

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

IN THE MATTER OF APPLICATION 52338)
FILED TO APPROPRIATE THE WATERS)
FROM AN UNDERGROUND SOURCE WITHIN)
THE FORTY MILE CANYON-JACKASS)
FLATS GROUNDWATER BASIN, NYE)
COUNTY, NEVADA.)

RULING
3870

GENERAL

I.

Application 52338 was filed on July 22, 1988 by the U.S. Department of Energy requesting permission to appropriate 0.2 cubic feet per second of the underground waters of the State of Nevada within the Forty Mile Canyon-Jackass Flats Hydrologic Area for Industrial and Domestic purposes. The proposed point of diversion is an existing well located within the NE1/4 SW1/4 of Section 19, T.13S., R.50E., M.D.B.&M. The estimated use not to exceed 7.4 acre-feet during the first year increasing to a maximum of 94.83 acre-feet annually by year two.¹

II.

Application 52338 was timely protested on January 3, 1989, by the United States Department of the Interior, National Park Service for the following reasons and on the following grounds to wit: "The Application, if granted, may cause injury to reserved and appropriated water rights of the United States, National Park Service, Death Valley National Monument, including the United States' reserved water rights at Devil's Hole, a detached unit of Death Valley National Monument. Therefore, the protestant requests that the application be denied."¹

¹ Public record in the office of the State Engineer.

III.

On March 15, 1989, the Nevada Attorney General on behalf of the State of Nevada and the Nevada Agency for Nuclear Projects/Nuclear Waste Project Office, petitioned the State Engineer for intervention in the matter of Application 52338, pursuant to NRS 328.500, NRS 228.170, NRS 228.180 and NRS 228.190. Order No. 1005,² issued by the State Engineer on October 10, 1989, granted the Petition for Intervention.

IV.

The 1989 Nevada Legislature enacted Assembly Bill No. 222, Assembly Joint Resolution No. 4 and Assembly Joint Resolution No. 6 which prohibited the storage of high level radioactive waste storage in Nevada. The Nevada Attorney General's Opinion Letter (November 1, 1989) confirmed the prohibition of high level radioactive waste storage in Nevada.¹

V.

On December 26, 1989, the State Engineer declared Application 52338 moot in accordance with the Attorney General's Opinion Letter and the legislation mentioned above, and returned Application 52388 and the associated application fee to the U.S. Department of Energy, Yucca Mountain Project Office.¹

VI.

By letter of December 26, 1989, the State Engineer returned the National Park Service's protest to Application 52338 and the associated protest fee to Owen R. Williams, U.S. National Park Service.¹

² Exhibit 4 of Public Administrative Hearing.

VII.

On September 19, 1990, the United States Court of Appeals for the Ninth Circuit issued an opinion in Nevada v. Watkins,³ declaring Nevada's legislation and the veto of Yucca Mountain site characterization activities ineffective and preempted by the Nuclear Waste Policy Amendment Act.

VIII

On October 8, 1990, the Department of Energy resubmitted Application 52338 accompanied by the statutory filing fee to the Nevada Division of Water Resources for processing.¹

IX.

The State of Nevada filed a petition for certiorari with the U.S. Supreme Court and certiorari was denied on March 4, 1991.

X.

On April 1, 1991, the United States Department of the Interior, National Park Service requested withdrawal of the protest of Application 52338 subject to the permit being conditioned upon compliance with the provisions of an enclosed monitoring program, titled Monitoring Program for the Groundwater Levels and Spring Flows in the Yucca Mountain Region of Southern Nevada and California, February 1991, United States Department of Energy, Yucca Mountain Project Office. The National Park Service was informed by the State Engineer that their request to withdraw the protest would be kept on file with this office, but the protest would not be withdrawn pending finalization of any action by the State Engineer concerning the monitoring plan.¹

XI.

After proper notice was given to all interested parties, a pre-hearing conference was held on June 13, 1991, in Carson City. The purpose of the conference was to consider hearing procedures

³ 914 F.2d 1545 (9th Cir. 1990).

and to identify the issues to be heard relating to protested Application 52338.

XII.

A public administrative hearing in the matter of Application 52338 was held on Tuesday, September 24, 1991 through Friday September 27, 1991 and Monday September 30, 1991 through Friday October 4, 1991, in Las Vegas, Nevada after proper notice was given to all interested parties.

XIII.

Administrative notice was taken of all records and information available in the office of the State Engineer, in addition to those records entered specifically as State's Exhibits for the hearing record.

XIV.

The State Engineer received a letter dated September 23, 1991, from the National Park Service confirming that they would not appear at the Public Administrative Hearing and requesting that their protest of Application 52338 be withdrawn subject to approval of the monitoring plan.¹

FINDINGS OF FACT

I.

By motion at the commencement of the Public Administrative Hearing, the applicant requested that the application be considered for a maximum duty of 144.6 acre-feet per year which equates to a continuous diversion of 0.2 cubic feet per second for 24 hours per day, 365 days per year. The State Engineer ruled that Application 52338 would be considered on the basis of a diversion rate of 0.2 cubic feet per second and maximum duty of 94.83 acre-feet per year as stated on Application 52338 filed with the State Engineer's Office.⁴

⁴ Transcript of Public Administrative Hearing, Vol. I pgs. 14-25.

II.

There was undisputed testimony that the place of use of the subject application is, in part, on lands 1) that have previously been withdrawn from the public domain as part of the Nevada Test Site; 2) that have limited public access by agreement with the Bureau of Land Management; and 3) that are under control of the U.S. Air Force. The subject application proposes to appropriate water by State permit from an existing well on lands under control of the Nevada Test Site and from which water is pumped under an unclaimed reserved water right. Nothing in this ruling should be misconstrued to be an adjudication or recognition of any other water rights that may exist on this source or at this point of diversion.

III.

The purpose for the subject application is described as being "site characterization".¹ At the pre-hearing conference held on June 13, 1991, the applicant was informed by the State Engineer that they would have to describe more specifically how much water is being sought, and for what purpose, so that a final quantity could be determined.⁵ The State Engineer finds that water used for dust control, drilling and sinking shafts is a beneficial use of water and is not detrimental to the public interest. These are identical uses to the many permits for mining purposes that the State Engineer grants regularly.

⁵ Transcript of Pre-Hearing Conference June 13, 1991, pgs. 65 to 70.

IV.

Testimony received from the applicant describe the major components of site characterization as:⁶

1. Regional Studies.
 - A. Surface based testing such as drilling and trenching with investigations including geology, volcanology, hydrology, tectonics and geoengineering studies.
2. Site Specific.
 - A. Underground exploratory activities to establish detailed knowledge of underground conditions in the potential repository area. Types of investigations will include detailed studies of faults and fractures, engineered barrier performance and natural processes.

The quantity of water to be used each year will depend on final engineering design, funding and study findings. Testimony stated that use of water includes dust suppression, road construction and maintenance, drill holes, trenches, pads for monitoring stations, underground excavation, and support facility construction.

Evidence submitted by applicant shows water use estimates as follows:⁷

	<u>Acre-feet</u>
Exploratory shaft facility construction and operation	375.0
Includes: Portal Construction	
Underground Excavation	
Muck Transportation	
TBM Machine Cooling	
Surface - Based Testing	38.0
Drill Holes	
Water to Support Testing	
Dust Control/Construction	592.0
Drill Pads	
Road Construction	
Dust Control of Access Roads	
Test Support Complex	
TOTAL	<u>1005.0</u> Acre Feet

⁶ Testimony of Wendy Dixon, Public Administrative Hearing, September 24, 1991, Transcript Volume I, pgs. 64 to 84; see Exhibit 8.

⁷ Exhibit 40, Public Administrative Hearing.

V.

The Nevada Division of Environmental Protection, Air Quality Permit #2693, requires that fugitive dust from all disturbed areas, roads and parking areas, within the test area, must be controlled at all times.⁸ The State Engineer finds that this is a beneficial use of water and does not prove detrimental to the public interest.

VI.

A good share of the testimony and evidence presented by the intervenor was directed towards the water requirements being much larger than the amount indicated by the applicant.⁹ The State Engineer finds that this is not sufficient grounds to deny the application, but the applicant may have to supplement the water sought here with other permits on this or other sources.

VII.

The State Engineer finds that the proposed point of diversion of Application 52338 is from an existing well known by the applicant as well J-13 and is located within the western part of Groundwater Basin 227A (Forty Mile Canyon - Jackass Flat).

VIII.

Testimony and evidence presented by all parties suggested that there are two distinct groundwater flow systems in the area of well J-13, one being the lower carbonate aquifer and the other being the geologically younger volcanic tuffs. There was unrebutted evidence and testimony that the study area should be considered as a regional groundwater system rather than just considering the hydrology of Basin 227A in which the appropriation is sought. There was contradictory testimony on

⁸ Exhibit 72, Public Administrative Hearing.

⁹ Testimony of Martin D. Mifflin, Public Administrative Hearing, October 1, 1991, Transcript Volume VI, pgs. 66 to 76 and pgs. 84 to 96.

the magnitude of mixing, if any, between the lower carbonate aquifer and volcanic tuff aquifer. Testimony and evidence reflected that the existing well, known by the applicant as well J-13, has its total depth and is perforated in the volcanic tuff aquifer, and that the only possibility for a carbonate water contribution would be from leakage or fractures.¹⁰

IX.

Testimony and evidence from geologic, hydrologic and geochemical investigations indicated the recharge of the aquifer from which well J-13 is pumped is from the Forty Mile Wash Area. Testimony, records of the State Engineer's Office, and evidence indicate the groundwater basins which influence, or are influenced by, the Forty Mile Wash Area are the easterly portion of Gold Flat (147), Kawich Valley (157), the easterly portion of Oasis Valley (228), Forty Mile Canyon - Jackass Flat (227A), Forty Mile Canyon - Buckboard Mesa (227B), Crater Flat (229), and the western three-fourths of Amargosa Desert (230). This area was described by the applicant as the Alkali Flat-Furnace Creek Ranch Subbasin.¹¹ In addition, Reconnaissance Report 54 describes a similar subbasin as the Pahute Mesa Ground Water System.

X.

On May 14, 1979, the State Engineer described and designated a portion of the Amargosa Desert Groundwater Basin under the provisions of NRS Chapter 534.¹²

¹⁰ Testimony of William W. Dudley Jr., Hans C. Clausen, Richard R. Luckey, Richard J. Lacamera, James Harrill, Martin D. Mifflin, George Thiel, Zell Peterman, Joe Downey, Linda Lehman and John B. Czarnecki, Public Administrative Hearing.

¹¹ Exhibit 27. Testimony of William Dudley, Hans C. Clausen, Richard R. Luckey, Richard J. Lacamera, James Harrill, George Thiel and John B. Czarnecki, Public Administrative Hearing.

¹² See State Engineer's Order No. 724, public record in the Office of the State Engineer.

XI.

On April 2, 1980, the State Engineer described and designated a portion of the Oasis Valley Ground Water Basin under the provisions of NRS Chapter 534.¹³

XII.

The State Engineer's records reflect the following total existing permitted and certificated groundwater rights and perennial yield for the following basins:

<u>Basin</u>	<u>Existing Permitted & Certificate Rights</u> (Acre-Feet)	<u>Perennial Yield</u> (Acre-Feet)
Gold Flat (147)	73.0	2900 ¹⁴
Kawich Valley (157)	23.0	2000 ¹⁴
Oasis Valley (228)	3384.0 ¹⁵	2200 ¹⁴
Forty Mile Canyon -		
Jackass Flat (227A)	60.0	4000 ¹⁴
Buckboard Mesa (227B)	0.0	3600 ¹⁴
Crater Flat (229)	2995.0 ¹⁶	900 ¹⁴
Amargosa Desert (230)	40,677.0	24,000 ¹⁷

¹³ See State Engineer's Order No. 741, public record in the Office of the State Engineer.

¹⁴ Records from Water Planning Report 3. There is a great deal of discrepancy in these recharge numbers primarily because in the past scientists could only estimate the limit and extent of the contribution from the regional carbonate rock province.

¹⁵ The major portion of this allowance is for irrigation within drainage area of the Town of Beatty. Testimony and evidence reflected that this area is divided from the Alkali Flat - Furnace Creek Drainage Subbasin and is considered within the Oasis Subbasin.

¹⁶ 2534 acre-feet allowed under Permit 48436 for mining and milling purposes. Mining and milling is considered a temporary use. Records on file indicate a pumpage of 34.0 acre-feet in 1991 from this well.

¹⁷ Records from Water Resources Reconnaissance Series Report 14.

XIII.

The State Engineer's records reflect the following estimate of groundwater pumped from the Amargosa Desert Groundwater Basin:

1985	9672.0 Acre-Feet
1986	7237.9 Acre-Feet
1987	6137.0 Acre-Feet
1988	4109.0 Acre-Feet
1989	3921.0 Acre-Feet

The State Engineer finds that although the Amargosa Groundwater Basin is fully appropriated by issuance of permits and certificates, the actual withdrawal of groundwater within the basin is well below the perennial yield and the withdrawal of groundwater is on a downward trend.

XIV.

Pumpage data from 1983 to 1990 from well J-13 and well J-12 (also located in Basin 227A) reflects a maximum yearly pumpage of 141 acre-feet from well J-13 and 103 acre-feet from well J-12. This relates to an additional diversion of 244.0 acre-feet annually from Basin 227A.¹⁸

XV.

The State Engineer finds the testimony and evidence presented at the hearing described three interbasin groundwater systems identified in the study area: 1) Ash Meadows Subbasin, 2) Alkaki Flat-Furnace Creek Ranch Subbasin, and 3) Oasis Valley Subbasin.¹⁹ The State Engineer finds that previous studies on record in the State Engineer's Office define three very similar interbasin groundwater flow systems identified in the study area:

¹⁸ Exhibit 105, Public Administrative Hearing. Well J-13 and J-12 are not permitted by the State Engineer; rather they have been used at the Nevada Test Site under a federal claim of reserved water right.

¹⁹ See Exhibit 27 and testimony by William Dudley, Public Administrative Hearing.

1) Ash Meadows Groundwater System, 2) Pahute Mesa Groundwater System, and 3) Sarcobatus Flat Ground Water System.²⁰ The Pahute Mesa Groundwater System and the Alkali Flat-Furnace Creek Ranch System are very similar except that the western two-thirds of Oasis Valley (228) and the western one-third of Gold Flat (147) were defined as a portion of Oasis Valley System by the applicant and they were considered within Pahute Mesa System by the previous study.

The State Engineer finds the recharge by precipitation for Pahute Mesa Groundwater System and Ash Meadows Groundwater System is summarized as follows:²⁰

PAHUTE MESA GROUNDWATER SYSTEM

<u>Basin</u>	<u>Estimated Annual Recharge Acre-Feet</u>
Gold Flat	3800
Kawich Valley	3500
Buckboard Mesa	1400
Jackass Flat (Western 2/3 only)	580
Crater Flat	220
Oasis Valley	1000
<u>Other Areas</u>	
Amargosa Desert (Western Part)	Minor
Southern Part of Reveille Valley	<u>1000</u>
Total for Pahute Mesa Groundwater System (Rounded)	<u>12,000</u>

The total estimated recharge for Ash Meadows Groundwater System is 33,000 acre-feet which includes 300 acre-feet, from the eastern one-third of Jackass Flats and a minor amount from the eastern portion of Amargosa Desert.

The estimated annual discharge from the springs at Ash Meadows is 17,000 acre-feet leaving an imbalance of recharge - discharge of approximately 16,000 acre-feet.

The estimated average annual discharge from the Pahute Mesa Groundwater System is 9,000 acre-feet. Of this amount, 2,000 acre-feet is discharged in Oasis Valley and the remainder is discharged west of the Ash Meadows fault leaving an imbalance of recharge - discharge of approximately 3,000 acre-feet.²⁰

²⁰ Water Resources-Reconnaissance Series Report 54.

XVI.

The State Engineer finds that the actual pumpage of permitted and certificated rights, in addition to the pumpage of wells J-13 and J-12 within the Alkali Flat - Furnace Creek Ranch Subbasin is well below the perennial yield and less than the estimated recharge for the same subbasin.

XVII.

The State Engineer finds that the annual recharge from precipitation for Basin 227A (western two-thirds only) is 580 acre-feet annually. The total certificated and permitted rights plus maximum pumpage of wells J-13 and J-12 within the last ten years total 304 acre-feet. Application 52338 requests an additional 94.83 acre-feet annually. The State Engineer further finds that the amount of recharge, without considering interbasin flows or groundwater storage, exceeds the potential annual withdrawal of groundwater.

XVIII.

Testimony and evidence presented by the intervenor, suggested that the safe yield has been exceeded in basins 230 and 227A. The intervenor's analysis of safe yield suggests that 6750 acre-feet of water lost to evaporation and evapotranspiration would be a loss to the system and cannot be appropriated. Every well that is drilled in a groundwater basin has an effect on the recharge/discharge relationship. An appropriation cannot capture the recharge; rather a well captures the water in a porous media on its flow path to its discharge point. The State Engineer's Office has historically allowed water of this nature to be appropriated. The State Engineer finds the water can be captured and put to beneficial use that otherwise would be discharging to the Franklin Lake Playa.

XIX.

Evidence presented by the applicant reflects an existing groundwater level monitoring network of approximately 20 wells

within a five mile radius of well J-13. This network was started in 1982 and completed to its present configuration about 1985.²¹

Testimony by applicant's witness²² stated he has observed that the water levels in virtually all of the wells within this network are exceedingly stable over time, and there has been no discernible change in water levels since the network was started in 1982.

Evidence reflected an average annual pumpage of 88 acre-feet from well J-13 and 80 acre-feet from well J-12 since 1983.²³ Application 52338 requests an additional 94.83 acre-feet annually.

XX.

The previously mentioned testimony and evidence reflected that the waters discharged in the Ash Meadows area originate largely from the lower carbonate aquifer, and that well J-13 pumps from the volcanic tuff aquifer. Based in part on the above findings that this appropriation seeks to appropriate water from an existing well (J-13) that has been pumped with various discharges over a period of 20 years, and that monitoring of adjacent areas has taken place for more than ten years which shows only localized water level declines, and that this well produces water from an aquifer and flow system that is unconnected or only slightly connected to the aquifer or flow system that flows toward Ash Meadows and Devil's Hole, the State Engineer finds that there will be no effects on existing rights.

²¹ See Exhibit 46 pg. L-2 for location of monitoring wells, Public Administrative Hearing.

²² Testimony of Richard Luckey, Public Administrative Hearing, transcript Volume IV, pg. 117.

²³ Exhibit 105, Public Administrative Hearing.

XXI.

Scientists for both the applicant and intervenor used standard engineering analytical formulas as a predictive tool to estimate the effects of the additional pumping at well J-13.²⁴ The State Engineer finds that the hydraulic parameters used by the scientists are consistent with standard engineering practices for predictive modeling of underground flow systems. The State Engineer further finds that using the most plausible values for transmissivity, storativity and pumping duration predicts no cones of depressions nor water level declines that would cause an interference with existing rights.

XXII.

The intervenor produced several witnesses who testified as to the fragile nature of the hydraulic habitat for the endangered Desert Pupfish at Devil's Hole²⁵ and many other species of plants and animals at the springs in Ash Meadows.²⁶ The State Engineer is cognizant of the public interest values in this area, however, the evidence does not support a finding that this area would be further imperiled by the approval of this application. To the contrary, the National Park Service withdrew its protest based on a monitoring plan²⁷ that it felt protected its interest. The State Engineer finds that the monitoring plan is indeed sufficient to yield an early indication of water level declines and radius of influence caused by pumping of the subject well.

²⁴ Testimony Models of Richard J. Lacamera (see also Exhibit 51), James Harrill, Joe Downey, John B. Czarnecki, and Martin Mifflin, Public Administrative Hearing.

²⁵ Testimony of Dr. Deacon, Public Administrative Hearing October 3, 1991, Transcript Vol. VIII, pgs. 70 to 110.

²⁶ Testimony of Dr. Sada, Terri Knight, Public Administrative Hearing October 2, 1991, Transcript Vol. VII, pgs. 11 to 87 and Vol. VIII pgs. 114 to 132.

²⁷ Exhibit 10, Public Administrative Hearing.

Many of the witnesses and their computer models agreed that even if a hydrologic barrier did not exist²⁸ between the pumping well and Devil's Hole and Ash Meadows, the drawdown after extended periods of pumping would be minimal.²⁹

XXIII.

The applicant provided testimony that it is in the public interest of the citizens of the United States to find a site suitable to store the Nation's high level nuclear waste.³⁰ The Congress and President of the United States agreed by the passage of the Nuclear Waste Policy Act as amended.³¹ The objective of site characterization studies is to determine if Yucca Mountain can isolate radioactive materials by using natural and engineered barriers.³² Applicant's testimony further identified benefits to Nevada by creating jobs, research facilities at the University system and payments equal to taxes. Scientific studies to be conducted at Yucca Mountain include the areas of hydrology, age dating, climatology, modeling, dry drilling techniques and tunneling techniques. The State Engineer finds that it is indeed in the public interest of the citizens of the United States to find a site to store the Nation's high level nuclear waste, however, it may not be in the public interest of U.S. Citizens to have Nevada singled out as the only site being studied. The State Engineer further finds that it is in the public interest to understand, using the best science and technology known to man,

28 The overwhelming evidence is to the contrary and that a barrier exists in the form of a clastic aquitard between the water bearing tuffs and the carbonate rocks.

29 Testimony of James Harrill, Richard J. Lacamera and Dr. Czarnecki, Public Administrative Hearing, Transcript Vol. V and VIII.

30 Testimony of Wendy Dixon, Department of Energy, Project Director, Transcript of Public Administrative Hearing Vol. I, pg. 79.

31 42 U.S.C. § 10133(a).

32 Exhibit 8, Public Administrative Hearing.

the consequences of this storage being at Yucca Mountain or any other site. The State Engineer finds that it may not be in the public interest of the citizens of the State of Nevada to 1) have the decision based on ignorance or political reasons rather than scientific grounds, 2) continue with site characterization on only one site in the country, thus creating huge economic incentives pushing for approval of Yucca Mountain as suitable for nuclear waste storage 3) have the State of Nevada be the ultimate guardian of a potentially very dangerous substance. For these reasons this application is being considered for a specific time period, for a specific amount of water, and only for the purpose of conducting the scientific experiments necessary to characterize the site.³³

XXIV.

The intervenor appended seven (7) documents to its initial brief³⁴ dealing with isotope analysis, geochemical models, radio carbon studies as well as a compilation of water rights permits and data on spring and well measurements. This caused the applicant to append a copy of a paper entitled "Principles of Isotope Geology"³⁵ to his reply brief. The intervenor then filed a Motion to File a Supplemental Brief along with the Supplemental Reply Brief on December 16, 1991, and the applicant filed an Opposition to Motion to File a Supplemental Reply Brief on December 23, 1991.

The State Engineer finds that the hearing was closed by Order #1051,¹ by stipulation of the parties. However, the record was left open only for the purpose of receiving pumping records for wells of the Nevada Test Site.

³³ NRS 533.371 allows the State Engineer to grant a permit for a specified time period if the use is temporary.

³⁴ See Intervenor's Opening Brief received November 12, 1991, attachment after page 98.

³⁵ See Appendix A to Applicant's Reply Brief.

CONCLUSION

I.

The State Engineer concludes that the appendices to the Intervenor's Opening Brief and the Applicant's Reply Brief are not an interpretation of the evidence and testimony in this record, rather it is an attempt to supplement the record with additional evidence without the benefit of foundation or cross examination. The State Engineer finds no substantive information on the Appendices that would result in any different conclusion or ruling in this matter. Further, the Motion to File a Supplemental Brief is hereby denied on the grounds that the briefing schedule was set and the record of evidence closed by stipulation of the parties and order of the State Engineer.

II.

The State Engineer has jurisdiction of the parties and the subject matter of this action.³⁶

III.

The State Engineer shall approve an application submitted in proper form which contemplates the application of water to beneficial use when:

- A. There is unappropriated water at the proposed source, and
- B. The proposed use does not conflict with existing rights, and
- C. The proposed use does not threaten to prove detrimental to the public interest.³⁷

IV.

The State Engineer concludes that the applicant has demonstrated a need for the use of the water applied for under Application 52338, and the proposed manner of use is a beneficial use.

³⁶ NRS 533.025 and NRS 533.030 (1).

³⁷ NRS Chapter 533.370 (3).

V.

The record of the State Engineer's Office and the testimony and evidence from the Public Administrative hearing reflect that there is unappropriated water at the source when the supply is considered from an individual system know as Forty Mile Canyon - Jackass Flat Groundwater Basin. There is also unappropriated water at the source when the supply is considered as a regional system known as the Alkali Flat - Furnace Creek Ranch Subbasin so long as the application is issued for a finite period of time.

VI.

There has been no discernible decline in groundwater levels due to previous pumping from the existing well on which Application 52388 seeks to appropriate additional water. The new appropriation is for a minimal percentage of the existing pumping occurring within the region.

VII.

The State Engineer concludes that the monitoring plan, on which the National Park Service seeks to withdraw its protest, is sufficient to protect all adjacent water related resources, including those of the National Park Service. Therefore, the National Park Service protest is hereby withdrawn.

VIII.

The record of evidence is substantially documented with highly technical testimony and evidence produced by both the applicant and intervenor. The witnesses included highly educated and experienced scientists in the field of geology, hydrology, hydrogeology, geochemistry, isotope tracing and computer modeling. There was undisputed testimony that the hydrology and geology surrounding Yucca Mountain is complicated and subject to much scientific testing and interpretation. It was also undisputed that the underground water in and around the Jackass Flat Hydrologic Basin is present in two distinctive flow systems and in two different layers; one in which this existing well (J-13) is completed, being the Topopah Spring member of the

Paint Brush Tuff (volcanic); and the second, a much deeper and older flow system in the carbonate rocks. Each of the scientists' hypothesis, investigation and conclusions taken separately might be subject to some skepticism and interpretation. However, in this instant issue, the State Engineer concludes that each of the scientists' investigations, be they geohydrology, geochemical, isotopic tracing or modeling, confirmed the thesis of present and prior investigators. Taken as a whole, the State Engineer finds that the overwhelming weight of the evidence leads to the conclusion that the additional pumping of 0.2 cfs and 94.83 acre-feet, will not interfere with existing water rights.

The State Engineer further concludes that in spite of the highly scientific evidence and testimony, it is all based on analytical formulas in which are inserted assumed values. The verification will come by pumping the additional water from well J-13. The well has produced water for use at Nevada Test Site for over 20 years with a maximum discharge of 585 acre-feet in 1967.³⁸ Monitoring of water levels has occurred in wells in the vicinity since 1981, showing only localized effects and no effects on spring flows or water levels in adjacent valleys. The proposed monitoring plan includes measuring at least 34 water levels and 5 spring flows in all directions from the subject well. Given these conditions, the State Engineer concludes that the application should be approved subject to monitoring and further discovery.

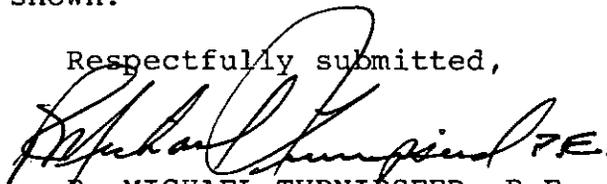
³⁸ Exhibit 60, Public Administrative Hearing.

RULING

The protest by the National Park Service to Application 52338 is hereby withdrawn and Intervenor's protest is hereby overruled. Application 52338 is hereby approved subject to:

1. Prior rights.
2. Payment of statutory fees.
3. Monitoring under the approved monitoring plan.
4. Further regulation and decrease in pumping if monitoring shows unmitigatable impacts on existing rights.
5. Expiration ten years from the date of this ruling but subject to reinstatement and extension of the permit for good cause shown.

Respectfully submitted,


R. MICHAEL TURNIPSEED, P.E.
State Engineer

RMT/TT/pm

Dated this 2nd day of
March, 1992.