FILED
JUN 18 1999
STATE ENGINEER'S OFFICE

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

IN THE MATTER OF APPLICATION NUMBER 64675
FILED BY LINCOLN COUNTY AND VIDLER WATER COMPANY, INC.
OF PIOCHE, STATE OF NEVADA **PROTEST**
ON DECEMBER 11, 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 64675 filed on December 11, 1998, by Lincoln County and Vidler Water Company, Inc. of Pioche, State of Nevada, to appropriate the waters of underground, situated in Lincoln 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 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 17th day of June, 1999.

_____
Notary Public

State of Colorado

County of Larimer

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

My Commission expires ~~My Commission Expires 7~~/30/2002

IN THE MATTER OF APPLICATION 64675
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 the 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. Death Valley National Monument, created by Congressional Act in 1933 and changed to a National Park in 1994, was established to preserve unusual features of scenic, scientific and educational interest.

III. Death Valley National Park (NP) is entitled to Federal reserved water rights for reserved lands within the National Park. The priority dates for these reserved rights are the dates when the lands were reserved and are senior to the appropriation sought by this application. These rights have not been judicially quantified.

IV. Water resources at Death Valley include over 350 springs which provide water for park facilities, domestic use, public campgrounds, resorts, vegetation, wildlife, public enjoyment, scenic values, and other related needs. Nevares, Texas, and Travertine Springs collectively discharge about 2,000 gallons per minute (approximately 3,200 acre-feet per year) and are critical for domestic and commercial use.

These springs support vegetation and critical wildlife habitat within Death Valley NP. This includes two species of snails which are candidates for listing as threatened or endangered species, the Badwater snail (Assiminea infima), which is found at Travertine and Nevares Springs, and the Amargosa tryonia snail (Tyronia variegata), which is found at Saratoga Springs. Approximately 25 herds of Desert bighorn sheep frequent these springs, rarely straying more than two miles away.

V. A unique and endangered species of desert pupfish exists in a pool at Devils Hole, a detached unit of Death Valley NP within Nevada. Ground water withdrawals near the unit have previously caused a decline in the water level of the pool, exposing a rock shelf vital to the spawning of the pupfish (Dudley and Larson, 1976). Subsequently, the U.S. Supreme Court (later refined by the U.S. District Court) determined that a Federal reserved water exists at Devils Hole for the purpose of maintaining a water level sufficient to inundate the shelf on which the pupfish spawns (Cappaert v. United States, 1976).

VI. 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 (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."

VII. 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 Lincoln County and Vidler Water Company, Inc. (Applicant). These rights have not been judicially quantified.

VIII. 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.

IX. 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 Nevada State Appropriative water rights for Lake Mead National Recreation Area as follows:

Name	Point of Diversion	Certificate Number
Kelsey's Spring	SW¼, NW¼, Sec. 20, T16S, R68E, MDB&M	296
Rogers Spring	SE¼, SE¼, Sec. 12, T18S, R67E, MDB&M	4476
Muddy Creek (River)	NW¼, SE¼, Sec. 19, T16S, R68E, MDB&M	5126

X. In 1998, approximately 1,222,000 persons visited Death Valley NP and 9,107,000 persons visited Lake Mead National Recreation Area, contributing to the local economies.

XI. Lincoln County and Vidler Water Company, Inc. filed Application No. 64675 to withdraw 10.0 cubic feet per second (cfs) ground water in Tikapoo Valley (North) for irrigation. The applicant also filed Application Nos. 64668 through 64674 and 64676 through 64695 to withdraw a total of 280 cfs of ground water from 14 valleys (Dry Lake Valley, Cave Valley, Coal Valley, Tikapoo Valley North, Garden Valley, Delamar Valley, Lake Valley, Spring Valley, Hamlin Valley, Patterson Valley, Kane Springs Valley, Pahroc Valley, Tule Desert, and Virgin Valley). This application requests an annual duty of 7,240 acre-feet per year (afy). The total annual duty applied may be as much as 202,720 afy.

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

FINDINGS

I. The appropriation proposed by Application 646745 is located in the carbonate-rock province of Nevada. The carbonate-rock province is typified by complex interbasin regional flow systems that include both basin-fill and carbonate-rock aquifers (Harrill and others, 1988). Ground water flows along complex pathways through basin-fill aquifers, carbonate-rock aquifers, or both, from one basin to another. Ground-water flow system boundaries, and thus interbasin ground-water flows, are poorly defined for most of the carbonate-rock province (Harrill and others, 1988). (See Prudic and others, 1995, and Eakin (1966) for

descriptions of the White River ground-water system[1] and the regional ground-water flow systems of the Great Basin..)

II. The proposed appropriation is located in Tikapoo Valley (North) which is within the Ash Meadows ground-water flow system (Ruling 4177). Harrill and others (1988) estimates 6,000 afy of ground water discharges from North and South Tikapoo Valleys to the Ash Meadows ground-water flow system. Ground water discharge mostly occurs as subsurface flow (Burbey, 1997).

III. Ground water in the Ash Meadows flow system (with the exception of that discharged through evapotranspiration in Indian Springs Valley) is believed to flow generally towards Ash Meadows, where Devils Hole is located, to discharge at springs along the Ash Meadows fault line. The effectiveness of the fault line as a barrier to ground water flow is unknown. Appreciable leakage across the fault line may occur (Rush, 1970). Ground water may move as underflow across the Ash Meadows fault line to the southern part of the Pahute Mesa ground-water system (Ruling 4327).

IV. The Ash Meadows system and the Pahute Mesa system converge in the Amargosa Desert (Rush, 1970; Ruling Number 3870; and Ruling Number 4327). The two systems are separated by the Ash Meadows fault line (Rush, 1970; Ruling Number 4327). After an evaluation of the scientific literature including Rush (1970) (see Pal Consultants, 1995a), Pal Consultants (1995b) referred to the Ash Meadows and Pahute Mesa systems as part of one system, the central Death Valley Subregion.

V. Some water in the Ash Meadows and Pahute Mesa systems moves south and westward as underflow to Death Valley NP through the Funeral Range (Ruling Number 4327). Harrill and others (1988) estimated that about 3,000 to 19,000 acre-feet per year moves as underflow to Death Valley NP.

VI. Harrill and others (1988) estimated that about 3,000 to 19,000 acre-feet per year moves as underflow to Death Valley NP. The difference between recharge and discharge in the Pahute Mesa system is about 3,000 acre-feet per year, and in the Ash Meadows system it is about 16,000 acre-feet per year (Rush, 1970). For the two flow systems combined, the difference is estimated to be about 19,000 acre-feet per year (Rush, 1970) which can be accounted for in large part by discharge from springs and evapotranspiration in Death Valley playa, within Death Valley NP (Rush, 1970; Ruling No. 4327).

VII. The NPS has California appropriative water rights to spring flow at Furnace Creek and unquantified reserved rights for evapotranspiration at Death Valley playa and other water-related resources within Death Valley NP. To quantify the rate of evapotranspiration occurring in Death Valley, the NPS has contracted with the U.S. Geological Survey to conduct a multi-year study, which commenced in 1997.

VIII. Natural discharge in the Ash Meadows system occurs as spring discharge at Ash Meadows, underflow from the system in the Ash Meadows area (as discussed above), and evapotranspiration at Indian Springs Valley. Spring discharge at Ash Meadows is about 17,000 acre-feet per year (Rush, 1970). About 16,360 acre-feet per year are accounted for by the surface water rights of the U.S. Fish and Wildlife Service.

Evapotranspiration in Indian Springs valley is estimated to be around 500 to 700 acre-feet per year (Pal Consultants, 1995b). The State Engineer's ground-water pumpage inventory for Indian Springs Valley,

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[1] The system includes the following hydrographic areas or basins: Long Valley, Jakes Valley, White River Valley, Cave Valley, Garden Valley, Coal Valley, Pahroc Valley, Dry Lake Valley, Pahranagat Valley, Delamar Valley, Kane Springs Valley, Coyote Springs Valley, and Muddy River Springs Area (Upper Moapa Valley).

1996, shows a total of 634.3 acre-feet withdrawn. Appropriations in Indian Springs Valley are 1,626 acre-feet per year (State of Nevada, 1992). Thus, water use in Indian Springs Valley is about equal to or greater than ground-water discharge by evapotranspiration in the valley. There is negligible evaporation from Tikapoo Valley (North) and Three Lakes Valley (North) (Pal Consultants, 1995b),

There is water use on the Nevada Test Site, which was estimated to be 1,091 acre-feet in 1985 (U.S. DOE, 1985) and recently approved permits for the Nevada Department of Prisons, which allow withdrawals of 1,574.92 acre-feet per year in Three Lakes Valley (south) (Ruling No. 4177).

Committed water resources for the Ash Meadows system amount to about 19,560 acre-feet per year.

IX. Recharge for the Ash Meadows system is estimated to be about 33,000 acre-feet per year (Rush, 1970). About 16,000 acre-feet per year flows from the Ash Meadows system into the Pahute Mesa system and from the Pahute Mesa system to Death Valley. The recharge rate, less estimated committed water resources, is about 13,440 acre-feet per year. Thus, the underflow to the Pahute Mesa system and to Death Valley has been reduced by 2,560 acre-feet per year

X. Recharge to the Pahute Mesa System is 12,000 acre-feet per year (Rush, 1970). Ground-water withdrawals in 1995 were 15, 035 acre-feet (LaCamera and others, 1996). Existing water use exceeds recharge by 3,035 acre-feet per year, capturing the 3,000 acre-feet per year of underflow from the Pahute Mesa system to Death Valley. Furthermore, there is no water available for appropriation in the Pahute Mesa system because water use exceeds recharge.

XI. Devils Hole is located in the Ash Meadows system, near the boundary between the Ash Meadows and Pahute Mesa systems. In Ruling No. 4327, the State Engineer found that the pool elevation at Devils Hole may serve as a water-level indicator for the Ash Meadows ground-water flow subsystem. Data indicate that the pool level in Devils Hole has been declining since about 1988.

XII. The proposed appropriation will capture water that ultimately discharges at Ash Meadows (where Devils Hole is located) or Death Valley (within Death Valley NP).

XIII. Within the Ash Meadows system, the Las Vegas Valley Water District (LVVWD) has applications in Tikapoo Valley (3,000 acre-feet per year), Three Lakes Valley (north) (5,000 acre-feet per year) and Three Lakes Valley (south) (5,000 acre-feet per year). The effect of this appropriation, when combined with appropriations by LVVWD and the Nevada Department of Prisons in Three Lake Valley (south), will diminish the outflow from Three Lakes Valley (south) and impair the senior water rights, water resources, and water-related resource attributes of Death Valley NP.

XIV. A portion of flow ground water in Tikapoo Valley (North) flows south through Tikapoo Valley (South) and may flow into Coyote Spring Valley (Harrill and others, 1988). The aquifers under Coyote Spring Valley are part of a regional ground-water flow system known and the White River ground-water flow system as defined by Eakin (1966)[2], which discharges water through springs in the Muddy River area. The quantity of ground water recharge from Tikapoo Valley to Coyote Spring Valley is unknown.

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[2] The system includes the following hydrographic areas or basins: Long Valley, Jakes Valley, White River Valley, Cave Valley, Garden Valley, Coal Valley, Pahroc Valley, Dry Lake Valley, Pahranagat Valley, Delamar Valley, Kane Springs Valley, Coyote Springs Valley, and Muddy River Springs Area (Upper Moapa Valley).

IN THE MATTER OF APPLICATION 64675
EXHIBIT A - CONTINUED

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on behalf of the United States, Department of the Interior
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XV. Ground-water inflow to Coyote Spring Valley (another form of recharge) is about 35,000 afy and originates in basins upgradient from the valley (Harrill and others, 1988; Prudic and others, 1995). Discharge from the valley is primarily by subsurface outflow (about 37,000 afy) to the Muddy River Springs Area and the Muddy River (Burbey, 1997; Harrill and others, 1988; and Eakin, 1964). Thus, the Muddy River and the ground-water reservoir in Coyote Spring Valley are hydraulically connected, and this reservoir is tributary to the Muddy River.

XVI. The water emitted from springs in Pahranagat Valley was adjudicated by Court Decree issued October 14, 1929. The decree covered a total of 4,971.62 acres, with a duty of 1 cfs per 100 acres (36,000 afy) (Eakin, 1963). Spring discharge appears to be fully appropriated. Committed ground-water resources is 9,700 afy (Nevada Department of Conservation and Natural Resources, 1992). Spring and ground-water appropriations in Pahranagat Valley are 45,700 afy.

About 35,000 afy exits Pahranagat Valley as underflow to and moves as underflow beneath Coyote Spring Valley. Discharge from Coyote Spring Valley is primarily by subsurface outflow (about 37,000 afy) to the Muddy River Springs Area and the Muddy River (Burbey, 1997; Harrill and others, 1988; and Eakin, 1964). Committed water-resources in Pahranagat Valley (45,700 afy) does not exceed the recharge rate of Pahranagat Valley (59,800 afy). However, it does exceed the discharge rate of the springs and evapotranspiration in the valley (24,000 afy to 34,000 afy). Thus, the discharge of the springs and the underflow from Pahranagat Valley will decrease, given current levels of appropriation.

XVII. 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 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).

XVIII. 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. As much as 14,000 afy of this estimated range may originate in the Sheep Range in Coyote Spring Valley (Burbey, 1997). The rate of ground-water underflow from Coyote Spring Valley to Muddy River Springs Area may be as large as 51,000 afy. This may include 35,000 afy underflow from Pahranagat Valley, 2,000 afy recharge from precipitation in Coyote Spring Valley (Eakin, 1964), and 14,000 afy from the Sheep Range.

XIX. 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). Burbey (1997) states that underflow from Lower Meadow Valley Wash may support spring discharge in the Muddy River Springs area. The rate of ground-water underflow to the Muddy River area from Coyote Spring Valley and Lower Meadow Valley Wash combined may be as large as 58,000 afy.

XX. Ruling No. 4542 noted that existing water rights in the Muddy River Springs Area are about 45,260 afy (which probably includes some ground- water rights in California Wash.) About 10,005 afy are for ground-water sources and about 35,250 afy for surface-water rights under the Muddy River decree. (See transcripts for hearing regarding Applications Nos. 55450 and 58269 filed by the Moapa Valley Water District.)

Committed ground-water resources are 16,100 afy in Coyote Spring Valley. Total committed water resources in Coyote Spring Valley and Muddy River Springs Area totals 61,360 afy. Committed ground-water resources in Lower Meadow Valley Wash are 29,680 afy (Nevada Department of Conservation and Natural Resources, 1992). This figure does not include surface water sources. Committed water resources in Pahranagat Valley, Coyote Springs Valley, Muddy River Springs area, and Lower Meadow Valley Wash are at least 136,640 afy.

Because committed water resources for Pahranagat Valley, Coyote Spring Valley, and Lower Meadow Valley Wash (134,640 afy) exceed the recharge rate of 88,200 afy for the valleys, there is no water available for appropriation.

XXI. The Las Vegas Valley Water District (LVVWD) filed numerous applications (senior to Lincoln County and Vidler Water Company, Inc.,) to withdraw large quantities of ground-water from Coyote Spring Valley and from several basins upgradient to and tributary to the valley: 5,000 afy in Coyote Spring Valley; 2,000 afy in Cave Valley; 6,000 afy in Coal Valley; 3,000 afy in Delamar Valley; 10,000 afy in Garden Valley; and 5,000 afy in Pahroc Valley , totaling 31,000 afy (Schaefer and Harrill, 1995). These basins are tributary to the Muddy River (see Harrill and others, 1988).

Aerojet filed Applications Nos. 63272 through 63276 and 63867 through 63876; Blue Nugget Water Company filed Applications Nos. 63360 through 63372; Coyote Springs Investments, Inc. filed Applications Nos. 64186 through 64192; Dry Lake Water L.L.C. filed Applications Nos. 64037 through 64041 and 64045; to withdraw a total of 241,400 afy. The applications are in Coyote Spring Valley, Pahranagat Valley, California Wash, Hidden Valley, Garnet Valley, and Black Mountains Area. These basins are also tributary to the Muddy River.

The ground-water withdrawal proposed by this application and associated applications, if approved and developed, in combination with existing permits and pending applications (including those of LVVWD, Aerojet, Coyote Springs Investments, Inc., Dry Lake LLC, Blue Nugget Water Company, and others), will capture ground water that naturally discharges into the Muddy River and thus will reduce the discharge of the river, impairing existing water rights.

XXII. The springs within Lake Mead NRA are discharge points for regional ground-water flow systems and may be affected by the proposed appropriation. The water issuing from the springs is not derived from the Muddy River Springs Area or Coyote Spring Valley. This water originates in easternmost part of Lower Meadow Valley Wash and the Virgin River Valley (Pohlmann and others, 1998).

XXIII. Lake Mead NRA springs, located within the Black Mountains Areas, 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). Given that pumping occurs over a long period of time, the National Park Service is concerned that the ground-water withdrawals proposed by Lincoln County and Vidler Water Company, LVVWD, Blue Nugget Water Company, Aerojet, Coyote Springs Investments, Inc., Dry Lake L.L.C., and others, as well as existing ground-water uses in the White River ground-water flow system, if developed, will reduce or eliminate the discharge of the springs within Lake Mead NRA by capturing water destined for the springs.

XXIV. Ground-water withdrawal rates larger than the recharge rate of Tikapoo Valley (North) would come from storage and constitute ground water mining. LVVWD has three applications for ground water totaling 26 cfs in Tikapoo Valley North, which are senior to this application. LVVWD, and applications 64674 and 64675 by Lincoln County and Vidler Water Company, Inc. could withdraw up to 33,300 afy from Tikapoo

Valley North. The recharge rate for the valley is estimated as 2,600 afy (Burbey, 1997). This application along and in combination with other applications within Tikapoo Valley (North), if approved and developed, would mine ground water.

XXV. Application 64675 proposes to withdraw water from the NE¼ SE¼ Section 9, T7S, R58E, MDB&M and to use it within the E½ Section 9, Sections 10 and 15, T7S, R58E, MDB&M. This land is administered by the U.S. Bureau of Land Management and is not owned by the applicant. Ruling Number 4548, signed by the Nevada State Engineer on July 25, 1997, states that "...it would not be in the public interest to approve applications for use upon lands where the applicant does not control both the proposed well locations and the proposed places of use."

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 appropriations and withdrawals proposed by Lincoln County and Vidler Water Company (Applications 64668 through 64674 and 64676 through 64695) will further reduce the discharge of the White River and Ash Meadows ground water flow systems. The United States' senior water rights In Death Valley NP and Lake Mead NRA be impaired, if the appropriation is approved and developed.

B. The proposed appropriation, in combination with existing appropriations and pending applications, if approved and developed, could reduce the discharge of Death Valley NP and 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 Death Valley NP and 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 a permit to this application, because:

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

B. The land which the applicant proposes to withdraw the water and proposes to use the water is not owned by the applicant.