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

IN THE MATTER OF PROTESTED APPLICATION 53948 FILED TO APPROPRIATE THE UNDERGROUND WATERS OF TIKAPOO VALLEY (NORTHERN PART) (169A), LINCOLN COUNTY, NEVADA, APPLICATIONS 53950 AND 53951 FILED TO APPROPRIATE THE UNDERGROUND WATERS OF TIKAPOO VALLEY (SOUTHERN PART) (169B), LINCOLN COUNTY NEVADA, APPLICATIONS 54062 AND 54066 FILED TO APPROPRIATE THE UNDERGROUND WATERS OF THREE LAKES VALLEY (SOUTHERN PART) (211), CLARK COUNTY, NEVADA, AND APPLICATIONS 54068 AND 54069 FILED TO APPROPRIATE THE UNDERGROUND WATERS OF THREE LAKES VALLEY (NORTHERN PART) (168), CLARK COUNTY, NEVADA.	**RULING** **#5465**

GENERAL

I.

Application 53948 was filed on October 17, 1989, by the Las Vegas Valley Water District to appropriate 10.0 cubic feet per second of underground water from the Tikapoo Valley - Northern Part hydrographic basin for municipal and domestic purposes within Clark, Lincoln, Nye and White Pine Counties. The proposed point of diversion is described as being located within the NW¼ NE¼ of Section 24, T.6S., R.58E., M.D.B.&M.[1] Application 53948 was timely protested by the following persons or entities:[2]

U.S. Dept. of Interior, Bureau of Land Management ("BLM")
Steve Medlin
County of Inyo, California
Pahranagat Valley Joint Venture Services Board
Bertrand and Pierre V. Paris
Town of Alamo Water and Sewer Board

[1] File No. 53948, official records of the Office of the State Engineer. Exhibit No. 3, public administrative hearing March 22-26, 2004, official records in the Office of the State Engineer. Hereinafter, the transcript of the hearing and the exhibits will be referred to by transcript page number and exhibit number.

[2] File No. 53948, official records in the Office of the State Engineer. Exhibit Nos. 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19.

City of Caliente
Ely Shoshone Tribe
Lund Irrigation and Water Co.
County of White Pine and City of Ely
Moapa Band of Paiute Indians
U.S. Fish and Wildlife Service
County of Nye
U.S. Dept. of Interior, National Park Service
Unincorporated Town of Pahrump

II.

Application 53950 was filed on October 17, 1989, by the Las Vegas Valley Water District to appropriate 6.0 cubic feet per second of underground water from the Tikapoo Valley - Southern Part hydrographic basin for municipal and domestic purposes within Clark, Lincoln, Nye and White Pine Counties. The proposed point of diversion is described as being located within the NE¼ NE¼ of Section 33, T.12S., R.61E., M.D.B.&M.[3] Application 53950 was timely protested by the following persons or entities:[4]

Alice Rae Smalley
County of Inyo, California
Bertrand and Pierre V. Paris
The Toiyabe Chapter of the Sierra Club
John G. Tryon
City of Caliente
County of White Pine and City of Ely
Moapa Band of Paiute Indians
U.S. Fish and Wildlife Service
County of Nye
U.S. Dept. of Interior, National Park Service
Unincorporated Town of Pahrump

[3] File No. 53950, official records of the Office of the State Engineer. Exhibit No. 20.

[4] File No. 53950, official records in the Office of the State Engineer. In order to prevent filling the record with duplicative copies of protests, if a protest to one application was identical or nearly identical to that filed as to another application, it was not made a new exhibit. Exhibit Nos. 7, 9, 11, 14, 15, 16, 17, 19, 22, 23, 24, 25.

III.

Application 53951 was filed on October 17, 1989, by the Las Vegas Valley Water District to appropriate 10.0 cubic feet per second of underground water from the Tikapoo Valley - Southern Part hydrographic basin for municipal and domestic purposes within Clark, Lincoln, Nye and White Pine Counties. The proposed point of diversion is described as being located within the SE¼ NE¼ of Section 29, T.11S., R.61E., M.D.B.&M.[5] Application 53951 was timely protested by the following persons or entities:[6]

County of Inyo, California
Bertrand and Pierre V. Paris
Toiyabe Chapter of the Sierra Club
City of Caliente
Lund Irrigation & Water Company
County of White Pine and City of Ely
Moapa Band of Paiute Indians
U.S. Fish and Wildlife Service
County of Nye
U.S. Dept. of Interior, National Park Service
Unincorporated Town of Pahrump

IV.

Application 54062 was filed on October 17, 1989, by the Las Vegas Valley Water District to appropriate 6.0 cubic feet per second of underground water from the Three Lakes Valley - Southern Part hydrographic basin for municipal and domestic purposes within Clark, Lincoln, Nye and White Pine Counties. The proposed point of diversion is described as being located within the NE¼ SW¼ of

[5] File No. 53951, official records of the Office of the State Engineer. Exhibit No. 26.

[6] File No. 53951. Exhibit Nos. 7, 9, 11, 13, 14, 15, 16, 17, 19, 23, 25.

Section 7, T.17S., R.58E., M.D.B.&M.[7] Application 54062 was timely protested by the following persons or entities:[8]

U.S. Dept. of Interior, Bureau of Land Management
Las Vegas Valley Fly Fishing Club
County of Inyo, California
City of Caliente
Marilyn Beilstein
C. Pearson Coorham
Moapa Band of Paiute Indians
County of White Pine and City of Ely
U.S. Fish and Wildlife Service
Diane Wall
County of Nye
U.S. Dept. of Interior, National Park Service
Unincorporated Town of Pahrump

V.

Application 54066 was filed on October 17, 1989, by the Las Vegas Valley Water District to appropriate 10.0 cubic feet per second of underground water from the Three Lakes Valley - Southern Part hydrographic basin for municipal and domestic purposes within Clark, Lincoln, Nye and White Pine Counties. The proposed point of diversion is described as being located within the NW¼ SE¼ of Section 27, T.14S., R.59E., M.D.B.&M.[9] Application 54066 was timely protested by the following persons or entities:[10]

County of Inyo, California
City of Caliente
Toiyabe Chapter of the Sierra Club
Ely Shoshone Tribe
Moapa Band of Paiute Indians

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[7] File No. 54062, official records of the Office of the State Engineer. Exhibit No. 28.

[8] File No. 54062. Exhibit Nos. 7, 11, 14, 15, 16, 17, 19, 30, 31, 32, 33, 34, 38.

[9] File No. 54066, official records of the Office of the State Engineer. Exhibit No. 35.

[10] File No. 54066. Exhibit Nos. 7, 11, 12, 14, 15, 16, 17, 19, 37, 38.

County of White Pine and City of Ely
U.S. Fish and Wildlife Service
County of Nye
U.S. Dept. of Interior, National Park Service
Unincorporated Town of Pahrump

VI.

Application 54068 was filed on October 17, 1989, by the Las Vegas Valley Water District to appropriate 6.0 cubic feet per second of underground water from the Three Lakes Valley - Northern Part hydrographic basin for municipal and domestic purposes within Clark, Lincoln, Nye and White Pine Counties. The proposed point of diversion is described as being located within the NW¼ NE¼ of Section 32, T.13S., R.59E., M.D.B.&M.[11] Application 54068 was timely protested by the following persons or entities:[12]

County of Inyo, California
City of Caliente
Toiyabe Chapter of the Sierra Club
Moapa Band of Paiute Indians
County of White Pine and City of Ely
U.S. Fish and Wildlife Service
County of Nye
U.S. Dept. of Interior, National Park Service
Unincorporated Town of Pahrump

VII.

Application 54069 was filed on October 17, 1989, by the Las Vegas Valley Water District to appropriate 10.0 cubic feet per second of underground water from the Three Lakes Valley - Northern Part hydrographic basin for municipal and domestic purposes within Clark, Lincoln, Nye and White Pine Counties. The proposed point of diversion is described as being located within the NE¼ NW¼ of

[11] File No. 54068, official records of the Office of the State Engineer. Exhibit No. 39.

[12] File No. 54068. Exhibit Nos. 7, 11, 14, 15, 16, 17, 19, 37, 41.

Section 3, T.14S., R.59E., M.D.B.&M.[13] Application 54069 was timely protested by the following persons or entities:[14]

County of Inyo, California
City of Caliente
Toiyabe Chapter of the Sierra Club
Moapa Band of Paiute Indians
County of White Pine and City of Ely
U.S. Fish and Wildlife Service
County of Nye
U.S. Dept. of Interior, National Park Service
Unincorporated Town of Pahrump

VIII.

By letter dated May 19, 2003, the Southern Nevada Water Authority and the Las Vegas Valley Water District requested the State Engineer approve Applications 53948, 53950 and 53951 (Tikapoo Valley - Northern and Southern Part) for a combined duty of 10,000 acre-feet annually, Applications 54068 and 54069 (Three Lakes Valley - Northern Part) for a combined duty of 2,000 acre-feet annually, and Applications 54062 and 54066 (Three Lakes Valley - Southern Part) for a combined duty of 5,000 acre-feet annually.[15]

IX.

Many different grounds were presented in the various protests as reasons for why these applications should be denied. For the sake of brevity, instead of repeating the grounds of each protest individually, and since many of the grounds are identical or similar, the State Engineer summarizes the protest issues as follows:

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[13] File No. 54069, official records of the Office of the State Engineer. Exhibit No. 42.

[14] File No. 54069. Exhibit Nos. 7, 11, 14, 15, 16, 17, 19, 37, 41.

[15] File No. 53948, official records in the Office of the State Engineer. *See also*, Exhibit No. 92.

1. The amount of water requested for appropriation under the applications exceeds the annual recharge of specific groundwater basins and would thereby conflict with existing rights.

2. The applications should be denied because previous applications have been denied in these groundwater basins.

3. There are insufficient descriptions in the applications of the proposed works of diversion, costs of such works, time required to construct said works, and number of persons to be served.

4. There is insufficient information to determine the potential impacts from the use of water as proposed under the applications.

5. The applications should be denied because the public has been denied relevant information and due process.

6. The Applicant lacks the financial capability for developing the applied for waters.

7. The use of water under the applications will cause a drop in the water table, thereby drying up springs, seeps, wetlands, drawing down the water level in existing wells, causing desertification, a reduction in water quality, and a degradation of air quality due to increased dust.

8. The use of water under the applications will sanction water mining, which is contrary to Nevada law and public policy.

9. The use of water under the applications will deplete the waters of the Ash Meadows/Death Valley regional groundwater flow system, which supplies water to the Ash Meadows, which will ultimately result in a reduction in spring flow at Ash Meadows and impact not only threatened and endangered species, but also wetlands.

10. The use of water under the applications will interfere with the BLM's responsibilities to protect wetlands and to conserve listed threatened or endangered species.

11. The use of water under the applications will interfere

with the BLM's capability to provide water for the multiple uses under the Federal Land Policy and Management Act including, but not limited to recreation, range, wildlife, minerals, watershed and fish.

12. The use of water under the applications could affect the BLM's ability to manage areas for livestock grazing, wildlife habitat and wild horses and will interfere with the purposes for which federal lands are managed.

13. The use of water under the applications could eliminate the supplies of ground water in several areas and communities in eastern Inyo County that are dependent upon recharge from the regional carbonate-rock aquifers.

14. The use of water under the applications will cause an unreasonable lowering of the water table, degradation of water quality, destruction of environmental, ecological, scenic and recreational values, all to the detriment of the public interest.

15. The Applicant has not demonstrated access to the lands necessary to transport the water, as it has not shown it has the necessary right-of-ways to develop and transport the water across lands under the jurisdiction of the United States.

16. These applications in conjunction with the others applied for will perpetuate the inefficient use of water in the Las Vegas Valley Water District service area, and will sanction and encourage willful waste of water contrary to Nevada law and public policy.

17. The applications should be denied because the cost of the project will result in such an enormous rate increase that demand for water will be substantially reduced thereby rendering the water transfer unnecessary.

18. The applications were not made in good faith, but rather to lock up the water resources for use beyond current planning horizons.

19. The applications should be denied because current and developing trends in housing, landscaping, national plumbing

fixture standards and demographic patterns all suggest that the simplistic water demand forecasts upon which the proposed transfers are based substantially overstate future water demands.

20. It would be detrimental to the public interest to grant the applications in the absence of comprehensive water resource development planning, including, but not limited to, environmental impact considerations, socioeconomic impact considerations, cost/benefit considerations, water resource evaluation by an independent entity and a water resource plan for the Las Vegas Valley Water District like that which is required by the Nevada Public Service Commission of water purveyors.

21. The use of water under the applications will cause air contamination and air pollution in violation of the Clean Air Act and chapter 445 of the Nevada Revised Statutes.

22. The use of water under the applications is not in the public interest because the Applicant failed to have an independent, formal and publicly reviewable assessment of the water resources of the area, to study the cumulative effects of the proposed diversions, to indicate mitigation measures that will reduce the impacts of the proposed extraction, and to provide alternatives to the proposed extraction.

23. The applications should be denied because the population projections are unrealistic and ignore numerous constraints to growth, including traffic congestion, increased cost of infrastructure and services, degraded air quality, and protection of rare and endangered species.

24. The applications should be denied because the Applicant's conservation programs are inefficient efforts and the Applicant has failed to make a good faith effort to efficiently use current supplies.

25. The use of water under the applications will cause impacts to Pahranagat Valley ground and surface waters, area residents, agricultural operations and cause socioeconomic and environmental impacts. The request for the appropriation of water from Tikapoo Valley - Northern Part is so close to Pahranagat Valley as to cause harm to the resources of the Pahranagat Valley. The proposed point of diversion under Application 53948 is near the wells serving the Town of Alamo and pumping may cause a draw down in those wells.

26. The appropriation of water under the applications may curtail or make community growth in Alamo prohibitively expensive.

27. Lowering the water table in Pahranagat Valley would have tremendous impacts on the vegetative resource of the valley, wildlife, including threatened and endangered species, outdoor recreation and the economy.

28. The use of water under the applications will cause significant visual and aesthetic impacts by de-greening Pahranagat Valley, and installing unsightly construction improvements, i.e., pipelines and pump stations.

29. Exporting all the water from the Alamo/Pahranagat Valley Region could impact the community by limiting local development and growth causing a downward economic spiral, causing a major disruption to existing community cohesiveness, resulting in social problems and disrupting the family-oriented structure of the Mormon Church and causing destabilization as to basic rural philosophies forever changing the quality of life.

30. The use of water under the applications would impair and conflict with the value of existing rights, would be against public policy and contrary to statute, would interfere with customary uses of grazing areas, ranges and existing water rights.

31. The use of water as proposed under the applications would interfere with the rights of the Ely Shoshone Tribe under the Treaty of Ruby Valley.

32. The use of water as proposed under the applications will conflict with the rights claimed by the Moapa Band of Paiute Indians to the waters of the Muddy River and to ground water underlying the Moapa Indian Reservation.

33. The use of water as proposed under the applications will degrade wetlands and riparian habitats, including those in the Death Valley National Monument, Great Basin National Park, Lake Mead National Recreation Area and national wildlife refuge units.

34. The use of water as proposed under the applications will damage wetlands, springs, seeps and phreatophytes, which provide water and habitat for migratory species, other wildlife, grazing livestock and other existing uses.

35. The use of water as proposed under the applications will interfere with water rights held by the U.S. Fish and Wildlife Service and the underground source of water proposed to be appropriated will intercept the source of water that now maintains the numerous springs, seeps, marshes, streams, riparian and mesquite habitats that support wildlife and plant resources, including threatened and endangered species in the state of Nevada.

36. The public interest will not be served if water and water-related resources and senior surface and groundwater rights in the nationally important Ash Meadows National Wildlife Refuge, Desert National Wildlife Range, Moapa National Wildlife Refuge, Pahranagat National Wildlife Refuge, Death Valley National Monument and/or Devil's Hole are diminished or impaired as a result of the diversions proposed under the applications.

37. The diversions will reduce or eliminate the flows of springs in the Death Valley National Monument, Muddy River Springs Area and Lake Mead National Recreational Area, which are discharge areas for the regional groundwater flow systems, thereby impairing the senior Federal reserved water rights.

38. The cumulative effects of these diversions, along with the Applicant's applications within other parts of the regional

groundwater flow system will impair the National Park Services' senior surface and groundwater rights more quickly and/or to a greater degree than the diversions under these applications alone.

39. Depletions to the regional groundwater flow systems will occur more quickly and in greater magnitude if return flow is not discharged in the basin of origin.

40. It is not clear whether the amount requested is necessary and reasonable for municipal and domestic purposes.

41. These applications, combined with the others filed at the same time, seek a combined appropriation of 860,000 acre-feet of ground and surface water and the diversion and the exportation of such a quantity of water will deprive the basins of origin of water needed for their environment and economic well being and will destroy environmental, ecologic, scenic and recreational values the state holds in trust for its citizens.

42. The population of Las Vegas is big enough and future growth is not in the interest of the Las Vegas community, Nevada, or the nation.

43. The granting or approval of the applications will have a negative impact on Nevada's environment since the public policy of Nevada is to protect Nevada's environment, even at the expense of growth per Governor Bob Miller's January 25, 1990, State of the State Address.

44. The applications should be denied because the State Engineer is a member of the Nevada Environmental Commission and has a duty to prevent, abate and control air pollution in the state of Nevada. The air pollution in the Las Vegas Valley is so bad that the valley has been classified a non-attainment area for national and state ambient air-quality standards for carbon monoxide and PM-10 and the applications are for the purpose of securing water for growth and more growth means more air pollution. The State Engineer should be taking steps to ameliorate the air-quality problem in the Las Vegas Valley, not exacerbate it.

45. The applications should not be approved if said approval is influenced by the State Engineer's desire or need to ensure there is sufficient water for lots and condominium units created in Las Vegas Valley by subdivision maps.

46. The removal of water from the area of origin could cause economic impacts, such as precluding new agricultural development, damaging the existing agricultural economy, inhibiting or precluding opportunities for power generation, inhibiting or precluding mineral extraction, inhibiting or precluding manufacturing by space-requiring industries, damaging tourism, and concentrating population as opposed to dispersing it.

FINDINGS OF FACT

I.

The State Engineer finds the only protestants who appeared at the public administrative hearing and presented testimony and evidence in support of their protest claims were the U.S. National Park Service, U.S. Bureau of Land Management, U.S Fish and Wildlife Service, and Lund Irrigation Company. The Sierra Club, County of Inyo and Nye County did not present evidentiary cases, but rather chose to present only public comment or oral argument. The Moapa Paiute Tribe of Indians only filed written public comments.[16] All other Protestants did not provide any evidence in support of their protest claims, and as such, most of the claims will be summarily dismissed below. However, where the evidence indicates or the State Engineer believes that a protest claim raises meritorious issues, those claims are addressed below.

[16] Exhibit No. 49.

II.

The State Engineer finds no evidence was presented as to the protest claim that previous applications have been denied in these groundwater basins; therefore, this protest claim is dismissed. However, upon review of new water right filings, the State Engineer reviews actions previously taken in the relevant groundwater basin and finds that in these particular groundwater basins most denials were either for filings upon surface water sources or were for reasons not related to the perennial yield of the specific groundwater basin.

III.

The State Engineer finds evidence was provided as to the corridors by which these waters would likely be transported to the Applicant's place of use, as to the costs of the works of diversion, that the Applicant has the resources to develop these waters, a time frame for construction of works was presented, and evidence was provided that population growth in the Las Vegas area has consistently exceeded projections[17]; therefore, these protest claims are dismissed.

IV.

The State Engineer finds that all parties agree there is insufficient information to determine the potential impacts from the use of ground water as proposed under the applications, and without stressing the system by actually pumping the ground water, it is unlikely the information will ever become available, thereby continuing the current deficiency in information.

V.

The State Engineer finds there is no evidence that the public has been denied relevant information and due process; therefore, the protest claim is dismissed.

[17] Transcript, pp. 460-530.

VI.

The State Engineer finds there is evidence that the Applicant has the financial capability to develop these waters;[18] therefore, the protest claim that it lacks the financial capability for developing the applied for waters is dismissed.

VII.

The State Engineer finds no evidence was provided in support of the protest claim that use of water under the applications will cause a drop in the water table thereby drying up springs, seeps, wetlands, drawing down the water level in existing wells, causing desertification, a reduction in water quality, and a degradation of air quality due to increased dust. The State Engineer finds that his authority in the review of water right applications is limited to considerations identified in Nevada's water policy statutes, ***County of Churchill, et al. v. Ricci***, 341 F.3d 1172 (9th Circuit 2003) citing to ***Pyramid Lake Paiute Tribe of Indians v. Washoe County***, 918 P.2d 697 (Nev. 1996), and the issue as to air quality is relegated to another agency of government. Therefore, the protest claim is dismissed.

VIII.

The State Engineer finds the Applicant is asking for what it argues is the perennial or available yield of the relevant groundwater basins. With the appropriations limited as described below, the protest claim that the use of water under the applications will sanction water mining is without merit and is dismissed.

The State Engineer finds that by letter dated March 18, 1992, the Applicant's then legal counsel indicated that the Applicant was not intending to appropriate 860,000 acre-feet annually under the applications filed for what then was known as the Cooperative Water Project.[19] The letter indicated that the total amount

[18] Transcript, pp. 460-530.

[19] Official record in the Office of the State Engineer.

requested for appropriation under the project applications was approximately 180,000 acre-feet annually. Specifically, in Tikapoo Valley - Northern and Southern Parts, the Applicant originally indicated it was requesting to appropriate 3,000 acre-feet annually, while the present request is for 10,000 acre-feet annually. In Three Lakes Valley - Northern Part, the Applicant originally indicated it was requesting to appropriate 5,000 acre-feet annually, while the present request is for 2,000 acre-feet annually. In Three Lakes Valley - Southern Part, the Applicant originally indicated it was requesting to appropriate 5,000 acre-feet annually and the present request is also for 5,000 acre-feet annually.

The confusion as to the amount requested for appropriation arises from the fact that on the original applications the Applicant only listed a diversion rate and did not quantify the total number of acre-feet being requested under each application. Due to the lack of a specified quantity, some Protestants took the diversion rate from each application and assumed pumping at the requested rate 24 hours a day, 365 days per year, in order to obtain the 860,000 acre-feet annually. The State Engineer finds that while some of the total duty numbers requested for appropriation have varied since the 1992 letter from the Applicant's legal counsel, the Applicant has never indicated an intent to appropriate the amount of the diversion rate expanded, but rather an amount much less.

IX.

The State Engineer finds no substantial evidence was presented that the use of water under the applications will interfere with the BLM's responsibilities to protect wetlands, threatened and endangered species or will interfere with the BLM's ability to provide water for the multiple uses under the Federal Land Policy and Management Act including, but not limited to,

recreation, range, wildlife, minerals, watershed and fish; therefore, the protest claim is dismissed.

X.

The State Engineer finds no evidence was presented that the use of water under the applications will affect the BLM's ability to manage areas for livestock grazing, wildlife habitat and wild horses and will interfere with the purposes for which federal lands are managed; therefore, the protest claim is dismissed.

XI.

The State Engineer finds no evidence was presented that the use of water under the applications could eliminate the supplies of ground water in several areas and communities in eastern Inyo County that are dependent upon recharge from the regional carbonate-rock aquifers; therefore, the protest claim is dismissed.

XII.

The State Engineer finds no substantial evidence was presented that the use of water under the applications will cause an unreasonable lowering of the water table, degradation of water quality, destruction of environmental, ecological, scenic and recreational values, all to the detriment of the public interest; therefore, the protest claim is dismissed.

XIII.

Some Protestants claim that the Applicant has not demonstrated access to the lands necessary to transport the water, because it has not shown it has the necessary right-of-ways to develop and transport the water across lands under the jurisdiction of the United States. When it comes to some water right applications, such as those for stock watering or irrigation, the State Engineer requires proof of a grazing permit or a right of entry to federal land through a Desert Land Entry or a Carey Act application prior to the granting of a water right permit. In other instances, the State Engineer may grant a water right permit without proof of entry to the specific federal lands,

because of the circular argument the Protestants' claim presents, that is, which comes first, the water right permit or the right of entry? It is illogical for the Applicant to pursue the right of entry and environmental review that will accompany entry unless it has a water right to actually divert. The water right permit does not grant the permittee the right of ingress or egress to the relevant federal land and such entry must be demonstrated in order for a permittee to prove beneficial use of the waters. The State Engineer finds that while it is true the Applicant had not demonstrated entry as of the date of the hearing, this does not prevent the State Engineer from granting a water right permit allowing the Applicant to go forward in an attempt to obtain its right of access in order to prove beneficial use of the water.

XIV.

The State Engineer finds no evidence was presented to support the protest claim that the use of water under these applications in conjunction with the others applied for will perpetuate inefficient use of water in the Las Vegas Valley Water District service area, and will sanction and encourage the willful waste of water contrary to Nevada law and public policy; therefore, the protest claim is dismissed. The State Engineer finds evidence was presented that the Applicant is encouraging more efficient use of water in Las Vegas through various water conservation programs such as restricted watering schedules, cash for grass programs where citizens are paid to remove turf grasses, conservation plans for government facilities, tiered water rates, and landscape development restrictions.[20]

XV.

The State Engineer finds no evidence was presented to support the protest claim that the applications should be denied because the project cost will result in such an enormous rate increase that demand for water will be substantially reduced thereby

[20] Transcript, pp. 471-481.

rendering the water transfer unnecessary; therefore, the protest claim is dismissed.

XVI.

The State Engineer finds no evidence was presented that the applications were not made in good faith, but rather to lock up the water resources for use beyond current planning horizons. The State Engineer finds that evidence was provided that due to the extended drought on the Colorado River use of the water as proposed under these applications has moved to the forefront in the overall resource planning for the area and that use of water under these applications could be as early as 2007.[21] The Southern Nevada Water Authority's 2004 Water Resource Plan[22] indicates that, because of the drought conditions and the fact that water demand is significantly outpacing previous forecasts, steps have been taken to accelerate near-term development of groundwater applications in northern Clark County, as well as near-term and long-term development of water right applications in Lincoln, White Pine and Nye Counties. The State Engineer finds development of the particular groundwater rights under consideration in this ruling are within the Applicant's planning horizon; therefore, the protest claim is dismissed.

XVII.

The State Engineer finds no evidence was presented in relation to the protest claim that the applications should be denied because current and developing trends in housing, landscaping, national plumbing fixture standards and demographic patterns all suggest that the simplistic water demand forecasts upon which the proposed transfers are based substantially overstate future water demands. In February 2004, the Southern Nevada Water Authority issued its Drought Plan, which contains

[21] Transcript, p. 488; *see generally,* Transcript, pp. 460-530.

[22] Official records in the Office of the State Engineer.

recommended response measures to the current drought, including measures such as outdoor water use restrictions, and landscape development codes, among other measures. Measures that are similar to that alleged in the protest claim. However, the State Engineer finds that while these measures are a response to the current drought, they demonstrate that the trends do not change the demand forecasts; therefore, the protest claim is dismissed.

XVIII.

The applications were protested on the grounds that it would be detrimental to the public interest to grant the applications in the absence of comprehensive water resource development planning, including, but not limited to, environmental impact considerations, socioeconomic impact considerations, cost/benefit considerations, water resource evaluation by an independent entity and a water resource plan for the Las Vegas Valley Water District like that which is required of water purveyors by the Nevada Public Service Commission. The State Engineer finds the Applicant provided evidence of its comprehensive water resource development planning.[23] The State Engineer finds there is nothing in Nevada water law that requires water resource evaluation by an independent entity, that is the job of the State Engineer, and Nevada Revised Statute § 533.368 provides that if the State Engineer determines that a hydrological, environmental or other study is necessary before he makes a final determination on a water right application, he is provided the discretion to pursue said study; therefore, this protest claim is dismissed.

XIX.

The State Engineer finds that no evidence was presented that the use of water under the applications will cause air contamination and air pollution in violation of the Clean Air Act and chapter 445 of the Nevada Revised Statutes, and the enforcement of those statutory provisions of law are entrusted to

[23] Transcript, pp. 460 - 530.

other divisions of government. The State Engineer finds that his authority in the review of water right applications is limited to considerations identified in Nevada's water policy statutes, ***County of Churchill, et al. v. Ricci***, 341 F.3d 1172 (9th Circuit 2003) citing to ***Pyramid Lake Paiute Tribe of Indians v. Washoe County***, 918 P.2d 697 (Nev. 1996), and the issue as to air quality is relegated to another agency of government; therefore, the protest claim is dismissed.

XX.

The State Engineer finds that there is nothing in Nevada water law that supports the protest claim that the use of water under the applications is not in the public interest because the Applicant failed to have an independent, formal and publicly reviewable assessment of the water resources of the area, cumulative effects of the proposed diversions, mitigation measures that will reduce the impacts of the proposed extraction, and alternatives to the proposed extraction. Furthermore, a public administrative hearing was held with regard to these applications and that is a formal and public process where evidence of the water resources, impacts, and mitigation measures was presented; therefore, the protest claim is dismissed.

XXI.

The State Engineer finds no evidence was presented to support the protest claim that the applications should be denied because the population projections are unrealistic and ignore numerous constraints to growth, including traffic congestion, increased cost of infrastructure and services, degraded air quality, and protection of rare and endangered species. In fact, the evidence

indicated that actual population growth has far exceeded projected population growth;[24] therefore, the protest claim is dismissed.

XXII.

The State Engineer finds no evidence was presented to support the protest claim that the applications should be denied because the Applicant's conservation programs are inefficient efforts and the Applicant has failed to make a good faith effort to efficiently use current supplies, and in fact evidence was presented to show the strides the Applicant has taken towards conservation in its service area;[25] therefore, the protest claim is dismissed.

XXIII.

The State Engineer finds that no evidence was presented to support the protest claim that the use of water under the applications will cause impacts to Pahranagat Valley ground and surface waters, area residents, agricultural operations and cause socioeconomic and environmental impacts or that the request for the appropriation of water from Tikapoo Valley - Northern Part is so close to Pahranagat Valley as to cause harm to the resources of Pahranagat Valley or that the proposed point of diversion under Application 53948 is so near the wells serving the Town of Alamo that pumping may cause a drawdown in those wells. In fact, the Applicant withdrew its applications in the Alamo area under the belief that the water was needed by the community for its future development.[26] Furthermore, by reducing some of the quantities initially requested to an authorized appropriation that is within the natural recharge of the groundwater basin, the State Engineer finds the chance of interference with water rights in Pahranagat Valley is reduced; therefore, the protest claim is dismissed.

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[24] Transcript, pp. 460-530.

[25] Transcript, pp. 460-530.

[26] Transcript, p. 467.

XXIV.

The State Engineer finds no evidence was presented to support the protest claim that the appropriation of water under the applications may curtail or make community growth in Alamo prohibitively expensive; therefore, the protest claim is dismissed. The State Engineer further finds that no water is being requested for appropriation from Pahranagat Valley; therefore, these applications cannot unduly limit the future growth and development in the groundwater basin in which Alamo is located.

XXV.

The State Engineer finds that the protest claim that lowering the water table in Pahranagat Valley would have tremendous impacts on the vegetative resource of the valley, impacting wildlife, including threatened and endangered species, outdoor recreation and causing economic impacts is not applicable, because no evidence was presented that indicated any lowering of the water table in Pahranagat Valley would be caused due to the subject applications. The State Engineer finds no water is being requested for appropriation from Pahranagat Valley, and by the reduction in the quantities authorized for appropriation from the quantities initially requested to an amount within the natural recharge of the relevant groundwater basins, the chance of impacts to Pahranagat Valley is low; therefore, the protest claim is dismissed.

XXVI.

The State Engineer finds that no evidence was presented to support the protest claim that use of water under the applications will cause significant visual and aesthetic impacts by de-greening Pahranagat Valley, and installing unsightly construction improvements. Further, the State Engineer has no control over or statutory mandate for aesthetics; therefore, the protest claim is dismissed.

XXVII.

The State Engineer finds that no evidence was presented to support the protest claim that exporting all the water from the Alamo/Pahranagat Valley Region could impact the community by limiting local development and growth causing a downward economic spiral, causing a major disruption to existing community cohesiveness, resulting in social problems and disrupting the family-oriented structure of the Mormon Church and causing destabilization as to basic rural philosophies forever changing the quality of life. In fact, there is no evidence that the water applied for under these applications would come from the Pahranagat/Alamo area; therefore, the protest claim is dismissed.

XXVIII.

The State Engineer finds that no evidence was presented to support the protest claim that use of water under the applications would interfere with customary uses of grazing areas or ranges; therefore, the protest claim is dismissed.

XXIX.

The State Engineer finds that no evidence was presented to support the protest claim that use of water as proposed under the applications would interfere with the rights of the Ely Shoshone Tribe under the Treaty of Ruby Valley; therefore, the protest claim is dismissed.

XXX.

The State Engineer finds that no evidence was presented to support the protest claim that use of water as proposed under the applications would conflict with the rights claimed by the Moapa Band of Paiute Indians to the waters of the Muddy River. In fact, the Tribe had its hydrogeologist file comments on the development proposed under the applications who indicated that "[r]egardless of configurations of downgradient flows from the basins, the Tribe's water resources, based on the Muddy River and the southern flow field of the Arrow Canyon Range carbonate aquifer, should not

be significantly impacted;"[27] therefore, the protest claim is dismissed.

XXXI.

The State Engineer finds that, other than as discussed later in this ruling, no evidence was presented to support the protest claim that use of water as proposed under the applications will degrade wetlands and riparian habitats, including those in the Great Basin National Park, Lake Mead National Recreation Area and national wildlife refuge units; therefore, the protest claim is dismissed.

XXXII.

The State Engineer finds that no evidence was presented to support the protest claim that use of water as proposed under the applications will damage wetlands, springs, seeps and phreatophytes, which provide water and habitat for migratory species, other wildlife, grazing livestock and other existing uses; therefore, the protest claim is dismissed.

XXXIII.

The State Engineer finds that no evidence was presented to support the protest claim that the public interest will not be served if water and water-related resources and senior surface and groundwater rights in the nationally important Pahranagat National Wildlife Refuge are diminished or impaired as a result of the diversions proposed under the applications; therefore, the protest claim is dismissed.

XXXIV.

The State Engineer finds, except as noted below in reference to the recent claim that there may be some groundwater flow from the east side of Tikapoo Valley - Southern Part towards Coyote Springs Valley, which is part of the White River Flow System, no evidence was presented to support the protest claim that the diversions will reduce or eliminate the flows of springs in the

[27] Exhibit No. 49.

Lake Mead National Recreational Area and the Muddy River Springs Area thereby impairing the claimed senior Federal reserved water rights. The State Engineer finds that while these areas are or may be discharge areas for a portion of the regional groundwater flow systems, they are not considered main discharge areas for the part of the flow system of concern under these applications, that is, the Death Valley Flow System; therefore, the protest claim is dismissed.

XXXV.

The State Engineer finds that no evidence was presented to support the protest claim that the cumulative effects of these diversions, along with the Applicant's applications within other parts of the regional groundwater flow system will impair the National Park Services' senior surface and groundwater rights more quickly and/or to a greater degree than the diversions under these applications alone. The State Engineer finds the Applicant indicated that under these applications it is not requesting anything different than any other water right applicant in the state of Nevada. The Applicant indicated that it is only asking to appropriate the available perennial yield of each particular groundwater basin independent of the contributions from the underlying regional carbonate flow system and the water would be removed essentially from the alluvial aquifer system.[28] The State Engineer finds that the analysis that follows as to water available for appropriation does take into consideration that water appropriated from one basin will reduce the inflow to another basin, and cannot be available for appropriation in both basins; therefore, the protest claim is dismissed.

[28] Transcript, p. 588.

XXXVI.

The State Engineer finds that no evidence was presented to support the protest claim that depletions to the regional groundwater flow systems will occur more quickly and in greater magnitude if return flow is not discharged in the basin of origin. The State Engineer finds that interbasin transfers of water are provided for in NRS § 533.370(5) and are reviewed under the statutory criteria provided therein; therefore, the protest claim is dismissed.

XXXVII.

The State Engineer finds that no evidence was presented to support the protest claim that it is not clear whether the amount requested is necessary and reasonable for municipal and domestic purposes. Applicants who request an appropriation for municipal water use are required by NRS § 533.340(3) to provide in the application an indication of the approximate number of persons to be served and the approximate future requirement. While the Applicant did not have this information physically on its application, as it should have, by letter dated March 22, 1990, the Applicant supplemented its applications and indicated the approximate number of persons to be served was 800,000 in addition to the 618,000 persons it was currently serving. Further, the Southern Nevada Water Authority's 2004 Water Resource Plan[29] provides an entire chapter on the projections of the need for water in the area through 2050, and the need for future resources in relationship to the population growth was testified to at the hearing;[30] therefore, the protest claim is dismissed.

XXXVIII.

The State Engineer finds that the protest claim that the population of Las Vegas is big enough and future growth is not in

[29] Official record in the Office of the State Engineer.

[30] Transcript, pp. 460-530.

the interest of the Las Vegas community or the nation is not a subject for determination within his statutory duties; therefore, the protest claim is dismissed.

XXXIX.

A Protestant alleged that since the public policy of Nevada is to protect Nevada's environment, even at the expense of growth per Governor Bob Miller's January 25, 1990, State of the State Address, granting the applications will have a negative impact on Nevada's environment. However, the Protestant, provided no evidence in support of this protest claim or why said claim would fall under the provisions of Nevada water law; therefore, the protest claim is dismissed.

XL.

A Protestant alleged that the applications should be denied because the State Engineer is a member of the Nevada Environmental Commission and has a duty to prevent, abate and control air pollution in the State of Nevada and the air pollution in the Las Vegas Valley is so bad that the valley has been classified a non-attainment area for national and state ambient air-quality standards for carbon monoxide and PM-10. Since the applications are for the purpose of securing water for growth and more growth means more air pollution, the State Engineer should be taking steps to ameliorate the air-quality problem in the Las Vegas Valley, not exacerbate it. The State Engineer finds this protest claim is not within the considerations found under Nevada water law, and it was held in ***County of Churchill, et al. v. Ricci***, 341 F.3d 1172 (9th Circuit 2003) citing to ***Pyramid Lake Paiute Tribe of Indians v. Washoe County***, 918 P.2d 697 (Nev. 1996) that the State Engineer's authority in the review of water right applications is limited to considerations identified in Nevada's water policy statutes. Thus, the State Engineer does not include a consideration of factors identified in directives in Nevada statutes requiring other state administrative agencies to act in consideration of water right applications; therefore, the protest

claim is dismissed.

XLI.

The State Engineer finds no evidence was provided in support of the protest claim that applications should not be approved if said approval is influenced by the State Engineer's desire or need to ensure there is sufficient water for lots and condominium units created in the Las Vegas Valley by subdivision maps. The State Engineer finds it is his responsibility and obligation to follow the law, not his desire; therefore, the protest claim is dismissed.

XLII.

The State Engineer finds the protest issues not addressed above include:

Whether the amount of water requested for appropriation under the applications exceeds the annual recharge of the specific groundwater basins and would thereby conflict with existing rights;

Whether the use of water under the applications will deplete the waters of the Ash Meadows/Death Valley regional groundwater flow system, which may ultimately result in a reduction in spring flow at Ash Meadows and impact not only threatened and endangered species, but also wetlands;

Whether the use of water under the applications will interfere with the BLM's responsibilities to protect wetlands and to conserve listed threatened or endangered species;

Whether the use of water under the applications would impair and conflict with existing rights, be against public policy and contrary to statute and interfere with existing water rights;

Whether the use of water as proposed under the applications will degrade wetlands and riparian habitats, including those in the Death Valley National Monument;

Whether the use of water as proposed under the applications will interfere with water rights held by the U.S. Fish and Wildlife Service, and whether the underground source of water proposed to be appropriated will intercept the source of water that now maintains the numerous springs, seeps, marshes, streams, riparian and mesquite habitats that support the wildlife and plant resources, including threatened and endangered species in Nevada;

Whether the public interest will not be served if water and water-related resources and senior surface and groundwater rights in the nationally important Ash Meadows National Wildlife Refuge, Desert National Wildlife Range, Moapa National Wildlife Refuge, Devil's Hole, and Death Valley National Monument are diminished or impaired as a result of the diversions proposed under the applications;

Whether these applications, combined with the others filed at the same time, seek a combined appropriation of 860,000 acre-feet of ground and surface water and the diversion and the exportation of such a quantity of water will deprive the basin of origin of water needed for its environment and economic well being and will destroy environmental, ecologic, scenic and recreational values the state holds in trust for its citizens;

Whether the removal of water from the areas of origin could cause economic impacts, such as precluding new agricultural development, damaging the existing agricultural economy, inhibiting or precluding opportunities for power generation, inhibiting or precluding mineral extraction, inhibiting or precluding manufacturing by space-requiring industries, damaging tourism, and concentrating population as opposed to dispersing it.

XLIII.

Central to the focus of many of the remaining protest issues is the appropriation of significant quantities of ground water from groundwater basins that may have some connection to the carbonate-rock aquifer flow systems, and whether the amount requested for appropriation exceeds the annual natural recharge to

those groundwater basins, would conflict with existing rights, be against public policy, degrade wetlands, springs, seeps, riparian or mesquite habitats, including water-related resources in Death Valley National Monument, harm threatened or endangered species or their habitats. In response, the Applicant's witnesses indicate that the Applicant is not requesting anything different than any other water right applicant in the state of Nevada, that is, to be allowed to appropriate water available for appropriation. The Applicant indicates that at this point it is only asking to appropriate the available perennial yield of each particular groundwater basin, which would be removed essentially from the alluvial aquifer system, independent of the contributions from the underlying regional carbonate system.[31] However, as noted in the next paragraph in relation to the Applicant's request to appropriate the available or sustainable yield of the groundwater basins, the Applicant's witness bases the argument for appropriating this sustainable yield in part on the groundwater basins having some connection to flow in the regional carbonate-rock aquifers.

In determining the quantity of water that can be appropriated from a groundwater basin, the State Engineer has historically looked to the perennial yield of that basin. The perennial yield of a groundwater reservoir may be defined as the maximum amount of ground water that can be salvaged each year over the long term without depleting the groundwater reservoir. Perennial yield is ultimately limited to the maximum amount of natural discharge that can be salvaged for beneficial use. The perennial yield cannot be more than the natural recharge to a groundwater basin and in some

[31] Transcript, p. 588.

cases is less. If the perennial yield is continually exceeded, groundwater levels will decline.[32]

Withdrawals of ground water in excess of the perennial yield may contribute to adverse conditions such as water quality degradation, storage depletion, diminishing yield of wells, increased economic pumping lifts, land subsidence and possible reversal of groundwater gradients which could result in significant changes in the recharge-discharge relationship.

The Applicant argues that the historical perennial yield of these groundwater basins is not the number by which the State Engineer should determine the quantity of water available for appropriation under these applications, and requests the State Engineer allow it to appropriate what it defines as the available yield or safe yield of the groundwater basin, which it defines as a combination of all the natural recharge into the basin and transitional storage (that portion of water in storage that will be removed from storage while the system is responding to pumping and changing from its natural equilibrium to its new equilibrium).[33] It bases this argument on the theory that in basins with essentially no evapotranspiration, with great quantities of water in storage[34] and some connection to flow in the regional carbonate-rock aquifers, the State Engineer should determine a safe yield, available yield or sustainable yield that can be appropriated and should not confine himself to the traditional perennial yield concept. The Applicant requests that the State Engineer look at the quantity of water provided from natural recharge, plus some amount from transitional storage as

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[32] State Engineer's Office, Water for Nevada, State of Nevada Water Planning Report No. 3, p. 13, October, 1971.

[33] Transcript, pp. 572-573.

[34] Nearly 8 million acre-feet is in the upper 100 feet of saturated sediments of these groundwater basins sitting on top of the carbonate rocks, Exhibit No. 92, p. 47.

the water available for appropriation.[35] Based on this theory, the Applicant requests the State Engineer allow the appropriation of all the natural recharge to each groundwater basin by using the processes of development and monitoring.

A witness for the federal agencies gave several definitions of safe yield, including: it is the quantity of water that can be pumped regularly and permanently without dangerous depletion of the storage reserve; or it is the rate at which water can be withdrawn from an aquifer for human use without depleting the supply to such an extent that withdrawal at this rate is no longer economically feasible; or it is the amount of water that can be withdrawn annually from a groundwater basin without producing an undesired result.[36]

The Applicant's witnesses indicated that when the pumping of water is initiated virtually all of it comes out of storage for a very long period of time. If the water is pumped long enough, the pumping eventually captures discharge, because over time less water comes from storage and a transition is made from capturing storage to capturing groundwater outflow (discharge), since there is essentially no evapotranspiration in these groundwater basins. However, the Applicant's witnesses also believe, because of the presence of many subsurface physical structures in this region that tend to reduce permeability and because of the distances to sensitive areas, impacts will not be seen for hundreds of years, and if measurable, will be minimal.[37] The Applicant's witnesses presented evidence as to the various estimates of recharge that have been calculated over the years for the basins in question, and provided evidence why their natural recharge estimates should be considered superior to the previous estimates and should be

[35] Transcript, p. 572.

[36] Transcript, pp. 274-275.

[37] Transcript, pp. 543-544, 570-572.

used as the natural recharge figures, equating that to the amount that should be available for appropriation in these groundwater basins.[38]

The federal agencies' witness argued that from a groundwater or geology side, if there is a hydraulic connection between basins, the resource should be managed in a comprehensive manner and not as it has been historically done in Nevada, basin by basin on the basis of perennial yield of each particular basin. The witness found a conflict between how groundwater basins in Nevada have been managed administratively for nearly 100 years and how the carbonate-rock aquifer system actually works.[39] He indicated that in his opinion recharge rates are important, but should not be used as the primary basis for determining how much water can be pumped from these groundwater basins safely. "Recharge is a very difficult parameter to measure,"[40] and if recharge rates are used to determine pumping volumes, then it was his opinion that the uncertainty in those rates should be recognized, no matter which methodology is used to analyze the amount of recharge and a conservative approach should be taken.[41] In this witness' opinion, the decision of how much and where water can be appropriated should be made on the basis of estimates of impacts on resources, in this case discharge.[42] The witness indicated his belief that the rate of recharge does not provide sufficient information to determine the sustainable yield of the system.[43]

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[38] Exhibit No. 92, pp. 34, Table 6, and testimony of Terry Katzer and David Donovan, Transcript, pp. 530-672.

[39] Transcript, p. 270.

[40] Transcript, p. 342.

[41] Transcript, pp. 330, 403.

[42] Transcript, p. 342.

[43] Transcript, p. 272.

The federal agencies also assert that the water discharged from the system is either already appropriated by the federal agencies or is connected to areas where there are concerns as to either threatened or endangered species and habitat that may be impacted if the present groundwater discharge is diminished. Further concern on the part of the federal agencies is that as water is released from storage with the initiation of pumping, it will delay the impact of said pumping and the replenishment of this storage will also delay any recovery, if and when pumping is stopped. Finally, the federal agencies are convinced that the pumping of ground water will eventually impact discharge areas since the "concept of mass balance requires that the discharge areas will be impacted . . . [h]owever, [the witness noted that] the timing and the magnitude of that impact is currently unknown."[44]

"Pumping decisions made today may ultimately affect surface water resources, (river flows, lake levels, discharges to wetlands and springs, et cetera), but these effects may not be fully realized for many years. Equilibrium to pumping is reached only when withdrawal is balanced by capture and in many circumstances, long periods are necessary before even an approximate equilibrium condition can be reached."[45]

> In other words, the decisions made today can have impacts that may not occur for decades or hundreds of years and . . . . we need to recognize that time delay occurs. . . . [and] if the decision is made that there is an impact and that impact is detrimental against what society would like to have happen it would take a long time for the system to recover. The effects of pumping continue past the time that the pumping is stopped, especially when the point that's being affected is a long distance away.
>
> And so putting it in the Devil's Hole example, if

[44] Transcript, pp. 330-331, 394.

[45] Exhibit No. 233, Transcript, p. 277.

> at some point in the future, and it may be decades or hundreds of years, if water level declines occur and a decision is made to stop the pumping, that water level decline will continue to increase before the effects of turning off the pumping start to increase the water levels.[46]

The witness for the federal agencies testified that recharge does not replace the water removed from storage, but the Applicant's witness testified that transitional storage is recharge.[47] The federal witness said that the only source is the water elsewhere in storage, which will cause the lowering of water levels in the distal areas of the drawdown cone.[48] If there's not a lot of recharge going on it will lengthen the amount of time for recovery to occur.[49]

The appropriations under consideration in this ruling are from groundwater basins that are considered to be within the Death Valley Regional Flow System, which terminates in the Ash Meadows and Death Valley areas. The State Engineer notes that recent information indicates that appropriations from the east side of Tikapoo Valley - Southern Part (Applications 53950 and 53951) may be in an area where the groundwater flow may trend towards Coyote Springs Valley, which is part of the White River Flow System where there is a groundwater study in place to gather more information as to the effect of the pumping proposed in that groundwater basin.[50]

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[46] Transcript, pp. 277-278.

[47] Transcript, pp. 278, 579.

[48] Transcript, p. 278.

[49] Transcript, pp. 278-279.

[50] State Engineer's Order No. 1169, dated March 8, 2002, official records in the Office of the State Engineer.

The Applicant requested the State Engineer combine Tikapoo Valley - Northern and Southern Parts into one basin for the quantification of the amount of recharge and the appropriation of water from the basins.[51]

Since there is no significant evapotranspiration in these particular groundwater basins, the Applicant equates recharge with discharge, and the natural recharge to the groundwater basins plus some amount of transitional storage as the amount of water that is available for appropriation, less what is already appropriated.[52]

The federal agencies agree that some amount of water should be permitted for withdrawal in order to stress the system, but they assert that because of the lack of data,[53] any water rights issued should expire after a certain period of time, and only after sufficient data is available should permanent rights be granted.[54]

The comments presented by Moapa Paiute Tribe agreed that development, based on an available yield concept, where ground water is exploited primarily from storage, might be a useful water development strategy for these groundwater basins. "Hydraulic continuity with downgradient regional discharge areas is limited based on existing, but sparse, fluid potential databases. These databases indicate that relatively large changes in total storage within the four basins of exploitation will have minimal impact on distant regional discharge."[55] However, the Tribe's comments include a very significant caveat that "[a] basic reality related

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[51] *See*, File No. 53948, letter dated May 19, 2003, official records in the Office of the State Engineer.

[52] Transcript, p. 577.

[53] Transcript, pp. 179-180.

[54] Transcript, pp. 184-185.

[55] Exhibit No. 49.

to the Available Yield concept is that pumping should be markedly reduced or cease in the basin of exploitation at some point in time."[56]

The State Engineer finds the long-standing policy of the Office of the State Engineer has been to manage groundwater basins on an individual basis and management of basins on an individual basis allows for the regional consideration of available pumping sites and to minimize potential impacts. The State Engineer finds the Applicant did not provide any substantial evidence to support its theory that Tikapoo Valley - Northern and Southern Parts are subbasins to each other. The State Engineer finds he will not readily change hydrographic basin boundaries or combine multiple basins into one; therefore, the request to combine Tikapoo Valleys Northern and Southern Parts into one basin is denied.

The State Engineer finds the historical management of groundwater basins allows for the consideration of the regional groundwater flow system, and can account for discharge from one basin being available or not available for appropriation in another basin.

The State Engineer finds the perennial yield analysis provides the measure of caution necessary to protect the resources of a groundwater basin or hydrologically connected basins. The State Engineer finds that nearly 50 years ago, in relation to a water right application filed in the Las Vegas Basin, the State Engineer found that a portion of the water in storage could be placed to beneficial use without appreciable damage to the groundwater basin and existing rights. However, at all times the State Engineer recognized that the appropriation of storage water would not be a permanent water right as it was only a question of time until the annual quantity of water diverted from the groundwater basin would have to be reduced to the annual recharge, and the allowance of the appropriation from storage was based on

[56] Exhibit No. 49.

the premise that Colorado River water would eventually provide the resource for the Las Vegas area and the appropriation from storage would cease.[57]

The State Engineer finds he will approach the question of water available for appropriation from these groundwater basins from a perennial yield analysis. The State Engineer finds that recharge is a difficult parameter to measure, and that he should recognize the uncertainty in the recharge estimates and approaches them with caution. The State Engineer finds he is not sufficiently convinced that calculating the appropriation of water from storage as part of the yield that could be appropriated under these applications would not threaten to prove detrimental to the public interest.

The Applicant will find that in some of these particular basins the State Engineer will allow for the appropriation of the annual natural recharge less the quantity already appropriated and any water necessary to remain in the basin for future development, but he will accept the federal agencies concern that the basins should be managed comprehensively, and that is accomplished by discounting the water appropriated in one groundwater basin from the quantity discharged to another groundwater basin to avoid double accounting and regional over appropriation.

XLIV.

The Applicant's witnesses presented evidence in support of its claim as to the amount of recharge to these groundwater basins. The witnesses argue they have more certain and accurate methods of estimating recharge and estimated recharge to these groundwater basins to be:

[57] State Engineer's Ruling No. 219, dated December 13, 1955, official records in the Office of the State Engineer.

Tikapoo Valley -	Northern Part	7,600 afa
Tikapoo Valley -	Southern Part	3,000 afa
Three Lakes Valley -	Northern Part	2,300 afa
Three Lakes Valley -	Southern Part	5,300 afa.[58]
	Total	18,200 afa.

Other estimates as to the quantity of recharge in these groundwater basins provide a fairly wide range of numbers. For example, in 1970 Rush estimated recharge to these groundwater basins to be:

Tikapoo Valley -	Northern Part	2,600 afa
Tikapoo Valley -	Southern Part	3,400 afa
Three Lakes Valley -	Northern Part	2,000 afa
Three Lakes Valley -	Southern Part	6,000 afa.[59]
	Total	14,000 afa

Hevesi and others in 2002[60] estimated recharge to these groundwater basins to be:

Tikapoo Valley -	North and South	12,391 afa
Three Lakes Valley -	Northern Part	2,675 afa
Three Lakes Valley -	Southern Part	4,100 afa.[61]
	Total	19,166 afa

[58] Exhibit No. 92, pp. 34, 47. The State Engineer notes the numbers used in Table 6 of page 34 are actually Tikapoo Valley - Northern and Southern Part 10,563 acre-feet annually, Three Lakes Valley North 2,336 acre-feet annually, and Three Lakes Valley South 5,347 acre-feet annually, while the numbers used in Table 10, p. 47 are those given in the body of the ruling.

[59] Exhibit No. 92, p. 34.

[60] Exhibit No. 92, p. 34.

[61] Exhibit No. 92, p. 34.

However, in 2003 Hevesi re-estimated the recharge for these groundwater basins to be:

Tikapoo Valley -	Northern Part	1,420 - 3,970 afa
Tikapoo Valley -	Southern Part	630 - 2,295 afa
Three Lakes Valley -	Northern Part	430 - 1,490 afa
Three Lakes Valley -	Southern Part	450 - 1,300 afa. [62]
	Total	2,930 - 9,050 afa

In reviewing the different estimates of recharge to the groundwater basins, the federal agencies' witness indicated, "[o]ne thing that's very distracting here is that there is not very good agreement on what the recharge rate is."[63]

A potential problem with the Applicant's evaluation of the altitude precipitation relationship is that it includes data in the vicinity of the Tikapoo and Three Lakes study areas, but there are no precipitation stations actually within the study area. However, the Applicant's witnesses did not believe this was problematic because, the altitude/precipitation data for areas east and west of the study area have high correlation coefficients thereby suggesting similar data can be used in the study area.

The lack of data causes concern for the State Engineer. Further, the Applicant's witnesses acknowledged that in their recharge analysis recharge was distributed across the entire basin, including the valley floor. Previous uses of the Maxey-Eakin method expressly excluded recharge to the valley floor by adjusting the altitude precipitation coefficients such that no recharge occurred on the valley floor. The Applicant's witnesses

[62] J. Hevesi, A. Flint, and L. Flint, Water-Resources Investigation Report 03-4090, ***Simulation of Net Infiltration and Potential Recharge Using a Distributed-Parameter Watershed Model of the Death Valley Region, Nevada and California***, United States Geological Survey, 2003.

[63] Transcript, p. 289.

argue that recharge does occur on the valley floor particularly below intermittent streams.[64] However, there is no quantification of what those recharge values might be.

The State Engineer does not dispute the claim that recharge may occur on the valley floor below intermittent and ephemeral streams. However, the Applicant's witnesses offered no evidence showing that the modified Maxey-Eakin technique they employed accurately estimates the total valley-floor recharge below these stream channels. Furthermore, it is widely accepted that the original Maxey-Eakin technique was an empirical trial and error technique designed to match estimates of discharge on a basin-wide scale. While the technique applied recharge only to the mountains and upper valley slopes, the State Engineer believes that other sources of recharge, including recharge along basin floor stream drainages, were implicitly included in the basin totals. Recent peer-reviewed studies[65] have shown strong evidence of a net upward water flux in the upper 30 to 100 meters in the interdrainage areas of select arid basins similar to the Tikapoo and Three Lakes basins, including sites at Yucca Flat and Amargosa Desert. This research concludes that present-day recharge below interdrainage areas is negligible, roughly 0.1 mm per year, as compared to the Applicant's estimated range of approximately 1 to 6 mm per year.

The State Engineer finds the wide range of recharge estimates provided by different experts supports the federal agencies' position that recharge is a difficult parameter to measure, and if recharge rates are used to determine pumping volumes, then the uncertainty in those rates should be recognized. The State Engineer finds the aquifer recharge from precipitation ranges from

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[64] Transcript, pp. 657-658.

[65] Scanlon and others, 2003, Water Resources Research, v. 39, no. 7, pp .3-1 - 3-17; Walvoord and others, 2002, Water Resources Research, v. 38, no. 12. pp. 44-1 - 44-15.

2,390 acre-feet annually to over 19,166 acre-feet annually for the four groundwater basins under consideration here. This is a difference of approximately 800 percent, and provides the State Engineer with a reason to show caution in accepting newly presented recharge estimates. The State Engineer finds, due to the uncertainty of the quantity of actual recharge, he has chosen to discount the Applicant's estimates of recharge for the subject basins and use the recharge estimates provided by Rush in 1970 as they are a middle ground and consistent with previous rulings made by the State Engineer.

XLV.

For a groundwater basin, which has no evapotranspiration, such as the basins under consideration here, the perennial yield has been established as one-half the volume of the basin discharge.[66] The State Engineer finds that in basins where the volume of basin discharge has been used to establish the perennial yield, said volume was not adjusted to account for any quantity of water previously appropriated in a hydrologically connected groundwater basin. If the water appropriated in an "upstream" basin is not deducted from the amount which discharges to the "downstream" basin or basins, it creates the potential for double accounting and regional over appropriation.

In determining the amount of water available for appropriation, in basins where outflow from one basin is part of the inflow to another basin, the State Engineer must take into consideration the amount of water appropriated in the "upstream" basin and discount that amount from the inflow into the "downstream" basin. Thus, the State Engineer is still able to manage the groundwater basins as they have been historically managed administratively, but also take into consideration the

[66] State Engineer's Office, Water for Nevada, State of Nevada Water Planning Report No. 3, Oct. 1971.

concerns that groundwater basins must be considered hydrologically connected.

XLVI.

For Tikapoo Valley - Northern Part, Rush[67] established the basin recharge to be 2,600 acre-feet annually, basin inflow to be zero, the basin outflow to Tikapoo Valley - Southern Part to be 2,600 acre-feet annually, and the perennial yield to be 1,300 acre-feet annually, i.e., one-half the amount of basin outflow.[68]

The State Engineer finds the total quantity of water that can be appropriated from Tikapoo Valley - Northern Part is the 2,600 acre-feet annually of basin outflow, limited by a reduction for existing water rights, as indicated below, and the interbasin transfer factors that must be considered and are also addressed below.

As discussed previously, the perennial yield in basins with no evapotranspiration, as is the case with Tikapoo Valley - Northern Part, was established as one-half of the basin outflow. By allowing the appropriation of the entire 2,600 acre-feet of annual basin outflow, the State Engineer recognizes that he is not following the historical practice of only appropriating the perennial yield, that being only one-half the basin discharge. However, under pumping equilibrium conditions, the basin outflow decreases proportionally to the amount of water pumped. Therefore, the amount of water determined to be available for appropriation could be established as the amount of outflow provided the decrease in basin outflow is reduced proportionally.

A majority of the research indicates that the groundwater flow gradient (outflow) from Tikapoo Valley - Northern Part is to Tikapoo Valley - Southern Part and the records of the State Engineer's office indicate there are no existing appropriations in

[67] Exhibit Nos. 172, 177.

[68] State Engineer's Office, Water for Nevada, State of Nevada Water Planning Report No. 3, pp. 23, 48, Oct. 1971.

the down-gradient basin, being Tikapoo Valley - Southern Part, which may be impacted. The State Engineer is not required to let outflow to the down-gradient basin, as long as existing rights will not be impacted and basin inflow values are modified to prevent double accounting of the resource. Therefore, the State Engineer finds the amount of basin outflow from Tikapoo Valley - Northern Part into Tikapoo Valley - Southern Part is adjusted from 2,600 acre-feet annual to zero.

XLVII.

For Tikapoo Valley - Southern Part, Rush[69] established the basin recharge to be 3,400 acre-feet annually, inflow to the basin from Tikapoo Valley - Northern Part to be 2,600 acre-feet, the basin outflow to Three Lakes Valley - Northern Part to be 6,000 acre-feet, and the perennial yield to be 3,000 acre-feet annually, i.e., one-half of the basin outflow.[70] As previously determined, the basin outflow from Tikapoo Valley - Northern Part is reduced to zero to account for the water appropriated from that groundwater basin, which reduces the basin outflow to Three Lakes Valley - Northern Part from 6,000 acre-feet annually to the natural recharge of 3,400 acre-feet annually.

The State Engineer acknowledges the claims that some of the basin discharge from Tikapoo Valley - Southern Part may flow towards Coyote Springs Valley and is cognizant of these claims in this analysis. However, the claim of basin outflow from Tikapoo Valley - Southern Part to Coyote Springs Valley is relatively recent with no quantification; therefore, the State Engineer will accept the adjusted 3,400 acre-feet of basin outflow from Tikapoo

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[69] F.E. Rush, Water Resources Reconnaissance Series Report 54, Regional Ground-water Systems in the Nevada Test Site Area, Nye, Lincoln, and Clark Counties, Nevada, Nevada Department of Conservation and Natural Resources, Division of Water Resources in cooperation with the United States Geological Survey, 1970.

[70] State Engineer's Office, Water for Nevada, State of Nevada Water Planning Report No. 3, pp. 23, 48, Oct. 1971.

Valley - Southern Part to Three Lakes Valley - Northern Part as the basis for this analysis. The implementation of a monitoring plan as required below, in conjunction with the existing monitoring plan in Coyote Springs Valley, will provide assurances that impacts are minimal to the Coyote Springs Valley water resources from groundwater pumpage within Tikapoo Valley - Southern Part.

For Tikapoo Valley - Southern Part the State Engineer will return to the traditional method for establishing the perennial yield in basins with no evapotranspiration, as is the case with Tikapoo Valley - Southern Part, that being one-half the basin discharge. Establishing the perennial yield as one-half the basin discharge will allow for the appropriation of additional water in the down-gradient basin, which may be more accessible for development.

The State Engineer finds the total quantity of water that can be appropriated from Tikapoo Valley - Southern Part is 1,700 acre-feet annually limited by a reduction for existing water rights and the interbasin transfer factors that must be considered and are addressed below, and the amount of basin outflow from Tikapoo Valley - Southern Part into Three Lakes Valley - Northern Part is further reduced from 3,400 acre-feet annually to 1,700 acre-feet annually.

XLVIII.

For Three Lakes Valley - Northern Part, Rush[71] established the basin recharge to be 2,000 acre-feet annually, inflow to the basin from Tikapoo Valley - Southern Part to be 6,000 acre-feet annually, the basin outflow to Indian Springs Valley to be 8,000 acre-feet, and the perennial yield to be 4,000 acre-feet annually,

[71] F.E. Rush, Water Resources Reconnaissance Series Report 54, Regional Ground-water Systems in the Nevada Test Site Area, Nye, Lincoln, and Clark Counties, Nevada, Nevada Department of Conservation and Natural Resources, Division of Water Resources in cooperation with the United States Geological Survey, 1970.

i.e., one-half the basin outflow.[72] As previously established, the basin outflow from Tikapoo Valley - Southern Part was adjusted from 6,000 acre-feet annually to 1,700 acre-feet annually, which reduces the basin outflow from Three Lakes Valley - Northern Part into Indian Springs Valley from 8,000 acre-feet annually to 3,700 acre-feet annually (1,700 acre-feet annually of inflow from Tikapoo Valley - Southern Part, plus 2,000 acre-feet recharge).

The State Engineer acknowledges that recent studies indicate that some of the basin discharge from Three Lakes Valley - Northern Part may flow to the east and is cognizant of these claims in this analysis. However, the claim of basin flow to the east is relatively recent with no quantification; therefore, the State Engineer will accept the 3,700 acre-feet annually of basin outflow from Three Lakes Valley - Northern Part to Indian Springs Valley as the basis for this analysis. The implementation of a monitoring plan as required below will provide additional information relevant to basin flow gradients and provide assurances that impacts from groundwater pumpage are minimal.

The State Engineer finds the total quantity of water that can be appropriated from Three Lakes Valley - Northern Part is the 3,700 acre-feet annually of basin outflow, limited by a reduction for existing water rights, and the interbasin transfer factors that must be considered and are addressed below.

As discussed previously, the perennial yield in basins with no evapotranspiration, as is the case with Three Lakes Valley - Northern Part, was established as one-half of the basin outflow. By allowing the appropriation of the entire 3,700 of annual basin outflow, the State Engineer recognizes that he is not following the historical practice that the perennial yield is only one-half the basin outflow. The records of the State Engineer's office indicate that there are existing appropriations in the down-

[72] State Engineer's Office, Water for Nevada, State of Nevada Water Planning Report No. 3, pp. 23, 48, Oct. 1971.

gradient basin being Indian Springs Valley, which may be impacted. However, the existing perennial yield in Indian Springs Valley and basin inflow from Three Lakes Valley - Southern Part, which is discussed below, are sufficient for the existing and future development within Indian Springs Valley.

The State Engineer is not required to allow outflow to the down-gradient basin provided existing rights are not impacted and basin outflow values are modified to prevent double accounting of the water. Therefore, the State Engineer finds the amount of basin outflow from Three Lakes Valley - Northern Part into Indian Springs Valley is further reduced from 3,700 acre-feet annually to zero.

XLIX.

For Three Lakes Valley - Southern Part, Rush[73] established the basin recharge to be 6,000 acre-feet annually, inflow to the basin from Las Vegas Valley to be 4,700 acre-feet annually, and the basin outflow to Indian Springs Valley to be 10,700 acre-feet.[74]

The Las Vegas Valley groundwater basin from which the 4,700 acre-feet annually of inflow into Three Lakes Valley - Southern Part originates is an over-appropriated groundwater basin. Under pumping equilibrium conditions, basin discharge and evapotranspiration in the case of the Las Vegas Valley would be reduced proportionally to the amount of pumpage. In an over-appropriated basin, equilibrium conditions are not established unless inflow is induced from alternate sources. Due to the over appropriation of the Las Vegas Valley groundwater basin, the basin outflow from the Las Vegas Valley into Three Lakes Valley -

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[73] F.E. Rush, Water Resources Reconnaissance Series Report 54, Regional Ground-water Systems in the Nevada Test Site Area, Nye, Lincoln, and Clark Counties, Nevada, Nevada Department of Conservation and Natural Resources, Division of Water Resources in cooperation with the United States Geological Survey, 1970.

[74] State Engineer's Office, Water for Nevada, State of Nevada Water Planning Report No. 3, pp. 25, 50, Oct. 1971.

Southern Part would be eliminated and outflow from Three Lakes Valley - Southern Part into the Las Vegas Valley could be possible. Additionally, recent work completed by the United States Geological Survey on the Death Valley Regional Flow System indicates a groundwater flow gradient from Three Lakes Valley - Southern Part to the Las Vegas Basin.

While the most probable condition is that the groundwater flows from Three Lakes Valley - Southern Part to both the Las Vegas Valley and Indian Springs Valley, the quantification of interbasin flow under either natural or stressed conditions is not an exact science, but is rather based on a combination of science and professional judgment. Noting that there is minimal data available in any of the areas in which these water right applications are filed, the State Engineer must exercise caution as the Las Vegas basin is over appropriated and sufficient resources need to be available in Indian Springs Valley for existing and future basin development.

The implementation of a monitoring plan as required below will provide additional information relevant to basin flow gradients and provide assurances that impacts from groundwater pumpage are minimal. Therefore, the amount of outflow from the Las Vegas Valley to Three Lakes Valley - Southern Part will be adjusted from 4,700 acre-feet annually to zero in order to account for the probability of a groundwater gradient toward the Las Vegas Valley, as demonstrated in the Death Valley Regional Flow Model, and the over appropriation of the Las Vegas Valley groundwater basin, which reduces the basin outflow to Indian Springs Valley from 10,700 acre-feet annually to the basin natural recharge of 6,000 acre-feet annually.

For Three Lakes Valley - Southern Part the State Engineer will exercise both caution and discretion and use a combination of the traditional method for establishing the perennial yield in basins with no evapotranspiration, as is the case with Three Lakes Valley - Southern Part, being one-half the basin discharge and the

methodology used for Tikapoo Valley - Northern Part and Three Lakes Valley - Northern Part where he found that the total quantity of water that can be appropriated is equal to the entire basin outflow with the modification of basin outflow values to prevent double accounting of the resource.

The State Engineer finds the total quantity of water that can be appropriated from Three Lakes Valley - Southern Part is 4,500 acre-feet annually, limited by a reduction for existing rights and interbasin factors that must be considered and are addressed below. The amount of basin outflow from Three Lakes Valley - Southern Part to Indian Springs Valley is further reduced from 6,000 acre-feet annually to 1,500 acre-feet annually, being the remaining basin outflow, which when combined with the existing perennial yield in Indian Springs Valley is sufficient for the existing and future development within Indian Springs Valley.

The State Engineer finds that by limiting the appropriations to quantities less or equal to the natural recharge the protest issue that the requests for appropriation exceed the natural recharge has been resolved.

L.

The State Engineer recognizes that ground water from Tikapoo and Three Lakes basins flows through the carbonate-rock aquifer and eventually discharges at Ash Meadows, Death Valley, and perhaps to the White River Flow System. Furthermore, it is understood that development of these groundwater resources will ultimately result in lowered water levels and reduced spring discharge at the outflow areas. The Applicant alleges that ground water within the Tikapoo and Three Lakes basins flows westerly within the Death Valley Regional Flow System,[75] but due to the great distance between the proposed pumping and the discharge areas, any impacts will be far in the future and minimal in

[75] Transcript, pp. 736-743.

magnitude.[76] Additionally, that production will capture transitional storage for many years, during which time basin outflow will not be reduced[77] further delaying the time to future impacts at discharge areas. The Applicant also argues for the existence of compartmentalization of the carbonate-rock aquifer, the overall effect of which would be to further delay down-gradient impacts and decrease the magnitude of impact. The Protestants counter argue that, while impacts at Ash Meadows and Death Valley might not be seen for many years, the magnitude of the impact is uncertain, and once felt, impacts would continue to increase for many years regardless of whether production is reduced or eliminated;[78] thus, precluding potential mitigation. Neither the Applicant nor the Protestants presented evidence quantifying the magnitude, time to water level impacts or impacts to spring discharge at the outflow areas of Ash Meadows and Death Valley.

The State Engineer recognizes that future impacts to water levels and spring discharge will ultimately result from development of the basin fill aquifers overlying the carbonate-rock aquifer(s) or the development of the carbonate-rock aquifer(s) directly. However, those impacts may not be significant or even measurable. In the absence of any definitive evidence quantifying potential future impacts at down-gradient discharge areas, the State Engineer looks to his own expertise as well as the expertise of the hydrologists and hydrogeologists presented as expert witnesses. The Applicant's witness indicated that impacts will not be seen for a reasonable period of time, that being hundreds of years, and they are predicted to be minimal due to the distance from the pumping centers and potential

[76] Transcript, pp. 873-889.

[77] Transcript, pp. 889-890.

[78] Transcript, pp. 888-891.

barriers to reduce and delay impact outward from pumping centers. The Applicant argues that, because of aquifer compartmentalization and local recharge, there will be no significant impact to Corn Creek Springs.[79] The Protestants' argue that no such impermeable structures exist between the application pumping sites and Corn Creek Springs and pumping from the points of diversion under Applications 54066 and 54069 will impact discharge at the springs.[80]

The State Engineer finds that due to the great uncertainty and no parties ability to quantify impacts, caution is warranted as it cannot definitively be said there will or will not be unreasonable impacts, or if those impacts would continue for an unreasonable period of time if pumping were ceased. The State Engineer finds, in order to gather the necessary information to more accurately predict the effects of pumping, the appropriation of some water will be permitted accompanied by significant monitoring and curtailment of pumping if unreasonable impacts are seen or are likely.

LI.

The development of the water rights authorized under these applications will be done in conjunction with a monitoring plan to be developed in conjunction with and approved by the State Engineer. The United States National Park Service's expert witness concluded that pumping in the Three Lakes Valleys would eventually impact water levels and discharge at Ash Meadows and Devil's Hole, but at the present time could not predict how long that will take, because of the lack of data and considerable uncertainty that exists in any predictions.[81] "The concept of mass balance requires that the discharge areas will be impacted . . . .

[79] Transcript, pp. 868-873.

[80] Transcript, pp. 294-310.

[81] Transcript, pp. 329-330.

[h]owever, the timing and the magnitude of that impact is currently unknown."[82] The Applicant's witnesses indicated that ultimately, perhaps in 300-400 years, there would either be a decrease in discharge from the Death Valley flow system or groundwater levels will drop.[83]

The State Engineer finds that reducing the amounts requested to quantities within the historical perennial yield analysis or to a natural recharge analysis is to provide greater protection for the avoidance of unacceptable impacts.

LII.

Nevada Revised Statute § 533.370(5) provides that:

> In determining whether an application for an interbasin transfer of ground water must be rejected pursuant to this section, the State Engineer shall consider:
>
> > (a) Whether the applicant has justified the need to import the water from another basin;
> > (b) If the State Engineer determines that a plan for conservation of water is advisable for the basin into which the water is to be imported, whether the applicant has demonstrated that such a plan has been adopted and is being effectively carried out;
> > (c) Whether the proposed action is environmentally sound as it relates to the basin from which the water is exported;
> > (d) Whether the proposed action is an appropriate long-term use which will not unduly limit the future growth and development in the basin from which the water is exported; and
> > (e) Any other factor the State Engineer determines to be relevant.

The State Engineer finds the Applicant justified the need for an interbasin transfer of ground water. Las Vegas is growing at a rate faster than contemplated and the region is reaching a point where it soon will not have a sufficient water supply to support

[82] Transcript, pp. 330-331.

[83] Transcript, p. 624.

the projected regional growth.[84]

The Southern Nevada Water Authority, while not having achieved its conservation goal of 25% in 2002, did achieve 16.4% conservation. In the Las Vegas Valley, it has been estimated that residents use 65% of the overall water supply with most of that use being for outdoor landscaping. Watering ordinances are being adopted to restrict watering times and to limit the amount of turf. Landscape programs are being carried out to provide incentives to replace ornamental turf with water-efficient landscaping.[85] The State Engineer finds the Applicant has actively pursued, developed and is effectively implementing a conservation plan for the region it serves.[86]

LIII.

The State Engineer finds as to Tikapoo Valley - Northern Part, the United States Department of Interior, Bureau of Land Management 2003 land ownership status map indicates three parcels of patented land within the valley and there are no pending applications to appropriate ground water for use on these parcels. The total domestic use that would be allowed for these parcels would be 6.06 acre-feet annually. In Tikapoo Valley - Northern Part, there is an existing water right certificate for groundwater appropriation totaling 6.7 acre-feet annually for stock-watering purposes and there is also a claim of a vested water right for ground water totaling 0.5 acre-feet annually for stock-watering purposes. The State Engineer finds, based on the combined existing and future domestic demand of approximately 13.0 acre-feet annually, the amount of water available for appropriation in Tikapoo Valley - Northern Part is 2,587 acre-feet annually.

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[84] *See*, testimony of Kay Brothers and Ken Albright, Transcript, pp. 460-530.

[85] Southern Nevada Water Authority 2004 Water Resource Plan.

[86] *Ibid.*

LIV.

The State Engineer finds as to Tikapoo Valley - Southern Part, the United States Department of Interior, Bureau of Land Management 2003 land ownership status map indicates there is no patented land within the valley and there are no parcels indicated as being available for development. The State Engineer finds, based on the fact that there is no existing or future demand, the amount of water available for appropriation in Tikapoo Valley - Southern Part is 1,700 acre-feet annually.

LV.

The State Engineer finds as to Three Lakes Valley - Northern Part, the United States Department of Interior, Bureau of Land Management 2003 land ownership status map indicates there is no patented land within the valley and there are no parcels indicated as being available for development. The State Engineer finds, based on the fact that there is no existing or future demand, the amount of water available for appropriation in Three Lakes Valley -Southern Part is 3,700 acre-feet annually; however, by letter dated May 19, 2003, the Southern Nevada Water Authority and the Las Vegas Valley Water District requested the State Engineer issue the applications in Three Lakes Valley - Northern Part for only a total combined duty of 2,000 acre-feet annually.

LVI.

The State Engineer finds as to Three Lakes Valley - Southern Part, the United States Department of Interior, Bureau of Land Management 2003 land ownership status map indicates there is one parcel of patented land within the valley. A review of the Clark County Assessor's records indicates that said parcel is currently in the name of the United States Bureau of Land Management and there is no pending application to appropriate water for this parcel. The map also indicates there is one section of land under ownership of the State of Nevada with no reference to patent status. Said section of land is used for the purposes of a prison run by the State of Nevada, which has appurtenant groundwater

rights in the amount of 1,574.92 acre-feet annually. In total, there are existing permits and certificates in Three Lakes Valley - Southern Part in the amount of 1,882 acre-feet annually. The State Engineer finds based on existing demand, the amount of water available for appropriation in Three Lakes - Southern Part is 2,618 acre-feet annually.

The State Engineer finds there is only a very small amount of private land in the basins where these appropriations are requested; therefore, the long-term use of the water will not unduly limit the future growth and development. The State Engineer finds questions remain as to whether appropriation of ground water in the quantities authorized by this ruling is environmentally sound. However, substantial evidence was not provided that the appropriations will be detrimental to the environment of any particular hydrographic basin from which water will be exported within any reasonable future period of time; therefore, the statutory requirement for prohibiting the interbasin transfers requested has not been satisfied.

LVII.

The applications under consideration in this ruling were filed for municipal and domestic uses in Clark, Lincoln, Nye and White Pine Counties. No evidence was provided as to any beneficial use of water other than in Clark County. Nevada Revised Statute § 533.035 provides that beneficial use is the basis, the measure and the limit of the right to use water, and NRS § 533.370 provides that an applicant must demonstrate an intention in good faith to construct works with reasonable diligence to apply the water to a beneficial use. The State Engineer finds there was no demonstration of beneficial use of the water anywhere other than Clark County; therefore, the place of use will be restricted to Clark County.

CONCLUSIONS OF LAW

I.

The State Engineer has jurisdiction over the parties and the

subject matter of this action and determination.[87]

II.

The State Engineer is prohibited by law from granting a permit under an application to appropriate the public waters where:[88]

A. there is no unappropriated water in the proposed source;
B. the proposed use or change conflicts with existing rights;
C. the proposed use or change conflicts with protectible 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 there is unappropriated water in these groundwater basins in the following amounts:

Tikapoo Valley - Northern Part	2,587	acre-feet annually
Tikapoo Valley - Southern Part	1,700	acre-feet annually
Three Lakes Valley - Northern Part	3,700	acre-feet annually
Three Lakes Valley - Southern Part	2,618	acre-feet annually

IV.

The State Engineer concludes that by providing safeguards, such as the reduction in the amount requested for appropriation and the monitoring plan ordered below, there are some assurances that any impacts can be quantified and, if necessary, mitigated, and the use of the water proposed under the applications will not threaten to prove detrimental to the public interest.

V.

The State Engineer concludes the protestant did not provide any testimony or evidence to support protest claims 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24,

[87] NRS chapters 533 and 534.

[88] NRS § 533.370(4).

25, 26, 27, 28, 29, a portion of 30, 31, 32, a portion of 33, 34, a portion of 36, a portion of 37, 38, 39, 40, 42, 43, 44 and 45; therefore, said protest claims were not proven and/or are deemed as being abandoned.

VI.

The State Engineer concludes there is not substantial evidence that appropriation of water under these applications will conflict with existing water rights, deplete the waters of Ash Meadows or the Death Valley Regional Flow System thereby impacting threatened and endangered species or wetlands. The complexity and unknowns of the system and the paucity of data make such a determination extremely difficult. Only by allowing some development to proceed will the additional information be obtained to provide further knowledge as to how the carbonate-rock aquifer and alluvial aquifer systems are connected, if they are, and address the protest claim that there is insufficient information to determine the potential impacts from the use of water as proposed under the applications. The State Engineer concludes that the available scientific literature is not adequate to reasonably assure that the proposed diversions will not impact senior rights and water resources; thus, the requirement of monitoring and, if necessary, mitigation. The State Engineer concludes that the evidence to date indicates that generalizations cannot be made applicable to specific basins because they may not be applicable to any particular basin. Individual basins may react completely differently to the pumping of the ground water in

relation to the basin fill aquifers overlying the carbonate-rock aquifer or the carbonate-rock aquifer flow systems directly.

VII.

The State Engineer concludes there is not substantial evidence to support the protest claim that use of water under the applications will interfere with the BLM's responsibilities to protect wetlands and to conserve listed threatened and endangered species.

VIII.

The State Engineer concludes there is not substantial evidence to support the protest claim that use of water under the applications will impair or conflict with existing rights, be against public policy and contrary to statute.

IX.

The State Engineer concludes there is not substantial evidence that use of water under the applications will degrade wetlands and riparian habitats, including that of the Death Valley National Monument.

X.

The State Engineer concludes there is not substantial evidence that use of water under the applications will interfere with water rights held by the U.S. Fish and Wildlife Service or will intercept the source of water that now maintains the numerous springs, seeps, marshes, streams and riparian and mesquite habitats that support the wildlife and plant resources, including threatened and endangered species in Nevada.

XI.

The State Engineer concludes there is not substantial evidence that the water-related resources and claimed senior surface and groundwater rights in the Ash Meadows National Wildlife Refuge, Desert National Wildlife Range, Moapa National Wildlife Refuge, Devil's Hole, and Death Valley National Monument

will be diminished or impaired as a result of the diversions proposed under the applications.

XII.

The State Engineer concludes there is not substantial evidence to support the protest claim that the use of water under these applications, combined with the others filed at the same time, seek a combined appropriation of 860,000 acre-feet of ground and surface water and the diversion and the exportation of such a quantity of water will deprive the basin of origin of water needed for its environment and economic well being and will destroy environmental, ecologic, scenic and recreational values the state holds in trust for its citizens.

XIII.

The State Engineer concludes that there is not substantial evidence to support the protest claim that the use of water under the applications could cause economic impacts in the areas of origin, such as precluding new agricultural development, damaging the existing agricultural economy, inhibiting or precluding opportunities for power generation, inhibiting or precluding mineral extraction, inhibiting or precluding manufacturing by space-requiring industries, damaging tourism, and concentrating population as opposed to dispersing it.

XIV.

The State Engineer concludes if the Applicant needs to obtain the approval of the United States Department of Interior, Bureau of Land Management or any other federal agency for any necessary right-of-ways, that is an issue for the Applicant to address with the appropriate federal agency. The granting of a water right permit does not waive the requirements of other State or Federal laws nor does it extend the right of ingress and egress on public, private or corporate lands.

XV.

The State Engineer concludes it does not threaten to prove detrimental to the public interest to allow the quantities of water to be developed under these applications when said development is done in conjunction with sufficient monitoring, and plans for mitigation of impacts, including cessation of pumping, if necessary. The State Engineer concludes it is unknown, without further analysis through development of the resource, if these appropriations will reduce interbasin flows or modify the direction of groundwater movement thereby reducing spring flows. The State Engineer concludes it is because of these unknowns that he will require monitoring and mitigation, if necessary.

XVI.

The State Engineer concludes under Nevada water law an applicant must generally demonstrate the proposed manner and place of use of the water requested for appropriation. The State Engineer concludes the Applicant did not demonstrate any beneficial use of water anywhere other than in Clark County; therefore, the place of use is restricted to Clark County.

RULING

The protests to Applications 53948, 53950, 53951, 54062, 54066, 54068 and 54069 are upheld in part and overruled in part. They are being upheld in that the appropriation of any quantity of water above the natural recharge from these groundwater basins may threaten to prove detrimental to the public interest. The remaining protest claims are overruled on the grounds that either no evidence or lack of substantial evidence was provided in support of said protest claims.

Application 53948 is granted in the amount of 2,587 acre-feet annually.

Applications 53950 and 53951 are granted for a total combined duty of 1,700 acre-feet annually.

Applications 54068 and 54069 are granted for a total combined duty of 2,000 acre-feet annually.

Applications 54062 and 54066 are granted for a total combined duty of 2,618 acre-feet annually.

The place of use under the permits granted is limited to Clark County.

The permits are issued subject to:

1. Existing rights;
2. The payment of the statutory permit fees;
3. A monitoring program must be approved by the State Engineer prior to the diversion of any of the water permitted for appropriation under these permits;
4. The requirement that if impacts to existing water rights are demonstrated, the Applicant or any assignee will be required to mitigate the same, including cessation of pumping;
5. The recognition that the permits issued do not waive the requirements of the Applicant to obtain other permits required by State, Federal or local agencies;
6. The recognition that the permits issued do not extend the right of ingress and egress to any public, private or corporate land.

Respectfully submitted,

HUGH RICCI, P.E.
State Engineer

HR/jm

Dated this 4th day of January, 2005.