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SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES – CENTRAL DISTRICT

Coordination Proceeding Special Title (Rule 1550(b)) **ANTELOPE VALLEY GROUNDWATER CASES**	Judicial Council Coordination Proceeding No. 4408 **Santa Clara Case No. 1-05-CV-049053** Assigned to The Honorable Jack Komar, Dept. 17
Los Angeles County Waterworks District No. 40 v. Diamond Farming Co., Wm. Bolthouse Farms, Inc., v. City of Lancaster, Diamond Farming Co. v. City of Lancaster, Diamond Farming Company v. Palmdale Water District. And Related Cross-Actions	**OPPOSITION TO MOTION FOR APPOINTMENT OF BILL DENDY AS SETTLEMENT CONFERENCE REFEREE** **Hearing:** **Date: August 20, 2007** **Time: 9:00 a.m.** **Dept.: LASC Dept. 1**

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MEMORANDUM OF POINTS AND AUTHORITIES

I.
INTRODUCTION

The Antelope Valley East Kern Water Agency ("AVEK") opposes the motion by the County of Los Angeles ("County") for an appointment of a referee to conduct a mandatory settlement conference at the present time. AVEK opposes the motion on the following grounds:

1. A physical solution to competing water claims in the Antelope Valley Water Basin ("the Basin") is needed now;

2. Water supplies in the Basin are being overdrafted and the situation only gets worse with time;

3. Supplemental water supplies from outside of the basin are uncertain, unpredictable and may decrease in the interim;

4. The parties agreed to Mr. Dendy as a <u>mediator</u>;

5. Mr. Dendy has already taken initial steps in getting a large scale mediation process underway;

6. Appointment of Mr. Dendy as a referee will undermine the mediation process and set back the progress that has already been made;

7. Mr. Dendy's ability to fashion a physical solution which considers the respective water rights of all or even most of the parties will be seriously impaired in an MSC setting versus that of a mediation;

8. The appointment would necessitate undue expense and time for the parties and the court;

9. The appointment would make the present efficient mediation plan unworkable and would require the unnecessary attendance of attorneys and experts at MSC related hearings and require the filing of thousands of pages of unneeded legal documents.

II.
FACTUAL BACKGROUND

AVEK is a Cross-Complainant in this action which seeks a judicial determination of rights to groundwater within the Antelope Valley Groundwater Basin ("the Basin"). An adjudication is necessary to protect and conserve the limited water supply that is vital to the public health, safety, and welfare of all persons and entities that depend upon native water from the Basin and supplemental water from AVEK.

AVEK imports water to the Antelope Valley via a contract with the State Water Project (SWP) of the Department of Wildlife Resources (DWR). AVEK has an annual allocation of 141,000 acre feet of water per year (AFY). AVEK can, however, expect that at most it will receive on an average about 70% of its allotment from SWP, often less. SWP water augments the groundwater in the Basin and is used for irrigation, domestic, municipal, and industrial uses. The Basin is in a seriously overdrafted state. There has been no adjudication and there are no restrictions on groundwater pumping. Development in the Valley is proceeding at an an unprecedented rate. An equitable physical solution is the only means to get the situation under control. This is best accomplished by mediation.

The Court's attention is directed to the United States Geographical Service (USGS) report on land subsidence (abstract attached as Exhibit 1), and the Public Review Draft Report of the Integrated Regional Water Management Plan for the Antelope Valley (IRWM), available in full at avwaterplan.org. This Plan has been drafted with the participation of all public entities and active input of a variety of agricultural and industrial water users. The total annual demand on the Basin has exceeded the supply of water from natural sources since the 1920's. (USGS, 2003). Consequently, there is and has been a progressive and chronic decline in Basin water levels and the available natural supply is being and has been chronically depleted. Based on the present trends, demand on the Basin will continue to exceed supply. Estimates of recharge of the Basin from natural sources range from 30,300 to 80,400 AFY. The most recent USGS study in 2003 modified the estimate to the lowest number, 30,300 AFY. Return flows from agricultural and urban users supplement the natural supply. An exact amount of the current groundwater pumping is not known and is a subject of the technical committee's work. The USGS contends that the groundwater pumping averaged 81,700 between 1991 and 1995; the population of the Basin has increased approximately 50% during that time (300,000 to about 450,000). Growth estimates project a population of 600,000+ by 2015 and 1,000,000 by 2035. (See Table 2-3, IRWM, Exhibit 2).

Demand projections for the year 2010 range from 269,000 in an average year to 278,000 in a dry year. (IRWM, Table 3-9, Exhibit 3). The Basin lacks substantial water banking facilities. AVEK, Tejon Ranch and Western are all moving, at enormous public and private expense, to create water banking facilities. Demand projections, based on population growth estimates, increase to 320,000 AFY by 2020 and 400,000 AFY by 2035. (Exhibit 3). Overdrafting the Basin at the current rate, and increasing it in the future, will deplete the water supply, cause massive economic consequences and increase land subsidence. Subsidence leads to poor water quality, reduction in storage capacity, increased pumping costs and damage to infrastructure (among many other things) See IRWM page 3-55 and 3-58, Exhibit 4) .

Importation of SWP water is a dicey proposition at best. SWP water for the most part originates above the Oroville dam and flows to AVEK via the Feather River, Sacramento River and the Sacramento-San Joaquin Delta. The Delta, in particular, presents potential barriers to the importation of water. Environmental concerns and litigation over the Delta smelt recently caused a temporary closure of the Banks Pumping Plant. Further shutdowns are a possibility. DWR has not provided a firm estimate of the amount of SWP that will be available next year. Estimates range from 8% to 70% of AVEK's annual allotment. Environmental concerns are increasing. Limitations on public funding for needed improvements threaten the ability of SWP to deliver sufficient water. A peripheral canal, not yet approved, and facing serious opposition, would take an estimate of ten years to build.

No effort has been made by any entity to curtail growth in the Antelope Valley. No mandatory conservation measures are in place. Water is used for landscaping, washing cars, and so on.

III. <u>A PHYSICAL SOLUTION IS REQUIRED</u>

Safeguarding the public water supply in the Basin requires a physical solution now. Every year of overdraft threatens further depletion of the groundwater and land subsidence. There are no restrictions in place, either on private landowners or public entities. AVEK needs to store SWP water underground in the winter months when they receive a surplus, and secure additional water when available from whatever source to spread within the basin. If unabated pumping is allowed that water will be used up along with the groundwater. The community needs stable water supplies to satisfy needs for health, safety and future growth.

The equitable remedy of "physical solution" has a long and favorable history in California. *Peabody v. Vallejo, (1935) 2 Cal. 2d 351, City of Lodi v. East Bay Municipal Utility District, (1936) 7 Cal. 2d 316.* "The doctrine of physical solution is a practical way of carrying out the mandate of Article X, Section 2, that the water resources of the state be put to use 'to the fullest extent of which they are capable.'" (See *California Water*, A. Littleworth and E. Garner, Solano Press Books, 1995, p. 177) A physical solution can be imposed by the Court without consent of all the parties (see *Tulare Irrigation District v. Lindsey Strathmore Irrigation District, (1935) 3 Cal. 2d 489)*, but cannot disregard the various water rights of the parties (*City of Barstow v. Mojave Water Agency, (2000) 23 Cal. 4th 1224.* At the very essence physical solution is a cooperative process requiring compromise by all parties.

In the instant matter, the public entity pumpers, private pumpers and AVEK have all agreed to use Bill Dendy as a mediator. Mr. Dendy has a long history of mediating water disputes. He has proposed a "principals only" mediation process. He plans to meet with representatives of the parties, their technical staff and the technical committee. He will not require lengthy briefs, attendance of all parties at all hearings, and the presence of lawyers. The parties, including the County, endorsed this proposal. The County in fact even suggested it: see their Case Management Statement of April 16, 2007 (see Exhibit 5).

Now after barely three months the County reverses their position and asks for Mr. Dendy to be appointed as a referee. Such an appointment would make Mr. Dendy responsible to the Court and involve the Court in mediation talks already under way. Mr. Dendy would be an officer of the court; parties could insist on legal representation at all proceedings. Once any party wants their attorneys present other parties will have no choice but to follow suit. The efficient process that Mr.

Dendy is trying to outline will be rendered impotent. He would be required to submit lengthy reports to the court. The County offers <u>no reason</u> why this is necessary now or even at some point in the future. According to the County, "without mandatory settlement conferences, all parties may not participate in voluntary mediation." This is categorically false. The mediation process is open to one and all. All parties are encouraged to participate. No other reason is offered. Compensation for Mr. Dendy's services has already been agreed upon; it is only likely to become an issue again if his status changes. No doubt his time commitment (and fees) would be exponentially increased by formal notice and reporting requirements. Key issues to resolution have yet to be determined: the annual groundwater use and safe yield of the Basin are still under consideration by the technical committee. The County may argue that appointment of Mr. Dendy as a referee will give him some additional powers to force the parties along. That is anathema to the doctrine of physical solution. More importantly, the parties <u>are</u> engaging in the mediation process and it is too soon to tell how successful it will be. The desire of the parties to mediate, in a fashion proposed by Mr. Dendy, is paramount to the unstated agenda of the County for having him appointed as a referee.

It is undisputed that the court may appoint a referee. AVEK encourages the court to to take an active role in the litigation. This can be accomplished without the court involving itself directly in negotiations. In the event a referee is ultimately appointed it need not be Mr. Dendy, whom the parties have specifically chosen to mediate. The Court may not order the parties to mediate *(Jeld-Wen v. Superior Court (2007) 146 Cal. App. 4th 536)* but may certainly encourage and cajole. Nonetheless the County requested the court <u>order</u> the public and private pumpers to mediate their dispute. (See CMC Statement, Exhibit 5). AVEK was notably excepted from their request. Without AVEK's participation a physical solution is impossible. Adjudication of prescriptive versus overlying rights may resolve the short term issues between public and private pumpers. It will do nothing to stabilize the overall water supply situation in the Basin unless it takes the SWP issues into account.

IV.
CONCLUSION

AVEK respectfully requests that the court deny the motion and allow Mr. Dendy to continue in his role as a private mediator. If mediation does not prove successful, the Court has other remedies to resolve the overdraft.

Dated: August 6, 2007

BRUNICK, McELHANEY & BECKETT

By: ____________________
William J. Brunick
Attorneys for ANTELOPE VALLEY-EAST KERN WATER AGENCY

EXHIBIT "1"

USGS

Chapter from **Current Research and Case Studies of Land Subsidence: Proceedings of the Dr. Joseph F. Poland Symposium**, Association of Engineering Geologists Special Publication No. 8, Published by Star Publishing Company, Belmont, CA 94002-0068. For information on ordering contact *James Borchers*, coeditor.

Land Subsidence and its Relation to Past and Future Water Supplies in Antelope Valley, California

by *Devin L. Galloway*, *Steven P. Phillips*, *and Marti E. Ikehara*

U.S. Geological Survey, 6000 J Street, Sacramento, CA 95819

Abstract

Extensive ground-water pumpage for agriculture during the period 1952 to 1968 played a significant role in the development of more than 6 ft of land subsidence measured between 1926 and 1992 in Antelope Valley, California. Since the 1970's, the reduction of irrigated agriculture in this arid, high-desert valley has paralleled dramatic increases in population and urban land use. Concurrently, ground-water pumpage has declined sharply, to the lowest levels in decades. Although currently less than at any time since the 1940's, annual ground-water extraction still exceeds the estimated mean natural recharge to the valley by nearly two-fold. As a result, ground-water levels, historically depleted throughout the central part of the valley, continue to decline in urban and isolated agricultural areas where ground-water use is high. The population of Antelope Valley is projected to grow from 260,400 in 1990 to 690,000 by 2010, and water demand is expected to exceed projected supplies by the year 2004. Ground-water supplies have satisfied 50 to 90 percent of the annual water demand in Antelope Valley during the period of development, and will constitute a substantial component of the future water supply. If ground-water levels are maintained at approximately their historic low levels, the subsidence presently observed may be only a modest fraction (perhaps 35 to 65 percent) of that which will ultimately occur. Past agricultural and mounting municipal- industrial demand for ground-water leaves future residents of the valley a legacy of ongoing aquifer-system compaction, land subsidence and related problems, and the challenge to manage the resource within beneficial limits.

This document includes:

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Introduction

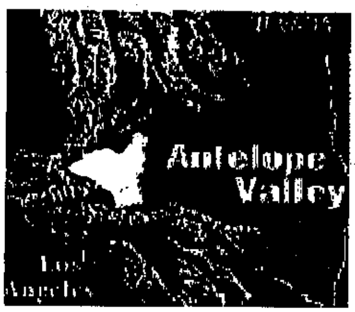


Fig. 1

Antelope Valley is an arid valley in the southwestern corner of the Mojave Desert, about 50 miles northeast of Los Angeles (Figure 1). The triangular-shaped valley is bounded on the south by the San Gabriel Mountains, on the northwest by the Tehachapi Mountains, and by lower hills, ridges, and buttes in the north and east. The valley is a topographically closed basin with surface-water runoff terminating in several playas. Average annual precipitation varies from 30 inches near the crests in the San Gabriel Mountains to 3 inches on the valley floor.

Antelope Valley overlies three large structural basins filled to depths of more than 5000 ft with Tertiary and Quaternary alluvial sediments eroded from the adjacent highlands. Water infiltrating the basin-fill sediments over the past million years or more has created a vast ground-water basin. The ground-water basin has been conceptually subdivided into 12 separate but variably connected, ground-water subbasins (Thayer, 1946), of which the Lancaster subbasin (Figure 1) is by far the largest and most developed. The Lancaster subbasin has been further subdivided into aquifer systems containing transmissive, water-bearing aquifers and relatively non-transmissive aquitards (Londquist and others (1993). The aquifer systems in the Lancaster subbasin contain two alluvial aquifers known locally as the principal aquifer and the deep aquifer. Both aquifer systems consist of interbedded layers of heterogeneous mixtures of clay, silt, sand, and gravel. The "principal aquifer" is partially confined by the interbedded, fine-grained sediments (aquitards) and is separated from the "deep aquifer" by laterally extensive, thick (>100 ft) lacustrine deposits that confine the "deep aquifer".

Mountain streams account for an estimated mean annual recharge between 31,300 and 59,100 acre-ft to the Antelope Valley ground-water basin (Steven P. Phillips, U. S. Geological Survey, written commun.). Before the development of irrigated agriculture in the early-to-mid 1900's, ground water flowed from recharge areas near the San Gabriel and Tehachapi Mountains toward meadows, marshes and springs (now dry) near the center of Antelope Valley where most of it discharged from the Lancaster subbasin via evapotranspiration. Figure 2 shows ground-water levels in the Lancaster subbasin representing the "principal aquifer" potentiometric surface in the year 1915, prior to significant ground-water development (Durbin, 1978). Since then, ground-water withdrawals far in excess of the estimated natural recharge have created problems of land subsidence caused by compaction of the aquifer- system that typically accompanies ground-water mining in alluvial basins.

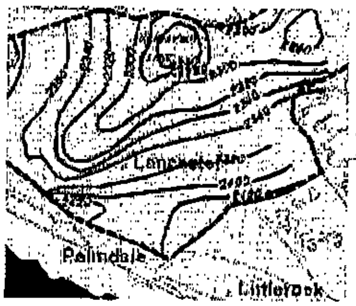


Fig. 2

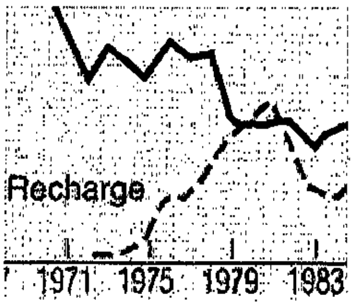
Problems related to land subsidence thus far have been subordinate to problems of ground-water supply. The costs of pumping ground water, which played a major role in the reduction of agricultural ground-water use, is not yet a limiting factor for the development of municipal-industrial ground-water supplies. The importation of surface water to Antelope Valley from northern California in 1972 via the State Water Project (SWP), California Aqueduct (Figure 1) has provided an alternate water resource that has sustained the growth of a municipal-industrial water demand that is fundamentally dependent on ground-water supplies. The limited storage and delivery capacity of the SWP and the high degree of annual variability in the supply due to climatologic and environmental factors related to diversions from the San Francisco Bay/Delta system, place reliance on the ground-water supply to sustain current and future levels of demand. The prospect for the continuing depletion of the aquifers looms large in the face of this growing demand. A legacy of land subsidence inherited by current and future users of the ground-water resource will become more burdensome under projected circumstances. The economic and environmental consequences of continued ground-water mining -- aquifer-system compaction and land subsidence -- pose challenges to users of the depleted resource and may play a role in limiting the development of municipal-industrial supplies.

This paper briefly addresses the historical context of ground-water use and concomitant land subsidence in Antelope Valley. We explore the transition of an agricultural-based water demand to a burgeoning municipal/industrial- based water demand. We discuss the essentially irreversible process of land subsidence in terms of the immediate challenges it presents to future managers of the ground-water resource in Antelope Valley.

Ground-Water Use in Transition

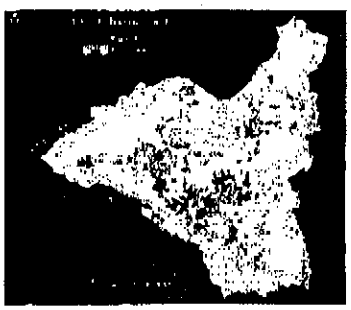
Prior to 1908, the early settlers in Antelope Valley drilled more than 300 flowing wells in the central and lower parts of the valley where it was possible to tap shallow artesian aquifers (Figure 2). Many of these wells were drilled to obtain patents to Government land; some were used to water livestock and crops (Johnson, 1911). The alkali soils in the region of flowing wells severely limited attempts to farm the land, and the quantity of water from flowing wells applied to irrigation was probably small (Thompson, 1929). Concurrently, diversions along the courses of mountain streams were used to irrigate primarily orchards on lands near the heads of alluvial fans along the south side of the valley.

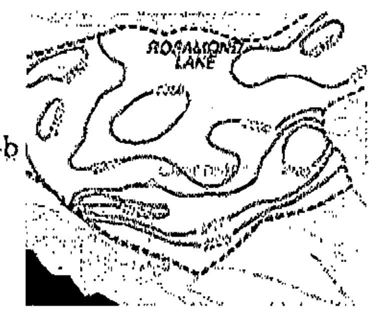
When the earliest irrigation systems, dependent on surface streams, failed to provide a stable and reliable water source for crop production, the ready accessibility of ground-water spurred a steady and strong development of irrigated agriculture, which began shortly after 1912. Initially, land was developed for alfalfa production near the margins of the area of artesian flow (Figure 2) where soil conditions were suitable and pumping lifts were low (Thompson, 1929). Alfalfa was the most important crop in Antelope Valley and by the early 1950's constituted about 60 to 75 percent of the irrigated acreage and 60 to 70 percent of the gross annual income from all crops (Snyder, 1955). Water demand for crop production reached peak levels in the 1950's when irrigated acreage was at its peak (Figure 3).



Figs. 3a and 3b

Ground-water pumpage was the principal source of water supply until the mid-1970's when imported SWP water was delivered via the California Aqueduct. By this time, irrigated acreage and ground-water pumpage for crop production were on a steady decline, decreasing to 20 percent of peak levels by 1991 (Figure 3). Meanwhile, during the decade of the 1980's, the population of Antelope Valley nearly doubled as the predominant land use shifted from irrigated agriculture to urban land use. Since about 1980, ground-water use has exceeded use of imported surface water and together they make up about 90 percent of the water supply; local surface-water sources constitute the remaining 10 percent.


Figs. 4a and 4b



Figs. 5a and 5b

The transition from a predominantly agricultural water demand to a municipal/industrial water demand began in the early 1960's and had become fully manifest in the early 1990's. Comparisons between the peak agricultural water-use periods of the early 1960's and the early 1990's show that irrigated acreage was reduced by 80 percent while urban land use was increased by more than 200 percent (Figure 4). Although the magnitude of ground-water pumpage in Antelope Valley was reduced dramatically from 1960 levels, by 1991 the shape of the regional aquifer-potentiometric surface showed little recovery in ground-water levels (Figure 5) as extraction more than kept pace with recharge (Figure 3a). In 1991, ground-water pumpage exceeded, by nearly two-fold, the estimated mean natural recharge to Antelope Valley. By 1991 ground-water pumpage had become more focused in the expanding urban areas of Lancaster and Palmdale, where additional ground-water level declines are evident (Figure 5b). Figure 6 shows the change in ground-water levels from 1915 to 1991 in the principal aquifer of the Lancaster subbasin.

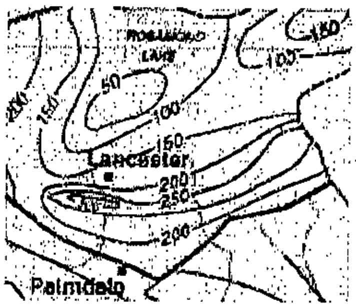
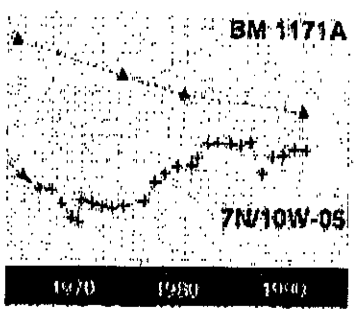


Fig. 6

Legacy of Land Subsidence

The earliest recognition and recording of land subsidence in Antelope Valley may have been made by the Office of the County Engineer of Los Angeles County, on the basis of surveys made during the period 1928 to 1960 (Mankey, 1963). Subsequent measurements made by the County in 1972 were used to compute elevation differences at selected benchmarks between 1935 and 1972 and rates of subsidence between 1967 and 1972 (McMillan, 1973). The relation between ground-water level declines and land subsidence in Antelope Valley was noted by Lofgren (1965), Lewis and Miller (1968), Poland (1984), Holzer (1986), and Prince and others (1995). Measurements relating ground- water level declines, land subsidence and aquifer-system compaction near Edwards Air Force Base were presented by Blodgett and Williams (1992), and Londquist and others (1993). The relation between regional land subsidence and ground-water level declines in central Antelope Valley was established on the basis of geodetic and hydrologic measurements made during the period 1926 to 1992 and reported by Ikehara and Phillips (1994).



Figs. 7a and 7b

More than 6 ft of subsidence, attributable to ground-water withdrawal has occurred since 1926 in parts of Antelope Valley. Figure 7 shows paired graphs of ground-water level changes in two wells and land subsidence calculated for two nearby benchmarks. The locations of the wells and benchmarks are shown on Figure 1. The distribution and magnitude of subsidence (Figure 8) reflects in part the changing shape and position of the aquifer potentiometric surfaces (Figure 6) and the areal distribution and aggregate thickness of compressible sediments. Altogether, 290 square miles have been affected by more than 1 foot of land subsidence in Antelope Valley (Ikehara and Phillips (1994).

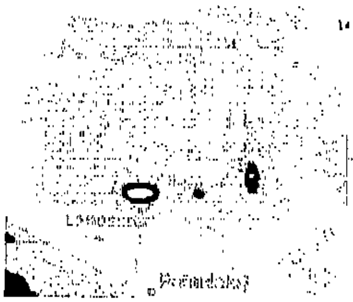


Fig. 8

It must be recognized that Figure 8 represents only a snapshot of an ongoing process that inevitably lags the depletion of artesian pressures in the aquifer systems. The rate at which the aquifer systems are presently compacting, and the extent of their progression toward the ultimate compaction required by the current state of ground-water level drawdowns are largely unkown. They are determined, predominantly, by the various thicknesses, vertical permeabilities, and compressibilities of the individual aquitards within the aquifer systems (Poland, 1984). These parameters have not yet been closely examined in Antelope Valley, and recent rates of compaction and their relation to ground-water level changes are known at only one site, near the southern end of Rogers Lake (Londquist and others (1993). Nevertheless, reasonable extrapolations from similar areas (Ireland and others, 1984; Poland and Ireland, 1988) suggest that the subsidence presently observed may be only a modest fraction (perhaps 35 to 65 percent) of that which will ultimately occur, if ground-water levels are maintained at approximately their historic low levels. Furthermore, that fraction may be expected to vary substantially from place to place within the basin as a function of the local geology and history of water-level decline. The data presently available are not adequate to support a reliable estimate of the magnitude of ground-water level recovery that would be required to virtually eliminate additional subsidence.

Differential land subsidence has altered surface drainage gradients, contributing to erosion and flooding problems, particularly evident on Rogers Lakebed where flooding and tensional earth fissures have caused the closure of runways once used to land the Space Shuttle (Blodgett and Williams, 1992). Linear engineered structures are particularly susceptible to damage, including canals, sewers, water delivery systems, drainage works, flood-control facilities, transportation grids, and well casings. No strict accounting has been made to date of private or public damages incurred as a result of land subsidence in Antelope Valley.

Past agricultural uses and increasing municipal-industrial demands for ground water leave future users of the resource a legacy of aquifer-system compaction, land subsidence, earth fissures and flood-control problems. Ground-water withdrawals have been reduced by importation of surface water to the most prominent subsidence areas in California (Bertoldi, 1992), including Antelope Valley. In some of these areas subsidence has been stopped by a substantial recovery of artesian pressures. However, increasing and conflicting demand on the developed surface-water supply and extended drought periods resulting in increased ground-water withdrawals provide reasons for concern about potential renewed or continuing land subsidence.

Ground water continues to be an important component of the water supply in Antelope Valley, constituting about 85 percent of the total supply in 1992 (Templin and others, 1995). 1992 was the sixth year of the 1987-1992 drought in California. In non-drought years, ground-water constitutes about 60 percent of the total water supply in Antelope Valley (Templin and others, 1995). Variabilities in annual hydrologic cycles and deliveries of surface-water supply from the SWP underscore the importance of managing the local ground-water resources in the effort to meet current and future demands.

Managing the Resource

Blomquist (1992) defines ground-water basin management as representing "... a deliberate effort to derive greater benefits from the use of this resource while avoiding its depletion and the associated human welfare costs." One of the human welfare costs is the damage caused by land subsidence. In the past and currently, the private cost of using the ground-water resource has not reflected the cost to society of ameliorating the consequences of subsidence. The optimal use of the ground-water resource would approximate a balance between supply and demand to minimize depletion of the resource, while maximizing its beneficial use and minimizing social costs. One challenge facing the developing Antelope Valley is to quantify and monitor the benefits and true costs of using the ground-water resource.

In 1991, in response to growing concerns of ground-water depletion and related land subsidence problems, the ad hoc Antelope Valley Water Group (AVWG) formed to provide a forum for communication and cooperation between valley agencies with an interest in water. The group currently includes representatives from the member agencies, Antelope Valley-East Kern Water Agency (AVEK), Antelope Valley United Water Purveyors, City of Lancaster, City of Palmdale, Edwards Air Force Base, Los Angeles County Waterworks Districts, County Sanitation Districts of Los Angeles County, Palmdale Water District, and Rosamond Community Services District. The group's primary mission is to address the future of the valley's water resources through the conjunctive use of available surface-water and ground-water supplies. Taken together, the AVWG represents virtually all of the surface-water deliveries, imported and local, and more than half of the ground-water pumpage in the valley.

In Antelope Valley and elsewhere, the hazards and economic costs associated with land subsidence depend on its proximity to populations and manmade structures, among other factors. Mapping programs are recognized as an important element in efforts to identify and manage subsidence problems (National Research Council, 1991). The AVWG completed two studies that mapped current (early 1990's) and historical land and water use (Templin and others, 1995), and land subsidence related to ground-water withdrawal (Ikehara and Phillips, 1994). A third, companion study assessed water supply and demand issues in the context of the valley's water resources (Takaichi, 1995). The results of this study included a proposed "Basic Water Resource Protection Strategy" and specific recommended actions for implementing the strategy.

The strategy developed by the AVWG includes institutional, engineering, financial, and public-education components. It focuses on minimizing the growth of water demand, and developing additional water resources to meet future demand while optimizing the use of existing water resources. Specific elements of the "Basic Water Resource Protection Strategy" include:

- Improved utilization of available water supplies -- focuses on use of reclaimed water, stormwater, and imported water, in lieu of ground water.
- Ground-water basin management -- emphasizes balancing ground-water extractions with the safe-yield of the ground-water basins, and advocates implementing artificial ground-water recharge programs.
- Protection of ground-water quality.
- Reduction in long-term water demand -- proposes specific programs of water conservation for the Cities of Palmdale and Lancaster, and the Community of Rosamond.
- Improved SWP reliability -- promotes active participation in the issues involved in SWP allocations, such as environmental concerns in the Bay-Delta and SWP financing.
- Acquisition of additional imported water supplies.

The AVWG report (Takaichi, 1995) recommends that the following actions be taken to implement the strategy:

- Create an institutional framework to manage the development and use of water supplies.
- Determine the safe yield of the Antelope Valley ground-water basins.
- Continue the current ground-water monitoring program and publish an annual report on basin conditions.
- Develop a program to optimize the use of available water supplies.
- Develop water conservation, reclaimed water, stormwater management, and aquifer storage and recovery programs.
- Actively encourage the California Department of Water Resources to complete the State Water Project and/or improve its reliability.
- Obtain additional imported water supplies.
- Develop a revenue plan to implement the recommended programs.
- Initiate a public education program.

In order to address components of the "Basic Water Resource Protection Strategy" relevant to the ground-water flow system and land subsidence, the AVWG is developing a regional ground-water flow and aquifer-system compaction model for Antelope Valley. A separate study begun in April, 1996, is evaluating a pilot program for aquifer storage and recovery in Lancaster. Approximately 3000 acre-ft of treated, imported surface water will be injected in two existing production wells to recharge the principal aquifer. The pilot program will evaluate the aquifer hydraulics and mechanics involved in storing and recovering treated, surplus water from the SWP in the local aquifer.

The population of Antelope Valley is projected to grow from 260,400 in 1990 to 690,000 by the year 2010 (Calif. Dept. of Finance, 1992). Meanwhile, total water demands are expected to triple by the year 2010 because of continued urban development, placing more reliance on local ground-water resources and exacerbating problems of ground-water depletion and land subsidence. With the recommended water conservation programs in place, assuming 100 percent delivery of available water supplies and that ground-water extractions do not exceed 59,100 acre-feet per year, it is anticipated that the water demands will exceed the available supplies by the year 2002 (Takaichi, 1995). Implementing the recommended system for utilizing reclaimed water would satisfy the anticipated water demands for another two years, until 2004.

Clearly, actions to reduce water demand and increase locally available surface-water supplies will not meet anticipated water demands, even in the near-term. In the absence of a substantially increased allocation from the SWP or other non-local sources, the growing municipal-industrial water demand can be met only through increased ground-water pumpage. Experience suggests that the continued mining of ground water from the Lancaster subbasin will cause additional aquifer- system compaction. The future of ground-water use in Antelope Valley is linked to continuing compaction of the aquifer system and additional land subsidence. The hydrogeologic complexities of the linkages and the associated ground-water basin management challenges will continue to confront AVWG and other future users of this crucial resource in the arid, high-desert valley.

Acknowledgments

The authors acknowledge the pioneering efforts of the Antelope Valley Water Group (AVWG) in organizing the self-governing, collective action to address the critical and complex issues confronting future users of the scarce Antelope Valley water resources. The AVWG Technical Advisory Committee, on which we (U. S. Geological Survey) serve with representatives of AVWG, has been the driving force and focal point of that effort. We are grateful to our colleagues and mentors, Gilbert L. Bertoldi and Francis S. Riley, Scientists Emeritus, U. S. Geological Survey, for their thoughtful suggestions and comments that have improved the usefulness and completeness of this manuscript. We are especially grateful to Louisa D. Boyd for her input on improving the readability of the companion page on the world-wide-web, URL http://water.wr.usgs.gov/poland/index.html.

California District home page or USGS Water Resources Information home page or USGS home page .

EXHIBIT "2"

TABLE 2-3
POPULATION PROJECTIONS

	1970[a]	1980[a]	1985[b]	1990[a]	2000[a]	2005	2015	2035
Boron[d]	3,000	3,000	3,000	3,000	2,000	2,000	3,000	5,000
California City[d]	2,000	3,000	4,000	6,000	8,000	9,000	12,000	20,000
Edwards AFB[d]	10,000	9,000	8,000	7,000	7,000	7,000	10,000	16,000
Mojave[d]	4,000	5,000	5,000	7,000	6,000	7,000	9,000	14,000
Rosamond[d]	4,000	5,000	6,000	9,000	15,000	17,000	22,000	38,000
Unincorporated Kern County[d]	1,000	2,000	3,000	8,000	12,000	13,000	17,000	28,000
Lancaster[c]	41,000	51,000	55,000	98,000	113,000	142,000	192,000	283,000
Palmdale[c]	17,000	22,000	24,000	67,000	96,000	146,000	218,000	380,000
Unincorporated Los Angeles County[d]	20,000	29,000	33,000	69,000	88,000	100,000	129,000	215,000
Antelope Valley Region	**103,000**	**128,000**	**140,000**	**275,000**	**346,000**	**444,000**	**612,000**	**1,000,000**

Notes: Projections Rounded to the nearest 1,000 people.
(a) Based on Geolytics Normalization of Past U.S. Census Tract Data to 2000 Census Tract Boundaries.
(b) Based on an Interpolation of the 1980 and 1990 U.S. Census Data.
(c) SCAG projections for North Los Angeles County Subregion. 2035 Estimates assume same growth rate as in 2030.
(d) Projections assume the SCAG Growth Rate of 4.2 percent for the Antelope Valley Region.

FIGURE 2-12
POPULATION PROJECTIONS

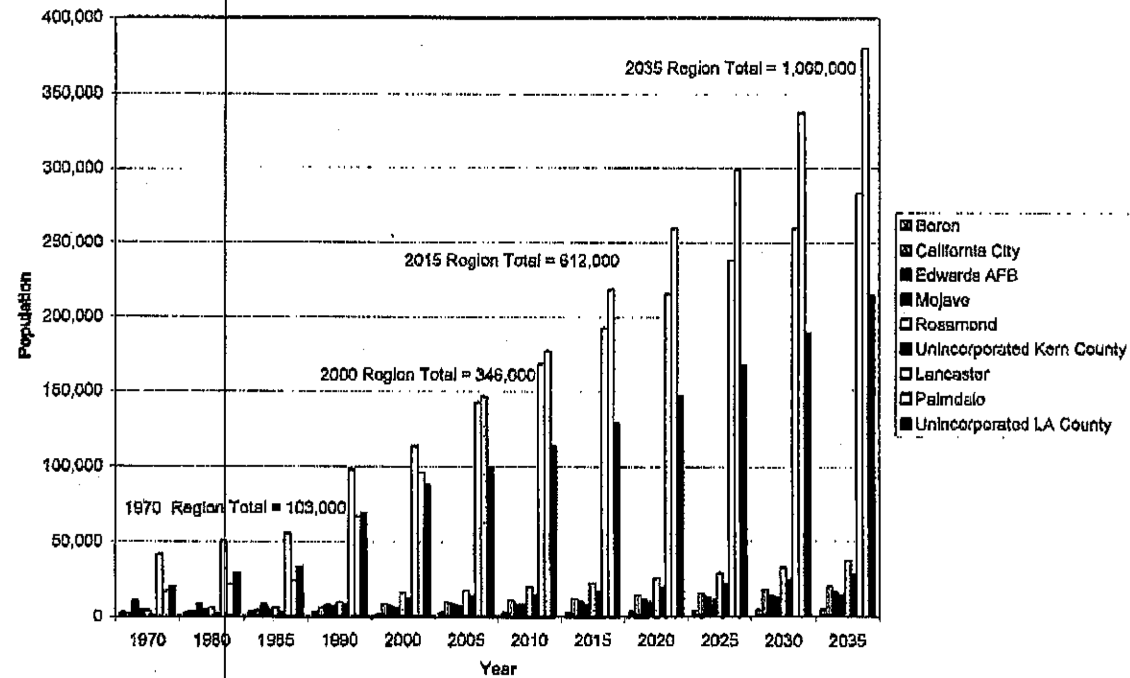


FIGURE 2-13
ANTELOPE VALLEY REGION POPULATION

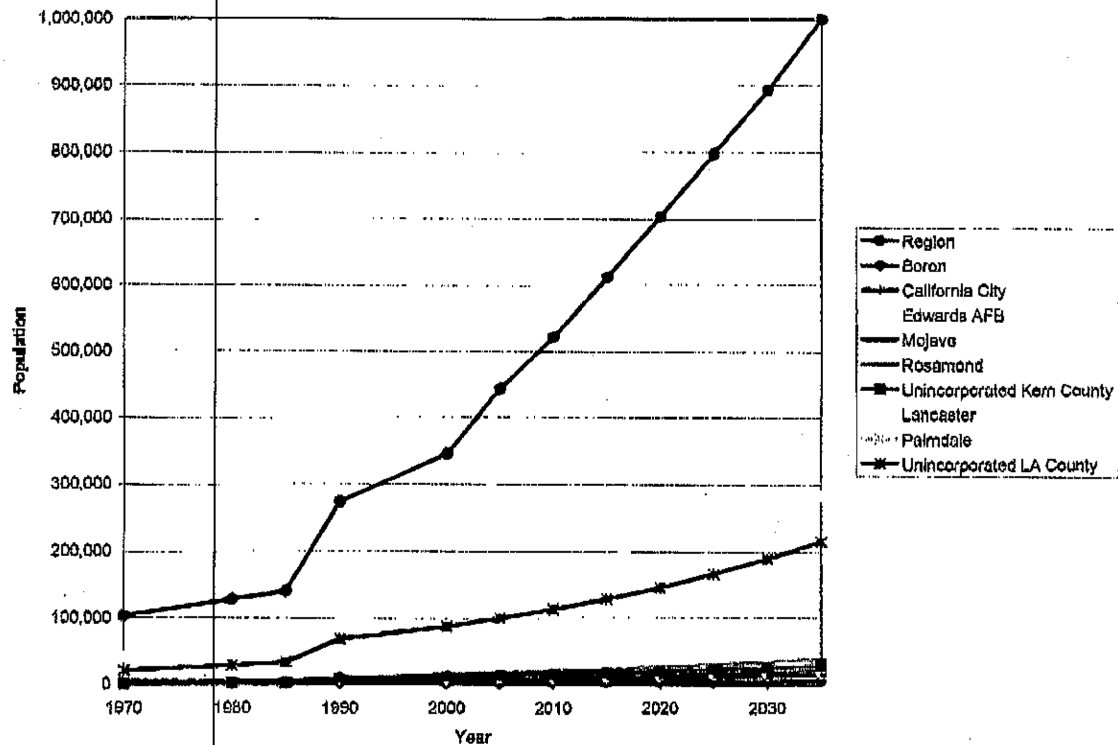


EXHIBIT "3"

TABLE 3-9
WATER DEMAND PROJECTIONS (AF) FOR THE ANTELOPE VALLEY REGION

	2010	2015	2020	2025	2030	2035
Urban Demand						
Boron	1,000	1,000	1,000	1,000	1,000	1,000
California City	3,000	3,000	4,000	4,000	5,000	6,000
Edwards AFB[(a)]	2,000	3,000	3,000	3,000	4,000	4,000
Mojave	2,000	2,000	3,000	3,000	3,000	4,000
Rosamond	5,000	6,000	7,000	8,000	9,000	10,000
Unincorporated Kern County	4,000	5,000	5,000	6,000	7,000	8,000
Lancaster	46,000	52,000	59,000	65,000	71,000	77,000
Palmdale	48,000	60,000	71,000	82,000	92,000	104,000
Unincorporated LA County	31,000	35,000	40,000	45,000	52,000	59,000
Subtotal Urban Demand	142,000	167,000	193,000	217,000	244,000	273,000
Agricultural Demand						
Agricultural Demand Dry Year	136,000	136,000	136,000	136,000	136,000	136,000
Agricultural Demand Average Year	127,000	127,000	127,000	127,000	127,000	127,000
Total Region Dry Year Demand	278,000	303,000	329,000	353,000	380,000	409,000
Total Region Average Year Demand	269,000	294,000	320,000	344,000	371,000	400,000
Average Year Percent Urban	53	57	60	63	66	68
Average Year Percent Ag	47	43	40	37	34	32
Dry Year Percent Urban	21	55	59	62	64	67
Dry Year Percent Ag	49	45	41	38	36	33

Notes: All numbers rounded to nearest 1,000 AF.
(a) Projections subject to review and update by Edwards AFB.

3.1.6.1 Urban (Municipal and Industrial) Demand

Urban water demands were developed from the population projections presented in Table 2-3 (in Section 2) and assume a regional water use per capita estimate of 243 gallons per day (gpd) per person (or 0.273 AFY per person). This per capita water use estimate was determined using a weighted average of total per capita water use estimates for the major water supply agencies in the Antelope Valley Region as shown by Table 3-10. As discussed in Section 2, growth rates within an agency are consistent and thus an average per capita water use is an appropriate estimate of demand. The rate of water use in areas provided by other urban water suppliers were assumed to have minimal impact on the average and therefore were not included.

The per capita water use values could be reduced in the future with the implementation of more robust demand management measures, which could reduce the average use per person.

EXHIBIT "4"

AVEK's Quartz Hill WTP will require an expansion to approximately 97 mgd to treat LACWWD 40's projected demands (LACWWD 40 1999). Furthermore, as previously mentioned, AVEK has capacity constraints in the summer and limited demand for water during the winter months. Thus, additional storage or recharge in the winter months is required in order for them to beneficially use their full Table A amount.

LACWWD 40's facilities improvements will include new wells, reservoirs and pipelines throughout its system to meet current and projected water supply requirements. Additional connections with AVEK will be needed to maximize use of available imported water. LACWWD 40 is pursuing the use of recycled water as an alternative source for irrigation and recharge purposes. LACWWD 40 has also started the Lancaster ASR Project in an effort to recharge treated SWP water for extraction at a later time (LACWWD 40 1999).

PWD's plan for improvements and expansion of its existing infrastructure is currently being developed in its 2006 Water System Master Plan Update. According to PWD's 2006 Strategic Plan, PWD is identifying additional water sources by investigating the potential to increase the yield from Littlerock Reservoir, water conservation, recycled water (urban irrigation and groundwater recharge), additional Table A SWP water, and water transfers. The 2006 Master Plan Update will also provide a plan for infrastructure upgrades, which includes development of an existing system hydraulic model and identifying improvements needed to mitigate existing deficiencies.

QHWD plans to enlarge existing wells or drill new wells to meet additional demands. There are no plans for QHWD to invest in recycled water in the near future because tertiary treatment and recycled water pipelines are too costly. QHWD does intend to recharge local aquifers when excess surface water is available and is currently equipping new wells with appropriate piping (QHWD 2002).

RCSD will need new wells, a reservoir, and additional transmission mains to meet projected demands (RCSD 2004).

Furthermore, the current planned regional recycled water distribution system would only deliver water to M&I users. Additional infrastructure would be required to deliver recycled water to any potential agricultural users other than the LACSD effluent management sites or adjacent users.

3.1.9.5 Effects of Land Subsidence

Groundwater use in the Antelope Valley Region was at its highest in the 1950s and 1960s as a result of agricultural demands (USGS 1994a). According to USGS, land subsidence in Antelope Valley Region was first reported by Lewis and Miller in the 1950s (USGS 1992). Since then, studies have shown subsidence levels of up to 7 feet occurring in some areas of Antelope Valley Region (see Figure 3-17). Conversations held with various agencies and companies indicate that within the Antelope Valley Region, the Lancaster and Edwards AFB areas are currently experiencing problems or damages that appear to be related to land subsidence (see Figure 3-18).

Land subsidence results in the following impacts:

- Development of cracks, fissures, sink-like depressions and soft spots.

- Change in natural drainage patterns often resulting in increased areas of flooding or increased erosion.
- Degradation of groundwater quality.
- Permanent reduction in groundwater storage capacity.
- Change in gradient in gravity pipelines (sanitary and storm sewers) or canals often resulting in lost capacity.
- Damage to well casings, pipelines, buildings, roads, railroads, bridges, levees, etc.
- Costs associated with repairs and rebuilding.
- Costs associated with construction of new facilities such as pumping stations for gradient changes.
- Reduction in land value.
- Lawsuits.
- Increased pumping costs.

Table 3-25 lists land subsidence problems identified in Antelope Valley Region.

The following paragraphs present brief discussions on several studies done on land subsidence in Antelope Valley Region.

USGS Report 92-4035. USGS (1992) reported that as much as 2 feet of land subsidence had affected Antelope Valley Region by 1967 and was causing surface deformations at Edwards AFB. Fissures, cracks and depressions on Rogers Lake were affecting the use of the lakebed as a runway for airplanes and space shuttles. In addition, depressions, fissures and cracks on the lakebed may not be detected until aircraft or space shuttles exceed the load capacity of the soil. Another concern was potential contamination of the water table through fissures which can provide direct access for toxic materials.

To determine the significance of land subsidence conditions, bench marks were surveyed using a Global Positioning System (GPS) in 1989. Differential levels were surveyed for 65 bench marks from 1989 to 1991. It was discovered that total land subsidence ranged from 0.3 to 3.0 feet.

USGS Report 93-4114. USGS (1993b), reported that land subsidence effects had been noted on Rogers Lake in the form of depressions, fissures and cracks. The report identified pumping of groundwater as the cause of the land subsidence. As much as 90 feet of groundwater level decline has occurred in the South Base well field, and an average annual compaction rate of 5.57×10^{-2} feet was measured at the Holly site near the South Track well field (see Location 3 on Figure 3-18).

EXHIBIT "5"

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ROSAMOND COMMUNITY SERVICES DISTRICT and LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40

EXEMPT FROM FILING FEES UNDER GOVERNMENT CODE SECTION 6103

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES – CENTRAL DISTRICT

ANTELOPE VALLEY GROUNDWATER CASES

Included Actions:
Los Angeles County Waterworks District No. 40 v. Diamond Farming Co., Superior Court of California, County of Los Angeles, Case No. BC 325201;

Los Angeles County Waterworks District No. 40 v. Diamond Farming Co., Superior Court of California, County of Kern, Case No. S-1500-CV-254-348;

Wm. Bolthouse Farms, Inc. v. City of Lancaster, Diamond Farming Co. v. City of Lancaster, Diamond Farming Co. v. Palmdale Water Dist., Superior Court of California, County of Riverside, Case Nos. RIC 353 840, RIC 344 436, RIC 344 668

Judicial Council Coordination No. 4408

Santa Clara Case No. 1-05-CV-049053
Assigned to The Honorable Jack Komar

CASE MANAGEMENT CONFERENCE STATEMENT

<u>Hearing:</u>

Date: April 16, 2007
Time: 9:00 a.m.
Dept.: 1

RVPUB\EGARNER\730349.1

Following the last court hearing, the Court issued its minute order granted a modified request for certification of a class or classes. The Court requested further proposals for class definitions to be followed by proposals concerning potential class representatives. This case management conference statement first addresses the issue of class representatives. Next, the statement contains mediation proposals and requests the Court facilitate a mediation process.

1. <u>There Are Proposed Class Representatives for the Property Owner Classes</u>

A separate class action lawsuit was filed by Rebecca Willis. The Willis class action has been coordinated with the existing adjudication proceedings. Willis is the putative class representative and is purportedly an adjudication landowner with land does not pump groundwater. There are purportedly many other class members similarly situated.

Within the adjudication area, there are certain landowners who formed a group commonly known as the "Nebeker Group" and self-designated as "AGWA." They purportedly own land that pumps groundwater. There are purportedly many other class members similarly situated.

Willis has been proposed to represent the subclass previously and preliminarily designated as "Subclass A" because they are similarly situated landowners who do not pump groundwater. It has also been proposed that one or more members of the Nebeker Group represent the subclass preliminarily designated as "Subclass B" because they are similarly situated landowners with groundwater wells. Rosamond Community Services District ("Rosamond") and the Los Angeles County Waterworks District No. 40 ("Waterworks District No. 40") do not object to these proposed class representatives.

2. <u>Mediation</u>

After the Judicial Council approved coordinated groundwater adjudication proceedings, many of the public and private parties in this litigation began meeting to discuss resolving the litigation and addressing groundwater conditions in the Antelope Valley. Discussions have occurred with relatively large numbers of attorneys. Occasionally, experts and party principals attended the meetings.

A number of parties have suggested the use of a facilitator to move along a mediation process and there seems to be widespread agreement that this makes sense. Although not an idea

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initiated by Rosamond and Waterworks District No. 40, both are very supportive of an expeditious resolution of this case and support using a mediator. There are several reasons a mediator is appropriate.

First, due to the large number of attorneys in the meetings, meetings are difficult to schedule on a volunteer participation basis. Moreover, they sometimes suffer from the absence of sound technical data. In all meetings there is certain attorney verbosity, lack of experience in groundwater and/or class litigation, and personality issues. For these reasons, Rosamond and Waterworks District No. 40 suggest that the Court facilitate a settlement process that involves Court supervision over a group of principals of major pumpers. It is hoped that active Court supervision over the settlement process will minimize or eliminate previous and existing mediation obstacles.

There are crucial issues that need to be resolved by the major pumpers in the Basin. Until issues such as the general allocation of Basin pumping rights are worked through, resolution of the case and implementation of a needed physical solution are impossible. Although the technical committee is still developing important data related to the conditions in the Basin, there is currently sufficient hydrologic data available for the pumpers to have meaningful discussions. Such discussions may provide a basis to facilitate the resolution of the case and at the very least may lead to an interim solution providing significant protection to the Basin while the litigation proceeds. If the pumpers cannot reach agreement, resolution of the case short of trial and interim protection of the Basin will be much more difficult. Waterworks District No. 40 and Rosamond request the following;

1. The Court orders the parties to mediation. In the event the Court decides not to conduct the medation, a number of parties have already agreed to Bill Dendy as a mediator.

2. The Court determines that it is unnecessary for each party to attend every mediation. Almost all parties share sufficient characteristics with other parties so that they may participate in the mediation through court-appointed representatives. For example, mediation concerning issues such as allocation of native groundwater supply should include only principals for the following as representatives for those parties claiming a right to the native groundwater

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supply: Tejon Ranch, Nebeker Group, Los Angeles County Waterworks District No. 40, Mutual Water Companies' representative, Palmdale Water District, Los Angeles County Sanitation Districts, City of Los Angeles (Los Angeles World Airports), Edwards Air Force Base, Rosamond Community Services District, Borax, Van Dams, Quartz Hill District, and Bolthouse and Diamond Farms.

3. The Court retains control over the mediation process by imposing mediation schedules, conducting post-mediation hearings and taking further action, as necessary.

4. The Court determines mediation issues and their order. Many parties agree that the important initial issues relate to native groundwater.

5. The informal Technical Committee may continue with its work without interference from the mediator, and can be responsible for gathering and providing technical analysis for mediation and litigation issues These issues may include the determination of native groundwater yield, quantification of return flows, and storage of supplemental water ("groundwater banking").

Perhaps more than in most cases, the settlement process for complex groundwater proceedings can benefit greatly from judicial supervision and involvement. In this case there are already large numbers of parties and attorneys meeting from time-to-time on various issues. As explained, however, there is a recognized need for judicial assistance in the settlement process. For those reasons, the above mediation proposals are respectfully submitted for the Court's consideration.

Dated: April 13, 2007

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By [signature]

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PROOF OF SERVICE

I, Kerry V. Keefe, declare:

I am a resident of the State of California and over the age of eighteen years, and not a party to the within action; my business address is Best Best & Krieger LLP, 5 Park Plaza, Suite 1500, Irvine, California 92614. On April 13, 2007, I served the within document(s):

CASE MANAGEMENT CONFERENCE STATEMENT

- [x] by posting the document(s) listed above to the Santa Clara County Superior Court website in regard to the Antelope Valley Groundwater matter.
- [ ] by placing the document(s) listed above in a sealed envelope with postage thereon fully prepaid, in the United States mail at Irvine, California addressed as set forth below.
- [ ] by causing personal delivery by ASAP Corporate Services of the document(s) listed above to the person(s) at the address(es) set forth below.
- [ ] by personally delivering the document(s) listed above to the person(s) at the address(es) set forth below.
- [ ] I caused such envelope to be delivered via overnight delivery addressed as indicated on the attached service list. Such envelope was deposited for delivery by Federal Express following the firm's ordinary business practices.

I am readily familiar with the firm's practice of collection and processing correspondence for mailing. Under that practice it would be deposited with the U.S. Postal Service on that same day with postage thereon fully prepaid in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

Executed on April 13, 2007, at Irvine, California.

Kerry V. Keefe

ORANGE\KKEEFE\24201.1

PROOF OF SERVICE

STATE OF CALIFORNIA }
COUNTY OF SAN BERNARDINO}

I am employed in the County of the San Bernardino, State of California. I am over the age of 18 and not a party to the within action; my business address is 1839 Commercenter West, San Bernardino, California.

On August 6, 2007, I served the foregoing document(s) described as: **OPPOSITION TO MOTION FOR APPOINTMENT OF BILL DENDY AS SETTLEMENT CONFERENCE REFEREE** on the interested parties in this action served in the following manner:

__XX__ **BY ELECTRONIC SERVICE AS FOLLOWS** by posting the document(s) listed above to the Santa Clara website in the action of the *Antelope Valley Groundwater Litigation*, Judicial Council Coordination Proceeding No. 4408, Santa Clara Case No. 1-05-CV-049053.

__X__ (STATE) I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

Executed on August 6, 2007, at San Bernardino, California.

P. Jo Anne Quihuis