

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

IN THE MATTER OF APPLICATIONS )  
54075 AND 54076 FILED TO )  
APPROPRIATE UNDERGROUND WATER )  
FROM THE CALIFORNIA WASH HYDROGRAPHIC )  
AREA (218), CLARK COUNTY, NEVADA )

RULING  
**#5115**

GENERAL

I.

Application 54075 was filed on October 17, 1989, by the Las Vegas Valley Water District ("LVVWD") to appropriate 10 cubic feet per second (cfs) of the water from the "underground rock aquifer" within the California Wash Hydrographic Area for municipal and domestic purposes within Clark, Lincoln, Nye and White Pine Counties, as more specifically described and defined within NRS § 243.035-243.040 (Clark), 243.210-243.225 (Lincoln), 243.365-243.385 (White Pine) and 243.275-243.315 (Nye). The proposed point of diversion is described as being located within the NE¼ SW¼ of Section 4, T.16S., R.66E., M.D.B. & M.<sup>1</sup> In Item 12, the remarks section of the application, it indicates that the water sought under the application shall be placed to beneficial use within the Las Vegas Valley Water District service area as set forth in Chapter 752, Statutes of Nevada 1989, or as may be amended. Further, that the water may also be served and beneficially used by lawful users within Lincoln, Nye and White Pine Counties, and that water would be commingled with other water rights owned or served by the applicant or its designee. By letter dated March 22, 1990, the applicant further indicated, in reference to Item 12, that the approximate number of persons to be served is 800,000 in addition to the current service for approximately 618,000 persons, that the applications seek all the unappropriated water within the particular groundwater basins in the which water rights are sought and that the projected

<sup>1</sup> File No. 54075, official records in the Office of the State Engineer.

population of the Clark County service area at the time of the 1990 letter was estimated to be 1,400,000 persons by the year 2020.

II.

Application 54076 was filed on October 17, 1989, by the LVVWD to appropriate 10 cfs of the water from the underground rock aquifer within the California Wash Hydrographic Area for municipal and domestic purposes within the Clark, Lincoln, Nye and White Pine Counties. The proposed point of diversion is described as being located within the NW $\frac{1}{4}$  NW $\frac{1}{4}$  of Section 16, T.15S., R.64E., M.D.B. & M.<sup>2</sup> The Item 12 remarks are the same as those found under Application 54075.

III.

By letter dated March 26, 2002, the LVVWD requested the State Engineer proceed with action on Applications 54075 and 54076 filed to appropriate a total of 14,480 acre-feet annually.<sup>3</sup> The LVVWD requested that, in the event the permits are issued for less than the amount requested, the State Engineer withhold final action on the remaining portion of the ground water applied for until such time as definitive data on the availability of additional ground water in Basin 218 is available.

The LVVWD indicated that it intends to make any permits issued under these applications available to the Moapa Band of Paiutes provided that a settlement agreement between the Tribe and the LVVWD has been finalized. The LVVWD further provided that, although these two applications were filed as part of what has come to be known as the Cooperative Water Project, development needs along the I-15 corridor and continued growth in the northern section of the Las Vegas Valley have caused the LVVWD and Southern

<sup>2</sup> File No. 54076, official records in the Office of the State Engineer.

<sup>3</sup> Letter dated March 26, 2002, from David Donnelly to State Engineer. File Nos. 54075 and 54076, official records in the Office of the State Engineer.

Nevada Water Authority ("SNWA") to evaluate resource opportunities in relative proximity to these areas separately from the Cooperative Water Project, as reflected in the 2002 SNWA Resource Plan.<sup>4</sup>

IV.

Application 54075 was protested by the Unincorporated Town of Pahrump, the United States Department of Interior, National Park Service, the United States Fish and Wildlife Service, the United States Department of Interior, Bureau of Land Management, the County of Nye, the County of White Pine and the City of Ely, the Moapa Band of Paiute Indians, Fred Landau, the Ely Shoshone Tribe, the City of Caliente, and the Lincoln County Board of Commissioners.

~~Application 54076 was protested by the Unincorporated Town of Pahrump, the United States Department of Interior, National Park Service, the United States Fish and Wildlife Service, the United States Department of Interior, Bureau of Land Management, the County of Nye, the County of White Pine and the City of Ely, the Moapa Band of Paiute Indians, Walter Galloway, the Toiyabe Chapter of the Sierra Club, and the Lincoln County Board of Commissioners.~~

~~The applications were protested on many grounds, including:~~

- ~~1. The applications were some of the 146 applications to appropriate water filed by the LVVWD, which combined seek 864,195 acre-feet annually of underground and surface water, and diversion of such a quantity of water would deprive the area of origin of water needed to protect and enhance its environment and economic well being, and would unnecessarily destroy environmental, ecological, scenic and recreational values the State holds in trust for its citizens.~~
- ~~2. The applications should not be granted in the absence of comprehensive planning.~~

---

<sup>4</sup> Ibid.

3. Approval of the applications would sanction and encourage the willful waste and inefficient use of water in the Las Vegas Valley.

4. The LVVWD has not obtained rights-of-way from the United States Department of Interior, Bureau of Land Management.

5. The LVVWD lacks the financial capability for developing the project.

6. The applications fail to include statutorily required information, specifically, a description of the place of use, the proposed works, the estimated cost of such works and the estimated time required to go to beneficial use.

7. The applications fail to contain sufficient information for the State Engineer to safeguard the public interest and that a publicly-reviewable assessment must be done of the cumulative impacts of the proposed extraction, mitigation measures needed and alternatives to the proposed extraction.

8. The population projection numbers are unrealistic.

9. The applications would allow the LVVWD to "lock up" vital water resources for possible use in the distant future beyond current planning horizons.

10. The applications substantially overstate future water demand needs.

11. Further study is needed because the potential effects are impossible to anticipate.

12. The granting of the applications would destroy the economic and growth potential of the hydrographic basin.

13. The public interest will not be served if the water and water-related resources in the Death Valley National Monument and the Lake Mead National Recreational Area are diminished or impaired as a result of the appropriations.

14. The applications will eventually reduce or eliminate the flows from springs, which are discharge areas for a regional groundwater flow system upon which the National Park Service

claims senior appropriative and implied Federal reserved water rights.

15. The proposed diversions are from the carbonate-rock province of Nevada that is typified by complex, interbasin, regional-flow systems that include both basin-fill and carbonate-rock aquifers along with interbasin flows that are poorly defined, and the diversions will reduce the interbasin flows, and modify the direction of groundwater movement in adjoining and hydraulically connected basins thereby reducing spring and stream flows.

16. The available scientific literature is not adequate to reasonably assure that the proposed diversions will not impact senior rights and water resources.

17. As of December 1988 the committed diversions in California Wash were 510 acre-feet annually (afa) with an estimated perennial yield of 100 afa and the sum of the applications and the committed diversions will exceed the perennial yield of the groundwater basin; therefore, there is no water available for appropriation.

18. It is unclear whether the amount contemplated in the applications is necessary and reasonably required for the proposed purposes.

19. The granting of the applications will lower the water table, sanction water mining, degrade water quality, cause negative hydraulic gradient influences, threaten springs and seeps and phreatophytes, which provide water and habitat critical to the survival of wildlife including, endangered species and grazing livestock.

20. The applications would create air contamination and pollution in violation of State and Federal statutes.

21. The applications will cause water rates to go up thereby causing demand to go down thereby rendering the water unnecessary.

22. Previous applications from California Wash Hydrographic Basin have been denied.

23. The applications will negatively impact Nevada's environment.

24. The LVVWD has not shown a need for the water or that the project is feasible.

25. Until the claims under the Treaty of Ruby Valley (1863) are adjudicated the applications are premature.

#### FINDINGS OF FACT

##### I.

By letter dated April 5, 2002, legal counsel for the Federal agencies, U.S. Department of Interior, Bureau of Land Management, Fish and Wildlife Service and National Park Service requested that the State Engineer hold a public administrative hearing before acting on the applications, because they have scientific information on water availability in California Wash. The request for a public hearing appears to be contradictory to other comments in the letter, which indicate the Federal agencies want to discuss settlement with the Las Vegas Valley Water District. If they settle, the information would not be presented at the administrative hearing.

In July and August of 2001, nearly four weeks of public administrative hearings were conducted on applications filed by the Las Vegas Valley Water District (Applications 54055-54059, inclusive) and Coyote Springs Investment, LLC (Applications 63272-63276, inclusive, and 63867-63876, inclusive), which together request to appropriate approximately 135,000 acre-feet of water annually within the Coyote Springs Valley Hydrographic Basin. Those hearings were on applications that requested to appropriate water from a regional source of water, the carbonate-rock aquifer system, the same source the applicant hopes to tap under these applications.<sup>5</sup> The result of those hearings was the issuance of

<sup>5</sup> Transcript, public administrative hearings before the State Engineer, July 16-24, August 20-24, 27-28, 31, 2001, official records Office of the State Engineer.

State Engineer's Order No. 1169<sup>6</sup>, pursuant to which the State Engineer ordered holding in abeyance applications for additional water rights from the carbonate-rock aquifer in most of the basins surrounding California Wash. The basis for the Order was that ~~there is insufficient scientific evidence to proceed with~~ additional appropriations until those water rights that have been permitted are pumped and monitored, thereby providing evidence of the effect of the exercise of the water rights already issued. Nothing has changed since the issuance of that order, which the State Engineer believes will provide additional evidence of value other rather than just adding to the theoretical evidence already presented.

Nevada Revised Statute § 533.365 provides that the State Engineer shall consider a protest timely filed, but that it is within his discretion whether or not to hold an administrative hearing as to any particular water right application. The State Engineer finds that he does not believe an administrative hearing will add to the knowledge already held. The scientific evidence previously presented was not definitive as to the availability of water within the carbonate-rock aquifer and the effects of pumping. The State Engineer finds there is sufficient information available in the records of the Division of Water Resources and in reports prepared by the United States Geological Survey in conjunction with the State of Nevada, Las Vegas Valley Water District, City of North Las Vegas, U.S. National Park Service, U.S. Fish and Wildlife Service, U.S. Bureau of Land Management, Desert Research Institute, U.S. Bureau of Reclamation, U.S. Air Force and U.S. Bureau of Indian Affairs, and in conjunction with the weeks of public administrative hearings held in the summer of 2001 to review these specific applications, and that an administrative hearing in this instance is not necessary.

---

<sup>6</sup> State Engineer's Order No. 1169, dated March 8, 2002, official records in the Office of the State Engineer.

However, the State Engineer finds the decision not to hold a hearing does not preclude the need for additional study.

## II.

When the State Engineer analyzes whether water is available for appropriation from the underground sources of water in Nevada, the first analysis addresses the perennial yield of the particular groundwater basin. The perennial yield of a hydrologic basin may be defined as the maximum amount of ground water that can be salvaged over the long term without depleting the groundwater reservoir. Perennial yield is ultimately limited to the maximum amount of natural recharge that can be salvaged for beneficial use. If the perennial yield is continually exceeded, groundwater levels will decline.<sup>7</sup> Withdrawals of ground water in excess of the perennial yield 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. Presently, scientists can estimate the perennial yield of a groundwater basin by two distinct methods: recharge to the groundwater basin from precipitation, and discharge from the groundwater basin by spring/surface discharge, interbasin flow, consumption by plants tapping the ground water and consumption by man.

Reconnaissance Report 50 estimates that California Wash has an annual recharge of less than 100 acre-feet from precipitation and that no water comes into the valley-fill reservoir from subsurface inflow.<sup>8</sup> The Report provides that inflow is

<sup>7</sup> State Engineer's Office, Water for Nevada, State of Nevada Water Planning Report No. 3, p. 13, Oct. 1971.

<sup>8</sup> F.E. Rush, Water Resources-Reconnaissance Series Report 50, Water-Resources Appraisal of the Lower Moapa-Lake Mead Area, Clark County, Nevada, United States Geological Survey, pp. 25,26, 28, 41 (1968).



contributed to California Wash from Garnet Valley (Basin 216), Muddy River Springs area (Basin 219), and Lower Meadow Valley Wash (Basin 205) through the alluvium and carbonate rocks.<sup>9</sup> Reconnaissance Report 50 studied the region in which California Wash is located and indicated the following.

All the areas included in this report<sup>10</sup> apparently drain in the subsurface to either the Muddy River or directly to Lake Mead... Hidden Valley probably drains to Garnet Valley, which in turn probably drains eastward toward California Wash... Subsurface drainage may be both northeastward from California Wash Area toward the Muddy River and southeastward toward Lake Mead... Ground water may enter the report area at several places: (1) along Meadow Valley Wash, flowing through alluvium, (2) along the Muddy River, flowing through alluvium, and (3) from Las Vegas Valley, near Lake Mead Base..., flowing through carbonate rocks, and (4) from Las Vegas Valley, along Las Vegas Wash flowing through alluvium. All these flow quantities are probably small.<sup>11</sup>

However, the "possibility of salvaging all or part of the outflow by pumping is dependent upon the nature and extent of the transmitting lithology, which is generally unknown. For the purpose of this reconnaissance it is assumed that the subsurface geohydrologic controls might permit salvage of half of the outflow by pumping."<sup>12</sup>

Testimony and evidence from the July and August 2001 hearings previously referenced indicated that using the standard Maxey-

<sup>9</sup> Id. at 26.

<sup>10</sup> The Reconnaissance Series Report 50 covered the Lower Moapa-Lake Mead Area of Clark County, Nevada, including Hidden, Garnet, and Lower Moapa Valleys, Black Mountains and Gold Butte Areas, California Wash and Greasewood Basin. F.E. Rush, Water Resources-Reconnaissance Series Report 50, Water-Resources Appraisal of the Lower Moapa-Lake Mead Area, Clark County, Nevada, United States Geological Survey, at 1 (1968).

<sup>11</sup> Id. at 13.

<sup>12</sup> Id. at 49-51.

Eakin technique for estimation of groundwater recharge from precipitation, the recharge for the Coyote Springs Valley, Muddy River Springs, Hidden Valley, Garnet Valley, Black Mountains, and Lower Moapa Valley areas combined is approximately 3,550 acre-feet annually. Using the modified Maxey-Eakin technique introduced at the administrative hearing (known as the Donovan-Katzer 2000 technique), the recharge is estimated at approximately 6,761 acre-feet annually for the combined areas.<sup>13</sup> California Wash adds an additional 100 to 311 acre-feet under the two techniques.

The State Engineer finds using the Maxey-Eakin method of estimating recharge, the recharge to the area comprised of Coyote Springs Valley, Muddy River Springs, Hidden Valley, Garnet Valley, Black Mountains, Lower Moapa Valley and California Wash is approximately 3,650 acre-feet annually. The Donovan-Katzer 2000 technique estimates the recharge to be approximately 7,072 acre-feet annually for the combined areas.

### III.

Another method for estimating the total quantity of water available for appropriation uses interbasin flow and discharge flow as a method to approximate the annual safe yield. Groundwater is discharged by the natural processes of transpiration of vegetation, evaporation from the soil and free-water surfaces, and possible underflow from one groundwater basin to another. This method is addressed in the context of the discussion below.

The applications indicate the water proposed for appropriation under these applications is from a source known as a carbonate-rock aquifer, which is a source that was not generally considered in the analysis of water available for appropriation in these particular groundwater basins. In 1984, the Water Resources Division of the United States Department of Interior, Geological Survey proposed a 10-year investigation of the entire Carbonate

<sup>13</sup> See, testimony of Terry Katzer and David Donovan; Exhibit 54, p. 4-25, public administrative hearing before the State Engineer, July 16-24, 2001.

Terrane.<sup>14</sup> The study was proposed because, the water resources of the Carbonate Terrane were not well defined, the data was sparse and the hydrology and geology of the area are complex. It has been known since 1984 that to arrive at some reasonable understanding of the carbonate-rock-aquifer system, substantial amounts of money would be required to develop the science, a significant period of study would be required, and that "unless this understanding is reached, the development of carbonate water is risky and the resultant effects may be disastrous for the developers and current users."<sup>15</sup>

It was believed that developing a better scientific understanding would identify possible additional water resources that could be developed, would further the attempts to define the perennial yield of this water source, would protect current users, would allow the State Engineer to better understand the system, which would allow management for the benefit of all the people, and would further the knowledge needed by the Federal agencies for protection of their water rights and water-resource related interests.

It was noted in the proposal referenced above, that this was not the first time a comprehensive investigation of the hydrology of the Carbonate Terrane in Nevada was considered, and that area-wide studies had been conducted by four different organizations to date.<sup>16</sup> The 1984 United States Geological Survey memo indicates

---

<sup>14</sup> Memorandum dated August 3, 1984, from Terry Katzer, Nevada Office Chief, Water Resources Division, United States Department of Interior Geological Survey, Carson City, Nevada, to Members of the Carbonate Terrane Society.

<sup>15</sup> Ibid.

<sup>16</sup> Those organizations were identified as:  
(1) the Desert Research Institute (Mifflin 1968, Hess and Mifflin 1978);  
(2) the United States Air Force (M-X Multiple Protective Shelter Water Resources Program 1983);  
(3) the United States Geological Survey (Great Basin Regional Aquifer System Analysis, Harrill and others 1982), and;  
(4) the United States Bureau of Reclamation (Southern Nevada Deep Carbonate

that given the "myriad possible avenues of hydrologic connection between the various aquifers and flow systems and the uncertainties of recharge and discharge mechanisms and processes, an investigation of the hydrology of the carbonate-rock aquifers in Nevada is undoubtedly a difficult undertaking."<sup>17</sup>

An investigation of the carbonate-rock aquifer system is additionally complicated by factors including:

- basic hydrologic data such as groundwater levels in both the basin-fill aquifers and carbonate-rock aquifers, and reliable flow measurements for important springs and major streams are scarce or infrequently obtained in much of the area;
- secondary hydrologic and other data, such as hydraulic parameters, geophysical and geochemical, are lacking in many areas;
- the geometry, properties, and boundaries of the carbonate-rock and basin-fill reservoirs are generally unknown, and definition of these properties can be expensive and difficult;
- climatic conditions today are inadequately defined (particularly at higher altitudes) and conditions during the development of the flow paths within the deep-rock aquifers and flow paths within the

---

Aquifer Study 1984).

These studies were based on many smaller scale studies, including:

- (1) the early studies of the White River flow system by Maxey and Eakin 1949, and Eakin 1966);
- (2) the numerous studies in the area between, and including, the Nevada Test Site and Death Valley by Hunt and Robinson 1960, Eakin and other 1963, Winograd and Thordarson 1975, Classen 1983, and;
- (3) the investigations of the geohydrology of Central Nevada associated with the Atomic Energy Commission's Central Nevada Test Area, Fiero and Illian 1968 and 1969.

Numerous other studies of individual or small groups of basins have also been conducted by private and public organizations, and information has been gathered from drilling for oil and mineral exploration.

<sup>17</sup> Memorandum dated August 3, 1984, from Terry Katzer, Nevada Office Chief, Water Resources Division, United States Department of Interior Geological Survey, Carson City, Nevada, to Members of the Carbonate Terrane Society, Attachment at 7.

carbonate-rock aquifer are even more uncertain;

-uncertainties and inaccuracies exist in current methods of estimating precipitation;

- uncertainties and inaccuracies exist in current methods of estimating groundwater inflow and recharge;

- uncertainties and inaccuracies exist in current methods of estimating groundwater outflow and evaporative discharge;

- only a small number of wells tap the deep carbonate rocks;

- because there has been no significant historical pumping of ground water from the carbonate-rock aquifer system, groundwater models can only be used as a limited predictive tool for estimating the principle location and magnitude of impact of pumping ground water from the system;

- limited stresses on the water resources of the area under current development conditions allow hydrologists information only on the narrow band of system responses to natural conditions; and  
- the relationship between geothermal systems and the deep carbonate-rock aquifers and groundwater flow systems is not well understood.

The State Engineer finds that as of 1984 the carbonate-rock aquifers were known to exist, not much specific data existed on the carbonate-rock aquifers or their relationship to the basin-fill/alluvial aquifers and it was well known that further study was needed to understand the water systems. The State Engineer finds that not much has changed to the present time.

#### IV.

In 1985, the Nevada Legislature authorized a program for the study and testing of the carbonate-rock aquifers of eastern and southern Nevada. The program was a cooperative effort between the State of Nevada and the Federal Government. The overall plan for the program was to study the carbonate-rock aquifers of southern, east-central, and northeastern Nevada as separate phases of work, with a summary of findings to be prepared at the end of each

phase. A report, Distribution of Carbonate-Rock Aquifers in Southern Nevada and the Potential for their Development, Summary of Findings, 1985-1988,<sup>18</sup> summarized the findings of the first phase of the study, which assessed the resources of the carbonate-rock aquifers of southern Nevada. The summary brought together results from more than 20 technical reports produced during the study and indicated that:

The rocks that compose the carbonate-rock aquifers are layers of limestone and dolomite that were deposited hundreds of millions of years ago in much of the eastern Great Basin. Subsequently, the carbonate rocks were much deformed; as a result, they no longer exist as continuous layers beneath the region. Instead, they have been pulled apart to form a few large areas of thick and relatively continuous carbonate rocks. Separating these areas are noncarbonate rocks, within which are isolated mountain-sized blocks of carbonate rock.

Beneath southern Nevada, the thick carbonate-rock layers are continuous enough to transmit ground water at regional scales only beneath a north-south "corridor" 60-90 miles wide that extends southward from east-central Nevada to and beyond the Spring Mountains area west of Las Vegas. Within this corridor are the two major regional flow systems of southern Nevada: the Ash Meadows-Death Valley system and the White River-Muddy River Springs system. These flow systems link the ground water beneath dozens of valleys and over distances exceeding 200 miles. Flow in these systems probably is concentrated along highly transmissive zones associated with (1) recently active faults and (2) confluences of flow near major warm-water springs. Outside of the corridor, the carbonate rocks are present primarily as isolated blocks that form aquifers of limited extent, recharged mostly by local precipitation.

\* \* \*

---

<sup>18</sup> Michael D. Dettinger, Distribution of Carbonate-Rock Aquifers in Southern Nevada and the Potential for their Development, Summary of Findings, 1985-1988, Summary Report No. 1, United States Geological Survey, Department of Interior and Desert Research Institute, University of Nevada System, Forward, 1989.

Large-scale development (sustained withdrawals) of water from the carbonate-rock aquifers would result in water-level declines and cause the depletion of large quantities of stored water. Ultimately, these declines would cause reductions in the flow of warm-water springs that discharge from the regional aquifers. Storage in other nearby aquifers also might be depleted, and water levels in those other aquifers could decline. In contrast, isolated smaller groundwater developments, or developments that withdraw ground water for only a shorttime, may result in water-level declines and springflow reductions of manageable or acceptable magnitude.

Confidence in predictions of the effects of development, however, is low; and it will remain low until observations of the initial hydrologic results of development are analyzed. A strategy of staging developments gradually and adequately monitoring the resulting hydrologic conditions would provide information that eventually could be used to improve confidence in the predictions.<sup>19</sup>

The committed groundwater resource in the form of permits and certificates issued by the State Engineer to appropriate underground water from the California Wash Hydrographic Basin currently exceeds 567 acre feet annually.<sup>20</sup> The State Engineer has previously granted groundwater permits, which authorize use of underground water in an area underlain by the carbonate-rock aquifer system or directly from the carbonate-rock aquifer system in the following quantities:

---

<sup>19</sup> Id. at 1-2.

<sup>20</sup> Hydrographic Basin Abstract, Basin 218, official records in the Office of the State Engineer, April 9, 2002. It should be noted that only 477 acre-feet is for the permanent use of water, the other water use permitted is for environmental clean-up and mining and milling, which are considered non-permanent uses of water.

Coyote Springs Valley (Basin 210)	16,300	acre-feet
Black Mountain (Basin 215)	10,216	acre-feet
Garnet Valley (Basin 216)	3,380	acre-feet
Hidden Valley (Basin 217)	2,200	acre-feet <sup>21</sup>
Muddy River Springs aka Upper Moapa Valley (Basin 219)	14,756	acre-feet
Lower Moapa Valley (Basin 220)	5,813	acre-feet
California Wash (Basin 218)	<u>477</u>	<u>acre-feet</u>
Total	50,942	acre-feet

The State Engineer finds, in a straight perennial yield analysis, that existing groundwater rights in the California Wash groundwater basin exceed the perennial yield of the groundwater basin. However, the State Engineer further finds that appropriations from the carbonate-rock aquifer are being requested, and evidence has been presented to him that new estimates of the system yield need to be established. The State Engineer finds, given the complexities of the carbonate-rock aquifer system, further site specific information (one valley at a time) is needed and will provide information not presently available due to the limited development of the resource. The State Engineer finds that due to the complexities of the system and potential interaction between the carbonate-rock aquifer and the alluvial aquifer, further analysis is required in order to understand what potential, if any, exists for the appropriation of more water from the California Wash groundwater basin.

The State Engineer finds because assurances that the adverse effects of development will not overshadow the benefits cannot be made with a high degree of confidence, development of the carbonate-rock aquifer system must be undertaken in gradual stages together with adequate monitoring in order to predict the effects

<sup>21</sup> This 2,200 acre-feet is combined with 2,200 acre-feet issued in Garnet Valley for a total of 2,200 afa between the two basins.



of continued or increased development with a higher degree of confidence.

V.

The State Engineer finds that staging development gradually means ~~not developing the resources in one large step, but rather~~ starting with small projects that are possibly augmented gradually if conditions and confidence warrant. This approach allows the effects of development to be observed and analyzed continually, so that the benefits and adverse effects of development can be judged and the effects reversed or mitigated if they prove to be detrimental to existing rights and the environment. This approach would hopefully avoid the havoc that could be created by the curtailment of water use by those who have come to rely on it if impacts occur requiring curtailment of the water use.

VI.

The 1995 Water-Resources Investigations Report 91-4146<sup>22</sup> estimates the total water budget of all southern Nevada aquifers from the natural recharge to the mountains and subsurface inflow to the study area<sup>23</sup> to be about 160,000 acre-feet annually, and discharges from major discharge areas to be about 77,000 acre-feet annually.<sup>24</sup> However, it is believed that all of the recharge and subsurface inflow cannot be captured for use.

---

<sup>22</sup> Michael D. Dettinger, et al., Distribution of Carbonate-Rock Aquifers and the Potential for Their Development, Southern Nevada and Adjacent Parts of California, Arizona and Utah, U.S. Geological Survey, Water-Resources Investigations Report 91-4146, p. 50, 1995.

<sup>23</sup> The study area is defined on p. 5 of Water-Resources Investigations Report 91-4146 to be most of southern Nevada south of Tonopah and Pioche.

<sup>24</sup> Discharge areas are identified as Muddy River Springs 36,000 acre-feet annually (afa) of spring flow, Blue Point Spring 240 afa of spring flow, Rogers Spring 920 afa of spring flow, Frenchman Mountain 2,100 afa of underflow toward Colorado River, Pahrump Valley 18,000 afa of underflow to California, Ash Meadows 17,000 afa of spring flow and evapotranspiration, Amargosa Desert 3,000 afa of underflow to Death Valley, and Grapevine Canyon 400 afa of underflow to Death Valley. Water-Resources Investigations Report 91-4146 at 53.

As previously noted, the testimony and evidence from the July and August 2001 administrative hearings on Coyote Springs Valley Hydrographic Basin indicated that the groundwater recharge from precipitation for the Coyote Springs Valley, Muddy River Springs, Hidden Valley, Garnet Valley, Black Mountains, Lower Moapa Valley and California Wash areas combined is approximately 3,650 acre-feet up to 7,072 acre-feet annually depending on the method used for calculation.

Testimony and evidence from those hearings further indicated that approximately 50,000 acre-feet of groundwater inflow comes into the Coyote Springs Valley from northern groundwater basins and approximately 53,000 acre-feet annually outflows<sup>25</sup> of which a portion may be available for capture from the underflow. While testimony presented indicated a belief that significant quantities of water may be available for capture from storage, it is unknown what quantity that would be, and if any underground water could be appropriated without unreasonable and irreversible impacts.<sup>26</sup> The testimony and evidence indicated that a portion of the groundwater outflow from Coyote Springs Valley is believed to discharge at a rate of approximately 37,000 acre-feet annually at the Muddy River Springs area and approximately 16,000 to 17,000 acre-feet annually flows to groundwater basins further south, possibly to Garnet Valley, Hidden Valley and California Wash Hydrographic Basins.<sup>27</sup>

The approximately 37,000 acre-feet annually of water discharged from the large springs located near the central part of the Upper Moapa Valley (aka as the Muddy River Springs area - hydrographic basin 219) is fully appropriated pursuant to the

---

<sup>25</sup> Taking into account for 4,000 afa of in-basin recharge and 1,000 afa of evapotranspiration.

<sup>26</sup> ~~See~~ testimony of Terry Katzer and David Donovan, public administrative hearing before the State Engineer, July 16-24, 2001.

<sup>27</sup> Ibid.

Muddy River Decree,<sup>28</sup> and, therefore, is not available for appropriation. It is believed that the source of water discharged originates mainly from the carbonate-rock aquifer system, but it is unknown if the discharge originates solely from the White River Flow System or is also influenced by discharge from the Meadow Valley Flow System or if there is influence from the alluvial aquifer. Further, there are listed endangered and/or potential threatened species that exist in the Muddy Springs/Muddy River area.

The testimony and evidence from the hearing on the LVVWD's applications in Coyote Springs Valley indicated that their own expert witnesses were unable to make a suggestion to the State Engineer as to what part of the water budget could be captured without a great deal of uncertainty, and that the question cannot be resolved without stressing the system.<sup>29</sup> Further, the State Engineer's ability to determine if development of the carbonate-rock aquifer system will impact existing rights is dependent on how the water rights are brought "on-line" and monitored.<sup>30</sup> Today, little is still known about the hydrologic connectivity between the groundwater basins, virtually nothing is known about the mountain blocks, estimates of recharge to the area can vary by a factor of two, there is probably some connectivity between the water in the carbonate-rock aquifers and the alluvial groundwater basins,<sup>31</sup> there is still little data available, and not much has changed from the information known in 1984.

---

<sup>28</sup> Judgment and Decree, In the Matter of the Determination of the Relative Rights In and To the Waters of the Muddy River and Its Tributaries in Clark County, State of Nevada, March 12, 1920, Tenth Judicial District Court of the State of Nevada, In and For the County of Clark.

<sup>29</sup> See, testimony of Terry Katzer and David Donovan, public administrative hearing before the State Engineer, July 16-24, 2001.

<sup>30</sup> Ibid.

<sup>31</sup> Ibid.

As previously noted, on March 8, 2002, the State Engineer issued State Engineer's Order No. 1169<sup>32</sup> by which he ordered that all applications pending and any new filings for the appropriation of water from the carbonate-rock aquifer system in Coyote Springs Valley (Basin 210), Black Mountains Area (Basin 215), Garnet Valley (Basin 216), Hidden Valley (Basin 217), Muddy River Springs aka as Upper Moapa Valley (Basin 219), and Lower Moapa Valley (Basin 220) would be held in abeyance until further information is obtained by stressing the aquifer by the pumping of the water under those water right permits already issued to appropriate water from the carbonate-rock aquifer system. While the studies proposed in 1985 were a beginning, those studies indicated that large-scale developments with sustained withdrawals of water from the carbonate-rock aquifers would result in water-level declines and depletion of stored water, but that isolated smaller groundwater developments or developments of limited duration may result in water-level declines and springflow reductions of manageable and acceptable magnitudes. However, very little additional information based on hard science has been produced since that time.

The State Engineer informed applicants for additional water from the above-referenced hydrographic basins of the need for additional study before a final determination can be made on carbonate-rock aquifer system water right applications in the referenced basins. The purpose of the study is to analyze the effect of pumping under those water rights already issued for appropriation of water from the carbonate-rock aquifer. The entities ordered to participate in the study are at a minimum to include: the LVVWD, SNWA, Coyote Springs Investment, LLC, Nevada Power Company, and Moapa Valley Water District. The study is to cover a 5-year minimum period during which at least 50% of the

---

<sup>32</sup> Official records in the Office of the State Engineer.

water rights currently permitted in the Coyote Springs Valley groundwater basin are pumped for at least 2 consecutive years.

During the administrative hearings in the summer of 2001, evidence was presented by witnesses for the Moapa Band of Paiute Indians indicating a belief that additional water comes into California Wash above the previous estimates of perennial yield. But, their testimony also indicated a belief there is already a downward trend in water levels for the carbonate-rock aquifer during periods of heavy pumping at the Arrow Canyon well, as was shown in the Las Vegas Valley Water District's model presented at the hearing<sup>33</sup>, and they are seeing carryover drawdown, which will impact the carbonate-rock aquifer, which is filling the alluvial aquifer. However, the witnesses further indicated that there may be a substantial quantity of water available in the carbonate-rock aquifer, but if for one reason or another a drawdown is caused near the Muddy River springs, spring flow will be influenced independent of the availability of water. These witnesses testified that future development of the carbonate-rock aquifer should be approached by pumping "whatever you can without getting into trouble," but that water should not just be appropriated upgradient of the Muddy River springs, but also downgradient in the California Wash Hydrographic Basin.<sup>34</sup> "[A]t this point all we have is ideas and concepts and yet no proof about where that inflow occurs."<sup>35</sup> These witnesses for the Moapa Band of Paiutes postulated that 6,000 acre-feet "upwells" or enter in the area of California Wash, which they believe explains isotopic data in the area.<sup>36</sup> If 16,000 to 17,000 acre-feet is believed to by-pass the

<sup>33</sup> See, testimony of Martin Mifflin, Henk Haitjema and Cady Johnson, public administrative hearing before the State Engineer, July 16-24, 2001, pp. 820-831.

<sup>34</sup> Id. at 925-930.

<sup>35</sup> Id. at 943.

<sup>36</sup> Id. at 944-947.

Muddy River Springs area, the water right permits already issued in Coyote Springs Valley alone equal the estimate of the amount of carbonate flow that by-passes the region, and is not part of the flow discharged from the Muddy River Springs area. These 16,000 to 17,000 acre-feet perhaps flow through Hidden Valley, Garnet Valley and California Wash. But the witnesses for the Moapa Band of Paiutes believe there is additional water in the area of California Wash, but that evidence is speculative.

When the State Engineer issued Order No. 1169, the California Wash Hydrographic Basin was notably left out. This was done in recognition that perhaps this is the next basin in which the pumping of a small quantity of water could be permitted for stressing the carbonate-rock aquifer system, because it is downgradient of the Muddy River Springs. As the tribal witnesses believed should be done, this will enable the system to be stressed downgradient of the Muddy River Springs area in order to study the reactions to pumping from this portion of the region in conjunction with the other areas, which are to be studied under State Engineer's Order No. 1169.

The State Engineer finds that little is known as to what yield exists from the carbonate-rock aquifer and its impact on the alluvial aquifers or discharge springs of the regional area. However, based on the scientific studies to date, the experts believe there is some water that can be developed from the system, but only through slow, staged development of small amounts accompanied by significant monitoring, studying and reporting, with plans for mitigation if impacts to existing water rights are shown. The State Engineer finds while he has concerns over development of the carbonate-rock aquifer system, lack of knowledge should not stop the development of the carbonate-rock aquifers in light of their potential as a significant resource in one of the driest places in the nation. However, development should proceed in relatively small quantities and cautiously.

Therefore, the State Engineer finds he will not consider granting both applications as requested or granting any one application for the diversion rate or quantity requested.

VII.

As noted, by letter dated March 26, 2002, the LVVWD requested the State Engineer proceed with action on Applications 54075 and 54076, which were filed to appropriate 14,480 acre-feet annually.<sup>37</sup>

The LVVWD requested that in the event the permits are issued for less than the amount requested, that the State Engineer withhold final action on the remaining portion of the ground water applied for until such time as definitive data on the availability of additional ground water in Basin 218 is available. The LVVWD indicated that it intends to make any permits issued under these applications available to the Moapa Band of Paiutes provided that a settlement agreement<sup>38</sup> between the Tribe and the LVVWD has been finalized. The settlement agreement indicates the Tribe wishes to develop the Reservation, including without limitation the development of a natural gas-fired power plant. However, the LVVWD further provided that, although these two applications were filed as part of what has come to be known as the Cooperative Water Project, development along the I-15 corridor and continued growth in the north section of Las Vegas have caused the LVVWD and SNWA to evaluate resource opportunities in relative proximity to these areas separately from the Cooperative Water Project, as reflected in the 2002 SNWA Resource Plan.

In State Engineer's Ruling No. 5008, which addressed the LVVWD's request to appropriate water in Hidden and Garnet Valleys,

---

<sup>37</sup> Letter dated March 26, 2002, from David Donnelly to State Engineer. File Nos. 54075 and 54076, official records in the Office of the State Engineer.

<sup>38</sup> See, Draft Settlement Agreement attached to letter from David Donnelly to State Engineer, dated March 26, 2002. File Nos. 54075 and 54076, official records in the Office of the State Engineer.

the State Engineer noted that the national news of late is filled with stories as to the lack of sufficient power generating resources in the western United States. Ruling No. 5008 includes significant discussion about the power situation, as it was believed to exist one year ago, and references Governor Guinn's February 22, 2001, energy plan for Nevada, which includes expediting the construction of some of the proposed power plants and negotiating for some of that power to remain in Nevada.<sup>39</sup> State Engineer's Ruling No. 5008 was premised on that immediate need for power generation, and that action on the applications in Hidden and Garnet Valleys would allow the LVVWD to provide water resources for the construction of realistic power generation projects, which will use water efficient, air-cooled technology, in exchange for a portion of the energy remaining in Nevada. In Ruling No. 5008, the State Engineer found that evidence indicated a power crisis was on the horizon for Southern Nevada.

In the LVVWD's request that the State Engineer act on Applications 54075 and 54076, it indicates that it is the LVVWD's intention to make any permits issued under these applications available to the Moapa Band of Paiutes under a proposed settlement, which addresses ground water and surface water issues of the Tribe. The proposed settlement indicates that the Tribe wishes to develop a natural-gas fired power plant on its reservation, but seeks an initial use of at least 10,000 acre-feet annually, indicating the Tribe is likely planning a water-cooled power plant.

Technology is available, which can produce significant amounts of electricity using air-cooled systems. This technology uses significantly less quantities of water. The State Engineer recognizes there are unique issues when dealing with tribal

---

<sup>39</sup> Letter from David Donnelly, Deputy General Manager, Las Vegas Valley Water District to Hugh Ricci, State Engineer, dated March 5, 2001. File Nos. 54073 and 54074, official records of the Office of the State Engineer.



claims, but does not believe it is prudent to use substantial quantities of newly appropriated ground water for water-cooled power plants in one of the driest places in the nation, particularly with the uncertainty as to what quantity of water is available from the resource, if any. However, the State Engineer notes that his analysis may not be the same in the context of a change application of water rights that had previously been placed to beneficial use. The State Engineer finds that until a determination can be made as to the quantity of water available, any amount granted for appropriation must be limited as was done in State Engineer's Ruling No. 5008 and State Engineer's Order No. 1169.

The State Engineer finds there is no definitive evidence of a substantial quantity of water being available from the groundwater resources of the California Wash Hydrographic Basin. The State Engineer finds from the evidence and testimony presented during the July and August 2001 administrative hearings that California Wash is perhaps the next best place to begin stressing the carbonate-rock aquifer system, but with the same small quantity of water, monitoring and mitigation provisions as set forth in State Engineer's Ruling No. 5008. The State Engineer finds that whether the applicant decides to pursue a settlement agreement with the Moapa Band of Paiutes is not presently before him, but further finds there are sufficient reasons to grant the LVVWD a municipal water right for a small quantity of water from this groundwater basin.

#### VIII.

Many of the protestants alleged that these applications were two of the 146 filed by the Las Vegas Valley Water District, which when combined, sought a quantity of water that would deprive the area of origin of water needed to protect and enhance its environment and economic well being, and that the diversion would

unnecessarily destroy environmental, ecological, scenic and recreational values the State holds in trust for its citizens.

The State Engineer finds the manner and place of use under the applications as filed is for municipal and domestic purposes within Clark, Lincoln, Nye and White Pine Counties. The State Engineer finds that the service area of the Las Vegas Valley Water District is solely Clark County.<sup>40</sup> The State Engineer finds there is evidence from the July 2001 administrative hearings and the 2002 SNWA Resource Plan,<sup>41</sup> which indicates that the LVVWD must pursue other water resource options. The State Engineer finds, until more is known about whether the carbonate-rock aquifer area is a significant source of ground water or not available, it is impossible to address whether there is a need to protect and enhance the environment and economic well-being of the area of origin. The State Engineer finds, until more is known about whether the carbonate-rock aquifer is a significant source of ground water that can be appropriated on a sustained basis, it is impossible to address whether the diversion would unnecessarily destroy environmental, ecological, scenic and recreational values the protestants allege the State holds in trust for its citizens.

The State Engineer finds that by issuing one of the permits requested, for a limited amount of water, and holding the other application in abeyance, progress can be made toward information gathering, while hopefully protecting the resource and other areas of concern. The State Engineer finds that the requirements of monitoring and mitigation being imposed will provide the needed information as to whether the appropriation is environmentally sound from a hydrologic standpoint. The State Engineer finds,

---

<sup>40</sup> Nevada Revised Statutes, Text of Special and Local Acts, Vol. 11, pp. 283-295.

<sup>41</sup> Letter dated March 26, 2002, from David Donnelly to State Engineer. File Nos. 54075 and 54076, official records in the Office of the State Engineer.

since he is only going to grant one application for a reduced quantity and is holding the other application in abeyance until the study ordered in State Engineer's Order No. 1169 is completed, he does not believe use of the water will unduly limit future growth and development in the California Wash groundwater basin but, rather will enhance growth in the basin.

IX.

Some of the protestants alleged that the applications should not be granted in the absence of comprehensive planning. The State Engineer finds there is no provision in Nevada Water Law which requires comprehensive water resource development planning prior to the granting of a water right application, and further as discussed below, that the LVVWD and the SNWA have engaged in long-range planning.

X.

Some protestants alleged that the approval of the applications would sanction and encourage the willful waste and inefficient use of water in Las Vegas Valley.

In Las Vegas, the role of conservation is critical to the region's water planning efforts. In 1990, the local water and wastewater agencies completed an extensive supply and demand projection process that resulted in public realization that the region would run out of water in fifteen years even with conservation. The need for conservation was quickly acknowledged by the public and widespread conservation efforts began in the summer of 1991. Creation of artificial lakes was banned, water waste ordinances were adopted, and lawn watering was restricted during the hotter time of the day.

\* \* \*

To begin the shift to water-conserving rates, local water purveyors switched from flat rates to increasing block rates.

From 1991 through 1994, conservation education and water rates slowly increased. During the IRP [Integrated Resource Plan] process in 1994 and 1995, it became obvious that conservation could extend the time

frames when additional resources and facilities are needed. As a result, the Board adopted recommendations on conservation, including one that required a 10 to 15 percent reduction in maximum day water usage by summer 2000.<sup>42</sup>

Further activity towards conservation in the Las Vegas Valley has encompassed public education to reduce peak summer usage, agreeing to follow the Bureau of Reclamation's conservation measures called "Best Management Practices", waste water reuse and a xeriscape study. "A recent survey by the City of Austin, Texas of water purveyors around the nation shows the Authority's overall program is among the most comprehensive in the country."<sup>43</sup>

The State Engineer finds the SNWA is taking conservation seriously as part of its overall water management plan.

**XI.**

Some of the protestants alleged that the LVVWD has not obtained rights-of-way from the BLM. The State Engineer finds every water right permit is conditioned on the applicant obtaining any necessary right-of-way and these applicants will not be treated any differently.

**XII.**

Some of the protestants alleged that the LVVWD lacks the financial capability for developing the project. This protest allegation is more relevant if the State Engineer were considering all the applications filed for the Cooperative Water Project together as one project. The State Engineer finds the issue of financial ability to develop the massive project of all the LVVWD filings is not currently relevant.

**XIII.**

Some of the protestants alleged that the applications failed to include statutorily required information, specifically a

<sup>42</sup> Southern Nevada Water Authority 1999 Water Resource Plan, at 7-10, October 1999.

<sup>43</sup> Id. at 8.

description of the place of use, the proposed works, the estimated cost of such works and the estimated time required to go to beneficial use. The State Engineer finds he has sufficient information to address the applications.

**XIV.**

Some of the protestants alleged that the applications failed to contain sufficient information for the State Engineer to safeguard the public interest and that a publicly-reviewable assessment must be done of the cumulative impacts of the proposed extraction, mitigation measures needed and alternatives to the proposed extraction. The State Engineer finds that the process envisioned by allowing relatively small amounts of water to be appropriated along with staged development and significant monitoring addresses this protest concern; however, there is nothing in the Nevada Water Law, which requires a public review assessment process. The records of the State Engineer are always available for public review.

**XV.**

Some of the protestants alleged that the population projection numbers are unrealistic. The applicant projected a population 1,400,000 people by the year 2020. The present population of Clark County is approximately 1,400,000 people; therefore, the State Engineer finds the population projections were not unrealistic, but rather underestimated the projected population.

**XVI.**

Some protestants alleged that these applications, among the others, would allow the LVVWD to "lock up" vital water resources for possible use in the distant future beyond current planning horizons, and further alleged that the applications substantially overstate future water demand needs. These applications were filed in 1989. In 1989, the LVVWD believed it was running out of additional water resources in the very near future.

In 1987, the Nevada Legislature enacted the first water laws providing for projects, which recharge, store and recover water.<sup>44</sup>

Recharge by the LVVWD began around 1989. In 1991, the LVVWD issued a moratorium, which prohibited any new hookups to the water system. Thus, the future water demands were not beyond current planning horizons.

Since the filing of the applications, the LVVWD, along with and as a member of the SNWA, has been involved in many varied programs to plan for the future resources of the Las Vegas Valley.

In 1991, the SNWA was formed, and the SNWA purveyors agreed that any new contract with the Secretary of the Interior for remaining unallocated water from the Colorado River would be with the SNWA and would deliver water to purveyor members and they agreed on the method of allocating any water received.<sup>45</sup> The remaining Colorado River water was contracted for in 1992.

In 1993 and 1994, the SNWA obtained additional Colorado River water through agreements with Southern California Edison and Basic Management, Inc., and agreements have been reached regarding reclaimed water.<sup>46</sup> Beginning in 1996, the Secretary of Interior declared a surplus condition on the Colorado River every year (up to the date of the October 1999 Water Resource Plan), and under the excess surplus criteria this had provided additional water for Southern Nevada.<sup>47</sup> Since then, the Department of Interior has issued a record of decision making the Interim Surplus Guidelines effective beginning in 2002, which will provide Colorado River water for the SNWA purveyors through 2016,<sup>48</sup> if a surplus is

---

<sup>44</sup> Nevada Revised Statutes § 534.250 - 534.340.

<sup>45</sup> Southern Nevada Water Authority 1999 Water Resource Plan, at 14-15, October 1999, p. 14.

<sup>46</sup> *Id.* at 14-15.

<sup>47</sup> *Id.* at 20-21, 31-36.

<sup>48</sup> Letter from David Donnelly, Deputy General Manager, Las Vegas Valley

available and other factors tied into California cutting down on its use of the Colorado River are in place by the end of 2002. Planning for the reuse of reclaimed water has taken place over the last decade and thousands of acre-feet of water are now used in power plants and on golf courses.<sup>49</sup> Furthermore, there now exists the possibility of using the Arizona Water Banking program, an option that did not exist at the time of the filing of the applications.<sup>50</sup> Nevada is very close to, if not there, for having used its full allotment of Colorado River water.

The State Engineer finds as to these applications, the amount requested under the applications is not substantially overstated as to future planning needs for the Las Vegas Valley. The State Engineer finds that Nevada is a prior appropriation state, that is, first in time, first in right. The State Engineer further finds all water belongs to the public subject to appropriation pursuant to law.<sup>51</sup> The applicant is moving forward with a use for the water requested for appropriation under these applications; therefore, there is a reasonable expectation to go to beneficial use within a reasonable amount of time. The State Engineer finds the LVVWD's need for future resources is not beyond the current planning horizon.

#### XVII.

Some of the protestants alleged that the granting of the applications would destroy the economic and growth potential of the hydrographic basin. The State Engineer finds Nevada is a prior appropriation state, that is first in time is first in right. The State Engineer finds these applications would not

---

Water District to Hugh Ricci, State Engineer, dated March 5, 2001. File Nos. 54073 and 54074, official records of the Office of the State Engineer.

<sup>49</sup> Southern Nevada Water Authority 1999 Water Resource Plan, pp. 16-17, October 1999.

<sup>50</sup> Id. at 36-38.

<sup>51</sup> NRS § 533.025, 533.030.

destroy the economic and growth potential of the hydrographic basin, but rather growth is occurring in the area, and the water use is also for the area since growth is occurring along the I-15 corridor.

**XVIII.**

Some of the protestants alleged that further study is needed because the potential effects are impossible to anticipate, that the public interest will not be served if the water and water-related resources in the Death Valley National Monument and the Lake Mead National Recreational Area are diminished or impaired as a result of the appropriations, and that the applications will eventually reduce or eliminate the flows from springs which are discharge areas for a regional groundwater flow system upon which the National Park Service claims senior appropriative and implied Federal reserved water rights. The State Engineer finds that gradual, staged appropriations of smaller quantities of water with sufficient monitoring and mitigation will deal with these protest issues, and there are too many unknowns to be able to address this issue without developing additional science. The approach being taken by the State Engineer in Ruling No. 5008, and Order No. 1169 is that of further study.

**XIX.**

Some of the protestants alleged that the proposed diversions are from the carbonate-rock province of Nevada that is typified by complex, interbasin, regional-flow systems that includes both basin-fill and carbonate-rock aquifers along with interbasin flows that are poorly defined, and the diversions will reduce the interbasin flows, modify the direction of groundwater movement in adjoining and hydraulically connected basins thereby reducing spring and stream flows. The State Engineer finds this is the reasoning behind gradual, staged development, which is to develop further knowledge that it lacking at this time as to how the complex carbonate-rock aquifer system works. The State Engineer



further finds it is not known whether the diversions will reduce the interbasin flows, modify the direction of groundwater movement in adjoining and hydraulically connected basins reducing spring and stream flows; thus, the reasoning behind gradual development, monitoring, and mitigation, if necessary.

**XX.**

Some of the protestants alleged that the available scientific literature is not adequate to reasonably assure that the proposed diversions will not impact senior rights and water resources. The State Engineer finds this statement to be true, and again; thus, the reasoning behind gradual development, monitoring and mitigation, if necessary. ~~The data will never be obtained through "literature," but only through the development of science based on real facts. The State Engineer further finds without development of the resource the knowledge will not be obtained to even explore whether development of the resource is feasible or not.~~

**XXI.**

Some of the protestants alleged that as of December 1988 the sum of Applications 54075 and 54076 and the committed diversions will exceed the perennial yield of the groundwater basin; therefore, there is no water available for appropriation. ~~The State Engineer finds the water requested for appropriation under these applications is from the carbonate-rock aquifer and at this time it is unknown what contribution if any the carbonate-rock aquifer has to the estimated perennial yield of the California Wash groundwater basin.~~

**XXII.**

~~Some of the protestants alleged that it is unclear whether the amount contemplated in the applications is necessary and reasonably required for the proposed purposes. The State Engineer finds since he is taking these applications basin by basin and the amount permitted under one application is being reduced, with the~~

other application being held in abeyance, it is a reasonable amount for the municipal use envisioned.

**XXIII.**

Some of the protestants alleged that the granting of the applications will lower the water table, sanction water mining, degrade the water quality, cause negative hydraulic gradient influences, threaten springs and seeps and phreatophytes, which provide water and habitat critical to the survival of wildlife, including endangered species and grazing livestock. They further alleged that the applications would create air contamination and pollution in violation of State and Federal statutes.

The State Engineer finds these protest claims directly relate to the discussion above as to gradual, staged development with sufficient monitoring to explore the capacity of the system, and air quality issues are addressed by the Clark County Health Department. Furthermore, the State Engineer finds that as a municipality with access to resources such as the Colorado River or the Muddy River, the LVVWD has sufficient resources to plan for any necessary mitigation.

**XXIV.**

Some protestants alleged that the applications will cause water rates to go up thereby causing demand to go down thereby rendering the water unnecessary. The State Engineer finds this protest claim to be completely hypothetical and not within his scope of review.

**XXV.**

One protestant alleged that until the claims under the Treaty of Ruby Valley (1863) are adjudicated the applications are premature. The State Engineer finds issues as to the Treaty of Ruby Valley are not within his jurisdiction and all water right permits are issued subject to existing rights.

**XXVI.**

The State Engineer finds that if any significant impacts to existing water rights are detected the LVVWD or any assignee will be required to mitigate those impacts.

**CONCLUSIONS OF LAW**

**I.**

The State Engineer has jurisdiction over the parties and the subject matter of this action and determination.<sup>52</sup>

**II.**

The State Engineer is prohibited by law from granting a permit under an application to appropriate the public waters where:<sup>53</sup>

- 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 the expert scientific evidence found in the reports prepared over the last decade leads him to believe there is possibly some unappropriated water in the carbonate-rock aquifer system, but that further knowledge is necessary before any amount can be quantified. The State Engineer concludes that only by gradual, staged development can the additional science be obtained, which will allow a better understanding of the carbonate-rock aquifer(s).

**IV.**

The State Engineer concludes that little is known as to what

<sup>52</sup> NRS chapters 533 and 534.

<sup>53</sup> NRS § 533.370(3).

yield exists from the carbonate-rock aquifer, if any. The State Engineer concludes it is impossible to say if there will be any impacts on the alluvial aquifers of the area groundwater basins or existing water rights within those groundwater basins. The State Engineer concludes that by providing safeguards, such as monitoring and mitigation, there are some assurances that any impacts can be quantified and, if necessary, mitigated.

V.

The State Engineer concludes that Nevada Water Law does not require comprehensive planning before the granting of a water right application.

VI.

The State Engineer concludes the evidence does not indicate that appropriation of water from the carbonate-rock aquifers will automatically conflict with existing water rights. The complexity and unknowns of the system make such a determination extremely difficult. Only by allowing some development to proceed will the additional science be obtained to provide further knowledge as to how the carbonate-rock aquifer and alluvial aquifer systems are connected, if they are. 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 requirements of monitoring and mitigation, if necessary. 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 carbonate-rock aquifer.

VII.

The State Engineer concludes that the protest issue that the applications would encourage willful waste and inefficient use of

water in the Las Vegas Valley is not a protest issue warranting consideration, and the LVVWD has been proactive in conservation planning.

VIII.

The State Engineer concludes if the applicant needs to obtain the approval of the United States Department of Interior, Bureau of Land Management for any necessary rights-of-way, that is any issue for the applicant to address with the Bureau of Land Management. The granting of a water right permit does not waive the requirements of other State or Federal laws.

IX.

The State Engineer concludes the applications contain sufficient information for the State Engineer to safeguard the public interest. The State Engineer concludes that it does not threaten to prove detrimental to the public interest to allow smaller quantities of water to be developed from the carbonate-rock aquifer system, but the development must be staged and in conjunction with sufficient monitoring, and plans for mitigation of impacts, if necessary. The State Engineer concludes it does not threaten to prove detrimental to the public interest to allow some development of this resource to proceed. The State Engineer concludes that the LVVWD has sufficient resources to plan for any necessary mitigation, and any possible assignee must also have mitigation resources available and will be subject to all permit terms.

X.

The State Engineer concludes that Nevada Water Law does not require a publicly-reviewable assessment of the cumulative impacts of the proposed appropriation.

XI.

The State Engineer concludes he is only acting on Applications 54075 and 54076 under this ruling and since the applicant has proposed a plan for the beneficial use of the water

in the near future, the issue of "locking-up" the resource beyond current planning horizons is moot. The State Engineer concludes the carbonate-rock aquifer system is so complex and unsure that pending applications cannot be acted on quickly due to the caution in development that must be exercised.

**XII.**

The State Engineer concludes that granting the applications will not destroy the economic and growth potential of the hydrographic basin because, it is development along the I-15 corridor, which includes the hydrographic basin, that has prompted the request to act on the applications.

**XIII.**

The State Engineer concludes that the required monitoring and mitigation protect the water-related interests of the Death Valley National Monument and the Lake Mead Recreational Area.

**XIV.**

The State Engineer concludes that 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 and stream flows. The State Engineer concludes it is because of these unknowns that he will require monitoring and mitigation, if necessary.

**XV.**

The State Engineer concludes that while the existing rights in the California Wash groundwater basin exceed the estimated perennial yield, that analysis did not contemplate the carbonate-rock aquifer resource as perhaps changing the analysis of the water available for appropriation and only by stressing the system can such a determination be made.

**XVI.**

The State Engineer concludes it would threaten to prove detrimental to the public interest to allow the appropriation of

the full quantity requested under the applications at this time, since no determination can be made that there is even unappropriated water available.

**XVII.**

~~The State Engineer concludes that by granting of these water right applications he is not sanctioning water mining; and thus, the requirement for monitoring and mitigation.~~

**XVIII.**

The State Engineer concludes that the issue of air contamination or pollution is within the authority of the Clark County Health Department.

**XIX.**

~~The State Engineer concludes that the protest issue that the applications will cause water rates to go up causing demand to go down is without merit.~~

**XX.**

The State Engineer concludes that any issues as to the Treaty of Ruby Valley are not within his jurisdiction and all water right permits are issued subject to existing rights.

**RULING**

~~The protests to Application 54075 is upheld in part and overruled in part. They are being upheld in that more information is necessary before the appropriation of large quantities of water from the groundwater basin can proceed. They are being overruled in that development of a smaller quantity of water is being permitted. Application 54076 is being held in abeyance until at least the study ordered under State Engineer's Order No. 1169 has been completed. Application 54075 is hereby granted subject to:~~

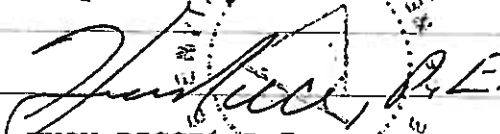
1. Existing rights;
2. Payment of the statutory fees;
3. A monitoring program approved by the State Engineer prior to the diversion of any water permitted under these

applications prepared in conjunction with the study ordered in State Engineer's Order No. 1169.

4. The total duty under Permit 54075 shall be limited to 2,500 acre-feet annually with a diversion rate of 5.0 cfs, no additional water will be granted under this application; and

5. If impacts to existing rights are demonstrated, the applicant or any assignee will be required to mitigate the same.

Respectfully submitted,

  
HUGH RICCI, P.E.  
State Engineer

HR/SJT/jm

Dated this 18th day of  
April, 2002.