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

RECEIVED
2010 APR 13 PM 1:52
STATE ENGINEERS OFFICE

IN THE MATTER OF APPLICATION NUMBER 79376
FILED BY Virgin Valley Water District
ON February 1, 2010
TO APPROPRIATE WATER

PROTEST

Comes now Charles 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 79376, filed on February 1, 2010, by Virgin Valley Water District to appropriate water, 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.

Signed: _____
Agent or protestant

Charles W. Pettee
Printed or typed name, if agent

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

Fort Collins, CO 80525
City, State and Zip Code

FLORA B. ROMERO NOTARY PUBLIC STATE OF COLORADO

Subscribed and sworn to before me this 8th day of April, 2010.

Flora B. Romero
Notary Public

State of Colorado
County of Larimer

Flora B. Romero, Notary Public
State of Colorado
My Commission Expires 7/31/2010

My Commission expires _____.

IN THE MATTER OF APPLICATION 79376
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 National Recreation Area (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 water-related resource attributes and recreational activities associated with springs and the Virgin River are important features of the Lake Mead NRA. 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 the applicant. These rights have not been judicially quantified.

IV. Numerous springs in Lake Mead NRA provide water for vegetation and wildlife habitat and create an environment that many visitors use and enjoy. Many springs are fed by groundwater from the regional carbonate-rock aquifer and could be affected by upgradient groundwater diversions.

Springs include Rogers, Blue Point, Corral, and Kelsey's springs, and other smaller, unnamed springs. Visitation to Rogers and Blue Point 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 park.

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.

V. The Virgin River flows into Lake Mead NRA at the north end of the Overton Arm of Lake Mead. The State of Nevada, Department of Wildlife, is leasing part of Lake Mead NRA adjoining the Virgin River for the purposes of the Overton Wildlife Management Area. Flow of the Virgin River also provides nutrients important for sustaining a recreational fishery in Lake Mead NRA.

VI. Lake Mead NRA has State appropriative water rights for the following springs, which could be impaired by the appropriation and diversion of groundwater proposed by this application and 44 associated applications, in combination with existing groundwater appropriations:

Name of spring	Point of diversion	Certificate number
Kelsey's	SW¼ NW¼ , Sec 20, T16S, R68E MDBM	296
Rogers	SE¼ SE¼, Sec. 12, T18S, R67E MDBM	4476

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

FINDINGS

I. The Virgin Valley Water District (VVWD) proposes to withdraw groundwater at an instantaneous rate of 6 cubic feet per second (cfs) for municipal and quasi-municipal purposes in the Virgin River Valley under Application No. 79376. In total, VVWD filed forty five (45) applications (Nos. 79373, 79376 through 79410 and Nos. 79414 through 79422) to withdraw groundwater for municipal and quasi-municipal purposes in the Virgin River Valley. Depending on the particular application, these associated applications propose to withdraw 1, 2, 5, 6, 10 or 20 cfs. The total diversion rate sought for all 45 applications is 310 cfs or about 224,580 acre-feet per year (afy) if pumping is continuous.

II. The proposed appropriation is within the Virgin River Valley (Hydrographic Area 222).

Initial estimates of the groundwater recharge rate of the Virgin River Valley by Glancy and Van Denburgh (1969) vary from 3,600 to 6,700 afy (the higher estimate includes subsurface inflow), and later estimates by the Las Vegas Valley Water District (LVVWD) and The MARK Group (1992) vary from 8,400 to 11,600 afy. The perennial yield of groundwater of the Virgin River Valley is recognized by the Nevada State Engineer (NSE) to be 3,600 afy (Nevada Department of Conservation and Natural Resources, 2010), which is consistent with the perennial yield estimate originally proposed in Reconnaissance Report No. 51 (Glancy and Van Denburgh, 1969).

III. The NPS estimates the current committed groundwater resources in the Virgin River Valley to be about 12,812 afy (Nevada Department of Conservation and Natural Resources, 2010). The committed groundwater resources already exceed the perennial yield by 9,212 afy. As a result, the Virgin River Valley is over-appropriated and there is no additional groundwater available for appropriation.

IV. Applications 79373, 79376 through 79410, and 79414 through 79422 request a combined withdrawal rate of 310 cfs, or as much as 224,580 afy, if pumping is continuous. If these applications are approved and developed, the total withdrawal would substantially increase the amount of groundwater already over-appropriated from the Virgin River Valley. The withdrawals proposed by these applications are not sustainable and would exacerbate groundwater mining that is already occurring in the Virgin River Valley.

V. The aquifers underlying the Virgin River Valley are part of a regional groundwater flow system that discharges a portion of its water through carbonate rocks from several warm springs in Lake Mead NRA, including Rogers, Bluepoint, Corral, and Kelsey's Springs (see Prudic and others, 1995; and Pohlmann and others, 1998). These springs, located in the Overton Arm area of Lake Mead NRA, discharge at or near the contact of local carbonate rocks and basin fill sediments. If this application and VVWD's associated 44 applications are approved and developed, the groundwater that would be withdrawn by VVWD, in combination with withdrawals associated with existing appropriations, could affect the discharge of the subject springs in Lake Mead NRA, if pumping is large enough and occurs over a long period of time.

VI. The movement of groundwater adjacent to the Virgin River is controlled by hydraulic gradients that respond to changes in river stage (Glancy and Van Denburgh, 1969). LVVWD and The MARK Group (1992) concluded that groundwater and surface water of the Virgin River Valley in Nevada should be considered as one hydrologic system. The

recognized system yield of the Virgin River Valley is 100,000 afy (Nevada Department of Conservation and Natural Resources, 2010), where the system yield represents both groundwater and surface water.

VII. Existing committed surface-water resources in the Virgin Valley hydrographic basin, including vested, certificated, and permitted rights, are estimated to total 217,496 afy. Additionally, existing committed groundwater resources in the Virgin River Valley are estimated to total 12,812 afy (Nevada Department of Conservation and Natural Resources, 2010).

VIII. Therefore, for the Virgin River Valley system, committed surface water and groundwater resources far exceed the system yield. Thus, there is no water, underground or surface, available for appropriation in the Virgin Valley system.

IX. The appropriation proposed by the subject application, if approved and developed, in combination with VVWD's 44 associated applications, existing groundwater appropriations, and existing surface-water appropriations on the Virgin River, could reduce the discharge of the Virgin River. The reduction would disrupt the loading of nutrients important for sustaining a recreational fishery in Lake Mead NRA and diminish the wildlife habitat and popular wildfowl hunting area within Lake Mead NRA.

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

CONCLUSIONS

The NPS protests the granting of Application Number 79376 submitted by VVWD to appropriate and divert the waters of underground sources, on the following grounds.

I. There is no groundwater available for appropriation because: (a) committed groundwater resources exceed the basin's groundwater recharge rate and perennial yield; and (b) committed surface water and groundwater resources combined exceed the basin's system yield.

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

IN THE MATTER OF APPLICATION 79376
EXHIBIT A (Continued)

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

A. The appropriations and withdrawals proposed by VVWD (Applications 79373, 79376 through 79410, and 79414 through 79422), in combination with existing appropriations and proposed groundwater appropriations by LVVWD and others in the regional groundwater flow system, if approved and developed, could reduce the discharge of warm springs within Lake Mead NRA, if pumping continues long enough at the large rates proposed. The drawdown caused by such large withdrawals would extend to capture or re-direct groundwater that naturally discharges from the springs.

B. The appropriations and withdrawals proposed by VVWD, in combination with existing groundwater and surface water appropriations and proposed surface water appropriations by LVVWD, will eventually reduce the flow of the Virgin River.

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

IN THE MATTER OF APPLICATION 79376
EXHIBIT A (Continued)

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

LITERATURE CITED

Brothers, K., Katzer, T., Mojib, R.M., Grinnell, G., Bernholz, A., and Johnson, M., 1993, Addendum to hydrology and interactive computer modeling of ground and surface water in the lower Virgin River valley, primarily in Clark County, Nevada: Las Vegas Valley Water District, Cooperative Water Project, Water for Nevada's Future, Report No. 1a, Hydrographic Basin 222, 90 p.

Glancy, P.A., and Van Denburgh, A.S., 1969, Water-resources appraisal of the lower Virgin River valley area, Nevada, Arizona, and Utah: Nevada Department of Conservation and Natural Resources, Division of Water Resources, Water Resources – Reconnaissance Series Report 51, 87 p.

Las Vegas Valley Water District and The MARK Group, Engineers & Geologists, Inc., 1992, Hydrology and interactive computer modeling of ground and surface-water in the lower Virgin River valley, primarily in Clark County, Nevada: Las Vegas Valley Water District, Cooperative Water Project, Water for Nevada's Future, Report No. 1, Hydrographic Basin 222, 90 p.

Nevada Department of Conservation and Natural Resources, 2010, Hydrographic Area Summary, Hydrographic Area 222, Division of Water Planning, Carson City Nevada.

Pohlmann, K.F., Campagna, D.J., Chapman, J.B., and Earman, S., 1998, Investigation of the origins of springs in the Lake Mead National Recreation Area: Written report prepared for the National Park Service, Desert Research Institute, Water Resources Center, Las Vegas, Nevada, 51 p., plus 3 appendices.

Prudic, D.E., Harrill, J.R., and Burbey, T.J., 1995, Conceptual evaluation of regional ground-water flow in the carbonate-rock province of the Great Basin, Nevada, Utah, and adjacent states: U.S. Geological Survey Professional Paper 1409-D, pg. D1-D102.