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

IN THE MATTER OF APPLICATION NUMBER 64222
FILED BY NEVADA POWER COMPANY
OF LAS VEGAS, STATE OF NEVADA **PROTEST**
ON JUNE 12, 1998 TO APPROPRIATE
THE WATERS OF UNDERGROUND

Comes now Charles W. Pettee, on behalf of the United States Department of the Interior, National Park Service, whose post office address is 1201 Oak Ridge Drive, Suite 250, Fort Collins, Colorado, 80525, whose occupation is Chief, Water Rights Branch, Water Resources Division, National Park Service, and protests the granting of Application Number 64222 filed on June 12, 1998, by Nevada Power Company of Las Vegas, State of Nevada, to appropriate the waters of underground, situated in Clark County, State of Nevada, for the following reasons and on the following grounds, to wit:

See Exhibit A attached.

THEREFORE the protestant requests that the application be denied. The National Park Service will reconsider its protest if it can be shown that the proposed appropriation, in combination with existing and pending appropriations, if approved and developed, will not affect the water resources and water rights of Lake Mead National Recreation Area.

Signed Charles W. Pettee
Agent or protestant

Charles W. Pettee
Printed or typed name, if agent

Address 1201 Oak Ridge Drive, Suite 250
Street No. or P.O. Box No.

Fort Collins, CO 80525
City, State and Zip Code No.

Subscribed and sworn to before me this 22nd day of October, 1998.

Flora B. Romero
Notary Public

State of Colorado

County of Larimer

My Commission expires Flora B. Romero, Notary Public
State of Colorado
My Commission Expires 7/30/2002

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IN THE MATTER OF APPLICATION 64222
EXHIBIT A

Protest by Charles W. Pettee on behalf of
the United States Department of the Interior,
National Park Service

GENERAL

I. The mission of the National Park Service (NPS) may be paraphrased from 16 U.S.C. 1, as conserving scenery, natural and historic objects, and wildlife, and providing for enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations.

II. Since 1936, the National Park Service has managed the recreational activities within the Boulder Canyon Project area now known as Lake Mead NRA. Lake Mead NRA was established on October 8, 1964 (78 Stat. 1039) to be administered for "...general purposes of public recreation, benefit, and use, and in a manner that will preserve, develop, and enhance, so far as practicable, the recreation potential, and in a manner that will preserve the scenic, historic, scientific, and other important features of the area.... The Secretary shall permit hunting, fishing, and trapping on the lands and waters under his jurisdiction within the recreation area."

III. The NPS is entitled to Federal reserved water rights for reserved lands within Lake Mead NRA. The priority dates for these reserved rights are the dates when the lands were reserved and are senior to the appropriation sought by Nevada Power Company. These rights have not been judicially quantified.

IV. The Muddy River, which originates from large discharge springs located northwest of Moapa, Nevada, flows into Lake Mead NRA at the north end of the lake's Overton Arm. The State of Nevada, Department of Wildlife, is leasing part of Lake Mead NRA adjoining the Muddy River for the purposes of the Overton Wildlife Management Area. This area supports a variety of waterfowl and vegetation. The United States has a State appropriative water right to water in the Muddy River, Certificate No. 5126. The point of diversion is located in the NW¼ SE ¼, Sec. 19, T. 16 S., R. 68 E., M.D.B.M.

V. Springs and water-related resource attributes are important features of Lake Mead NRA. The springs provide water for vegetation and wildlife habitat and create an environment that many visitors use and enjoy. Most springs are not fed by water from Lake Mead and could be affected by upgradient diversions.

Springs include Blue Point, Rogers, Corral, and Kelsey's Springs, and other smaller, unnamed springs. Visitation to Blue Point and Rogers Springs has been estimated at 5,000 visitors per year. Desert bighorn sheep are also dependent upon the springs in Lake Mead NRA. A herd of approximately 150 use springs in the northern part of the National

Recreation Area. The relict Las Vegas Valley leopard frog, *Rana onca*, has been found at Rogers, Corral, and Blue Point Springs. Current taxonomic studies indicate a high potential for listing of this relict population, previously believed extinct, as protected under the Endangered Species Act.

The United States has State appropriative water rights to two springs near the mouth of the Muddy River, which could be impaired by the appropriation and diversion proposed by this application: Kelsey's Springs, located in the SW¼ NW¼, Sec 20, T.16 S., R.68 E., M.D.B.M., Certificate No. 296; and Rogers Spring, located in SE¼ SE ¼, Sec. 12, T.18 S., R.67 E., M.D.B.M., Certificate No. 4476.

VI. Nevada Power Company filed Applications Nos. 64222 and 64223. Each application is for withdrawal of 1.11 cubic feet per second (cfs) of ground water from the carbonate aquifer. The total annual duty applied for is 1,614 acre-feet per year (afy).

VII. The NPS reserves the right to amend this exhibit as more information becomes available.

FINDINGS

I. The proposed appropriation is located in Garnet Valley. Rush (1968) estimated that 400 afy of water recharges the valley from local mountain ranges and that an additional 400 afy enters the valley as subsurface inflow from Hidden Valley. Committed ground-water resources in Garnet Valley are 930 afy (State of Nevada, 1992) which exceeds recharge. Proposed appropriations, including that of Applications Nos. 64222 and 64223 and those of applications senior to Applications Nos. 64222 and 64223 are 27,090 afy, which greatly exceeds recharge. Ground-water withdrawals larger than the recharge rate to Garnet Valley would come from storage and constitute ground-water mining.

Discharge from Garnet Valley (about 800 acre-feet per year) is by subsurface outflow to California Wash to the east and from California Wash to the Muddy River (Rush, 1968).[1]

II. Rights to water in the Muddy River were decreed by the Tenth Judicial Court of the State of Nevada in the case entitled *Muddy Valley Irrigation Company vs. Moapa and Salt*

[1] See Burbey (1997) for further detail regarding the geology and hydrology of Hidden and Garnet valleys and Prudic and others (1995) for a description of the regional ground-water flow system.

Lake Produce Company. According to the January 21, 1920, Order of Determination and the March 11, 1920, Further and Supplemental Order of Determination of the Nevada State Engineer, there is no water available for appropriation in the Muddy River, its headwaters, sources of supply, and tributaries (Muddy Valley Irrigation Company, 1938).

III. A small amount of subsurface inflow from adjacent Coyote Spring Valley to the north may also enter the Hidden and Garnet valleys area (Burbey, 1997). The main body of ground water in Coyote Spring Valley discharges through the Muddy River springs and constitutes most of the base flow of the Muddy River (see Eakin, 1964; and Burbey, 1997).

IV. In Ruling 4542, the Nevada State Engineer found that there is ground water available for appropriation from the carbonate-rock aquifer in Coyote Spring Valley and that this aquifer is tributary to the Muddy River. The ruling noted that the estimated ground-water discharge in the Muddy River Springs Area ranges from about 51,000 to 63,900 afy.

V. The rate of ground-water underflow from Coyote Spring Valley to Muddy River Springs Area may be as large as 51,000 afy. Burbey (1997) states that underflow from Lower Meadow Valley Wash may also support spring discharge in the Muddy River Springs Area. The recharge rate of Meadow Valley Wash is 12,400 afy, mostly originating as underflow. An additional 7,000 afy of ground-water may be discharged in the Muddy River area from Lower Meadow Valley Wash (see Exhibit 13 submitted by the National Park Service in the matter of the hearing regarding Applications Nos. 55450 and 58269 filed by the Moapa Valley Water District; numbers based on Rush, 1964).

VI. Ground water from the aquifers in Hidden Valley, Garnet Valley, California Wash and the Muddy River Springs Area is also tributary to the Muddy River (Rush, 1968; Prudic and others, 1995).

VII. The application by itself, if approved and developed, could reduce the discharge of the Muddy River by 807 afy and thus impair existing water rights to the Muddy River, including that of the National Park Service, because it would capture water tributary to the Muddy River.

VIII. The following table summarizes water rights and hydrologic information for six valleys that are tributary to the Muddy River, and also for the Black Mountains Area. Column 1 shows committed ground-water resources for these basins. Column 2 shows the proposed appropriations of applications filed prior to Applications Nos. 64222 and 64223. The

amount of water requested in Applications Nos. 64222 and 64223 by Nevada Power Company is shown in the Column 3. Column 4 shows the amount of water appropriated and proposed for appropriation, including Applications Nos. 64222 and 64223. Column 5 shows recharge. Column 6 shows recharge less total committed and proposed appropriations.

Hydrographic Area	*1 Committed Ground-water Resources (afy)*[2]	*2 Proposed Appropriations Senior to Nevada Power Company Applications 64222 and 64223 (afy)*[2]	*3 Proposed Appropriations by Nevada Power Company Applications 64222 and 64223 (afy)*[2]	*4 Total Committed and Proposed Appropriations (afy)*	*5 Recharge (afy)*[3]	*6 Recharge Less Total Committed and Proposed Appropriations (afy)*
Coyote Spring Valley	16,100	121,285	0	137,385	51,000[4]	-86,385
Hidden Valley	0	17,306	0	17,306	400	-16,906
Garnet Valley	930	24,546	1,614	27,090	400	-26,690
California Wash	500	9,740	0	10,240	100	-10,140
Lower Meadow Valley Wash	29,680	13,032	0	42,712	12,400[5]	-30,312
Black Mountains Area	6,200	7,240	0	13,440	1,300[6]	-12,140
Muddy River Springs Area	8,328	0	0	8,328	100	-8,228
TOTAL	61,738	193,149	1,614	256,501	65,700	-190,801

[2] Sources: State of Nevada, 1992; Nevada State Engineer records

[3] Recharge from local precipitation and from underflow originating outside of the system comprised of the seven valleys tabulated. Sources: Harrill and others, 1988; Burbey, 1997; Rush, 1964

[4] Includes 35,000 afy underflow from upgradient basins

[5] Includes underflow from upgradient basins

[6] Includes 1,200 afy underflow from Las Vegas Valley

IN THE MATTER OF APPLICATION 64222
EXHIBIT A - CONTINUED

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IX. For all valleys, total committed and proposed ground-water appropriations (Column 4) greatly exceed recharge. The difference between these two columns (recharge less total committed and proposed appropriations) is shown in Column 6. For all valleys a large deficit occurs. Total committed and proposed appropriations for all tabulated valleys combined are 256,501 afy. This exceeds total combined recharge (65,700 afy) by 190,801 afy. There is no water available for appropriation. Ground-water withdrawals larger than the recharge rate to these valleys would come from storage and constitute ground-water mining.

X. The above table does not include Muddy River water rights, which according to the Muddy River Decree, appropriates all water in the Muddy River, its headwaters, sources of supply, and tributaries.

XI. The ground-water withdrawal proposed by this application, if approved and developed, in combination with existing permits and pending applications will capture ground water that naturally discharges into the Muddy River and thus greatly reduce the discharge of the river, injuring existing water rights.

XII. Lake Mead NRA springs, located within the Black Mountains Area, are discharge points for regional ground-water flow systems and may be affected by the proposed appropriation. The water issuing from the springs probably originates in the easternmost part of Lower Meadow Valley Wash and the Virgin River Valley (Pohlmann and others, 1998). However, the National Park Service is concerned that the proposed ground-water withdrawals (shown in the above table) if developed, as well as existing ground-water uses in the Muddy River area, will reduce or eliminate the discharge of the springs within Lake Mead NRA by capturing water destined to the springs, given that pumping occurs over a long period of time.

XIII. In Ruling No. 4548, the State Engineer concluded "...that it is not in the public interest to approve applications for use on lands where the applicant does not control both the proposed well locations and the proposed places of use." The proposed point of diversion and place of use of the application appear to be located on land controlled by the Bureau of Land Management (see surface-management map of the State of Nevada prepared by the Bureau of Land Management, 1990).

XIV. The water and water-related resources of Lake Mead NRA are locally and nationally important.

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EXHIBIT A - CONTINUED

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CONCLUSIONS

I. There is no water available for appropriation because committed water resources exceed ground-water recharge.

II. The approval and development of the appropriation proposed by this application will impair the water rights of the United States, because:

A. The proposed appropriation will reduce the discharge of the Muddy River. The United States' senior water right and other existing rights to the Muddy River would be injured, if the appropriation is approved and developed.

B. The proposed appropriation, in combination with existing appropriations and pending applications in the Muddy River area, if approved and developed, could reduce the discharge of Lake Mead NRA springs, because of the large potential withdrawal rate. The drawdown caused by such large withdrawals would extend to capture ground water that naturally discharges through the springs.

C. The effects of the appropriation proposed by this application, when combined with other existing and proposed appropriations, could impair the senior water rights of Lake Mead NRA more quickly and/or to a degree greater than the withdrawal proposed under this application alone.

III. The public interest would not be served by granting this application, because:

A. The water and water-related resources in the nationally important Lake Mead NRA would be diminished or impaired, as a result of the appropriation proposed by this application.

B. The application is for using water on lands where the applicant does not appear to control both the proposed well location and the proposed place of use.

IN THE MATTER OF APPLICATION 64222
EXHIBIT A - CONTINUED

Protest by Charles W. Pettee on behalf of
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