectives. The authors instead concluded that perennial

¹⁰ Office of the State Engineer, *Water for Nevada, State of Nevada Water Planning Report No. 3*, 1971.

¹¹ D.E. Everett and F. Eugene Rush, *Water Resources Appraisal of Lovelock Valley, Pershing County, Nevada*, Water Resources-Reconnaissance Series Report 32, (Department of Conservation and Natural Resources and United States Geological Survey), April 1965.

¹² T. E. Eakin and R. D. Lamke, *Hydrologic Reconnaissance of the Humboldt River Basin, Nevada*, Water Resources Bulletin No. 32, (State of Nevada, Office of the State Engineer and United States Geological Survey), 1966.

yield was indeterminate, because pumpage near the Humboldt River can induce recharge from the River. They also concluded that groundwater development potential was limited because groundwater of suitable quality for most uses only occurs in the northern portion of the basin, and the bulk of the groundwater in the basin was too highly mineralized for agriculture and most other purposes. When the State Engineer interpreted the information in Recon 32 and Bulletin 32 to assign a perennial yield of 43,000 afa, he did not qualify this estimate at the time to account for the limitations outlined in those reports.

In many Nevada groundwater basins, including Lovelock Valley, the State Engineer has determined that the perennial yield of the basin is equal to the natural ET, assuming that the water consumed by phreatophytic plants can be captured by pumping and placed to beneficial use. In other basins, including many basins with through-flowing rivers or basins that have no natural groundwater ET, the State Engineer has determined that the perennial yield is equal to recharge from precipitation in the valley. Often the State Engineer has used a combination of factors to determine the perennial yield. The 43,000 afa perennial yield assigned to the Lovelock Basin appears to be the sum of the ET lost to phreatophytes (22,500 afa) plus the water lost to the drains and evaporated in the Humboldt Sink (21,000 afa), rounded down from 43,500 to 43,000.

The State Engineer finds it necessary to reexamine and revise the perennial yield of groundwater in Lovelock Valley, because current data on groundwater sources, movement, and quality shows that there are significant limitations to the development potential of the groundwater in the basin. Consideration of these limitations is essential in evaluating new water right applications to ensure sustainable use of the limited fresh water supply in the basin and to prevent conflicts with existing water rights.

In the northern portion of Lovelock Valley, upgradient of most irrigation in the basin, groundwater originates as recharge from precipitation in the local drainage basin, subsurface groundwater inflow from the Imlay area, or as seepage from the Humboldt River, and is of generally good chemical quality. Recon 32 estimated local recharge at 1,200 afa, excluding the Oreana Subarea. Subsurface groundwater inflow from the Imlay area was estimated to be 1,000 afa.¹³ Groundwater pumping in this part of the valley that exceeds local recharge and subsurface

¹³ T.E. Eakin, *Ground-water appraisal of the Imlay area, Humboldt River Basin, Pershing County, Nevada*, Water Resources-Reconnaissance Series Report 5, (Department of Conservation and Natural Resources and United States Geological Survey), February 1962.

inflow may ultimately induce additional recharge from the River, which could conflict with existing rights.

The chemical quality of groundwater decreases from north to south. In the agricultural portion of Lovelock Valley, surface water is diverted from the river and distributed throughout the valley for irrigation. Groundwater recharge occurs through river and canal seepage, and irrigation in excess of the field capacity of the soil. Because the farm area and the Humboldt Sink are at the end of the river, salts are concentrated there through the evapotranspiration process. Salts are leached from the soil by irrigation water, but are still present in the groundwater. Some of this infiltrated water discharges to drains and makes its way to the Humboldt Sink, but much of it also supplies water for phreatophyte ET in areas adjacent to irrigated agriculture. Water lost to ET in areas distal from the Humboldt River can generally be captured by pumping, but in most of Lovelock Valley, the water lost to phreatophytic ET is of poor chemical quality. Water lost to ET along the margins of the River is of better quality, but this ET generally cannot be captured by pumping because drawdown near the River induces recharge from the River which maintains a supply of water for phreatophytes.

Groundwater of degraded chemical quality in the southern portion of the basin constitutes the bulk of the perennially available groundwater supply in Lovelock Valley. Capture of this groundwater that would otherwise be discharged naturally by evapotranspiration might be achieved without unreasonable impacts to existing rights, but its development potential is substantially limited by poor water quality.

Existing groundwater appropriations in Lovelock Valley are approximately 10,000 afa,¹⁴ which, on its face, suggests that there is a large surplus of groundwater available to appropriate. However, nearly all of the existing appropriations are concentrated in the northern portion of the basin where groundwater quality is generally suitable for most uses. There is virtually no groundwater development in the downgradient portion of Lovelock Valley, including the Humboldt Sink, where the bulk of the perennially available groundwater occurs.

The subject applications propose to pump groundwater near the Humboldt River and upgradient of the existing irrigated farm land. The State Engineer finds that the proposed groundwater pumpage in this location would either induce recharge from the Humboldt River,

¹⁴ Nevada Division of Water Resources' Water Rights Database, Hydrographic Basin Summary, Lovelock Valley (073), October 24, 2014, official records in the Office of the State Engineer.

and thereby conflict with existing surface-water rights, or would pump from the limited fresh water aquifers, a fully-appropriated source.

The State Engineer finds that the existing perennial yield in Lovelock Valley must be limited to the amount of groundwater of suitable chemical quality that is replenished on an annual basis.¹⁵ The revised perennial yield is determined to be 2,200 afa, which is the mean annual rate of recharge from precipitation in the Lovelock hydrographic basin and groundwater inflow from the Imlay hydrographic basin. Existing appropriations of approximately 10,000 afa exceed the revised perennial yield. The State Engineer finds that there is no unappropriated groundwater available in the Lovelock Valley Hydrographic Basin.

IV.

Conflicts with Existing Rights

As discussed in the perennial yield section above, the annual recharge in the basin is approximately 2,200 acre-feet. If these applications were granted, the pumped water could capture this recharge, which is already appropriated, and would therefore conflict with existing rights. Alternatively, pumping under the applications could induce recharge from the Humboldt River, thereby conflicting with senior surface-water rights. The State Engineer finds that development of groundwater under these applications would conflict with existing rights.

CONCLUSIONS OF LAW

I.

The State Engineer has jurisdiction over the parties and the subject matter of this action and determination.¹⁶

II.

The State Engineer is prohibited by law from granting a permit under an application to appropriate the public water where:¹⁷

- A. there is no unappropriated water at the proposed source;
- B. the proposed use or change conflicts with existing rights;

¹⁵ D.E. Everett and F. Eugene Rush, *Water Resources Appraisal of Lovelock Valley, Pershing County, Nevada*, Water Resources-Reconnaissance Series Report 32, (Department of Conservation and Natural Resources and United States Geological Survey), April 1965. p. 23.

¹⁶ NRS Chapters 533 and 534.

¹⁷ NRS § 533.370(2).

- 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.

Applications 67152, 67195, 67243, 71220, and 72276 were filed for industrial power plant purposes with the first applications being filed in 2001. To date, the Applicant has not demonstrated that any specific project is ready to proceed.

Nevada Revised Statute § 533.030 provides that water may only be appropriated for a beneficial use and not otherwise. Nevada Revised Statute § 533.370(1)(c) provides that when approving or rejecting an application the applicant must provide proof satisfactory of his intention in good faith to construct any work necessary to apply water to the intended beneficial use with reasonable diligence and his financial ability and reasonable expectation actually to construct the work and apply the water to the intended beneficial use with reasonable diligence. Additionally, NRS § 533.375 allows for the State Engineer to require the applicant to submit additional information to enable him to properly guard the public interest.

The State Engineer finds that the beneficial use requirement provides that the Applicant must demonstrate an actual beneficial use for the water applied for and does not allow for an applicant to tie up water for some project it might find in the future. The State Engineer finds the Nevada legislature has demonstrated its concern with speculating in water rights by enacting NRS § 533.370(1)(c), which requires that an applicant provide proof satisfactory of a good faith intention to actually construct the project with reasonable diligence and that it has the financial ability and reasonable expectation actually to construct the project.

The State Engineer finds that it threatens to prove detrimental to the public interest to allow an applicant to hold on to a water right application when it is unable to demonstrate an actual project for which the water will be used or has failed to provide information required under Nevada water law. The State Engineer finds that the Applicant did not provide any evidence of the actual beneficial use to be made, and did not provide any evidence that specifically supports the quantity of water applied for under these applications. The State Engineer finds that the Applicant has no discernible project at this time and the applications are filed for speculative purposes.

IV.

Nevada Revised Statute § 533.370(2) states that "...where there is no unappropriated water in the proposed source of supply, or where the proposed use or change conflicts with existing rights... the State Engineer shall reject the application and refuse to issue the requested permit." As discussed in the sections above, the annually replenished potable water supply in the northern half of Lovelock Valley is fully appropriated, and therefore there is no unappropriated water at the proposed source of supply. Furthermore, to grant these applications would conflict with existing groundwater rights in the area by capturing the limited amount of annually-recharged fresh water. If granted, the additional pumping would cause an increase in the infiltration of the surface water of the Humboldt River into the groundwater aquifer, thereby potentially reducing river flow to the extent that it could conflict with existing decreed Humboldt River water rights. The State Engineer finds that there is no unappropriated water at the proposed source of supply and the proposed use of this water would conflict with existing rights.

RULING

The protests to Applications 67195 and 72276 are upheld. Applications 67152, 67195, 67243, 71220 and 72276 are hereby denied on the grounds that no water is available for appropriation, the use of the water would conflict with existing rights and applications cannot be granted for speculative purposes. Applications 67205 and 67206 are hereby denied on the grounds that no water is available for appropriation and the use of the water would conflict with existing rights.

Respectfully submitted,

 P.E.
JASON KING, P.E.
State Engineer

Dated this 24th day of
December, 2014.