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8
9 SUPERIOR COURT OF THE STATE OF CALIFORNIA
10 LOS ANGELES COUNTY
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13 **LOS ANGELES COUNTY**
WATERWORKS DISTRICT NO. 40,
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15 Plaintiff,
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17 v.
18
19 **DIAMOND FARMING COMPANY;**
BOLTHOUSE PROPERTIES, INC.; CITY
OF LANCASTER; CITY OF LOS
ANGELES; CITY OF PALMDALE;
LITTLEROCK CREEK IRRIGATION
DISTRICT; PALMDALE WATER
DISTRICT; PALM RANCH IRRIGATION
DISTRICT, QUARTZ HILL WATER
DISTRICT; and DOES 1 through 25,000
inclusive; ,
20
21
22 Defendants.
23

Case No. JCCP 4408

**DECLARATION OF W. GREG HAMER
IN SUPPORT OF STATE OF
CALIFORNIA FOR PHASE VI TRIAL**

Time: 10:00 AM
Judge: Hon. Jack Komar
Trial Date: September 28, 2015
Action Filed: October 26, 2005

24 I, W. GREG HAMER, declare as follows:

25 1. I am a Principal Hydrogeologist with AMEC/ Foster Wheeler, formerly AMEC
26 Environment and Infrastructure, Incorporated ("AMEC"). I am currently registered as a
27 California Professional Geologist, and certified as a California Certified Engineering Geologist,
28

1 and a California Certified Hydrogeologist. I am authorized to make this declaration for and on
2 behalf of eight (8) state agencies: (1) California Department of Transportation; (2) California
3 Department of Water Resources; (3) California Department of Parks & Recreation; (4) California
4 Highway Patrol; (5) California Department of the Military; (6) California Department of
5 Corrections and Rehabilitation; (7) California Department of Veterans Affairs; and, (8) California
6 50th District Agricultural Association. If called as a witness, I could and would competently
7 testify to each fact and opinion herein.

8 2. I have a Master of Science degree in Geology/ Hydrogeology and a Bachelor of
9 Science degree in Geology/ Hydrogeology from California State University – Los Angeles.

10 3. I have been working professionally over thirty-eight (38) years in the field of
11 Geology and Hydrogeology.

12 4. Since 2008, I have been employed by AMEC in Newport Beach, California, as a
13 Senior Associate Hydrogeologist and Principal Hydrogeologist. From 2002 to 2008, I was
14 employed by Geomatrix Consultants as a Senior Hydrogeologist. From 1978 to 2002 I worked at
15 various companies and engineering firms as a Hydrogeologist. I therefore have extensive
16 knowledge in the field of hydrogeology and in water use, water quality, and hydro-engineering.
17 A true and correct copy of my Curriculum Vitae is attached hereto as Exhibit 1.

18 5. I have performed and managed water-resources investigations and environmental
19 studies for more than thirty (30) years. I have managed and performed groundwater
20 investigations throughout Southern California, including studies of both coastal and inland basins.
21 I have performed hydrogeologic and environmental evaluations of more than twenty (20)
22 groundwater basins in the eastern and northern Mojave Desert, and in Mono and Shasta Counties.
23 My work experience includes development of detailed groundwater basin water balances for
24 water supply.

25 6. I have been contracted by the Office of the California Attorney General in this
26 coordinated groundwater case regarding the Antelope Valley Groundwater Basin (Basin), to
27 review, advise and render an opinion as a professional hydrogeologist on behalf of eight (8) state
28 agencies: (1) California Department of Transportation; (2) California Department of Water

1 Resources; (3) California Department of Parks & Recreation; (4) California Highway Patrol; (5)
2 California Department of the Military; (6) California Department of Corrections and
3 Rehabilitation; (7) California Department of Veterans Affairs; and, (8) California 50th District
4 Agricultural Association. Specifically, I was tasked with determining the water use of each
5 agency from wells pumping groundwater from the Basin, the amount of water pumped from such
6 wells by each agency, the agency's use of water other than groundwater, the amount of each
7 agency's use of water other than groundwater, and whether the uses of the water from the various
8 sources is both reasonable and beneficial.

9 7. In preparing this opinion, I reviewed pleadings filed in superior court for the Phase
10 IV Trial in this case, discovery exchanged prior to that Phase IV Trial, supplementary
11 documentation and data from each state agency listed above, and spoke to employees from each
12 state agency regarding its water use at each facility it operated. Following that review, I
13 performed my own calculations to determine the amount of water pumped and used by each
14 agency in my professional opinion. My expert opinions are summarized as follows:

15 **DEPARTMENT OF TRANSPORTATION (Caltrans)**

16 8. I have reviewed information made available by Caltrans, publicly available
17 information, and the Declarations of both Jerome Marcotte and Nancy Escallier and the Exhibits
18 attached thereto for the Phase IV Trial in this case. The publicly available documents I have
19 reviewed include, but are not limited to the following:

20 A. University of California Cooperative Extension and California Department of
21 Water Resources, 2000, A Guide to Estimating Irrigation Water Needs of Landscape Plantings in
22 California;

23 B. Regents of the University of California Division of Agricultural and Natural
24 Resources communication Services, 2001, Lawn Watering Guide for California, UCANR
25 Publication, 8044.

26 C. University of California website: [http://ucanr.edu/sites/UrbanHort/Water Use of
27 Turfgrass and Landscape Plant Materials/Plant Water Needs/Easy Calculators for Estimating
28 Landscape Water Needs/.](http://ucanr.edu/sites/UrbanHort/Water%20Use%20of%20Turfgrass%20and%20Landscape%20Plant%20Materials/Plant%20Water%20Needs/Easy%20Calculators%20for%20Estimating%20Landscape%20Water%20Needs/)

1 9. True and correct copies of these documents are attached hereto as Exhibits 2-4.

2 10. Caltrans owns approximately 1,778 acres of land overlying the Antelope Valley
3 Area of Adjudication (Basin). Caltrans owns and conducts activities in the Antelope Valley area
4 at the following facilities: (1) Boron Safety Roadside Rest Areas (east and west-bound); (2)
5 Claymine Road Overcrossing; (3) Rosamond Interchange; and (4) Lancaster Maintenance Station,
6 District 7.

7 11. **Based on my review of the above referenced documentation, discussions with**
8 **Caltrans employees and preparation of my own calculations, it is my expert opinion that**
9 **Caltrans pumped from the Basin approximately 20.82 acre-feet of water in the year 2011**
10 **and 21.64 acre-feet of water in the year 2012. In addition, Caltrans purchased**
11 **approximately 2.5 acre-feet of water in the years 2011 and 2012 from Rosamond**
12 **Community Services District and Los Angeles Waterworks District No. 40. In total,**
13 **Caltrans used approximately 23.32 in 2011 and 24.14 acre-feet of water in 2012** for visitor
14 related use, irrigation for landscaping and dust control. All of this use was both reasonable and
15 beneficial. With increased visitor use, by the year 2040 Caltrans' water pumping will rise to
16 29.76 acre-feet per year and its total reasonable and beneficial water use will increase to 32.26
17 acre-feet per year. A detailed explanation for each facility is set forth in the following paragraphs.

18 **Boron Safety Roadside Rest Areas**

19 11. Boron Safety Roadside Rest Areas (SRRAs) are highway rest areas that overlie the
20 Antelope Valley Groundwater Basin and are located on California State Highway 58. At the
21 SRRAs, Caltrans uses water for landscaping and for non-landscaping visitor-related uses, such as
22 restrooms and water fountains. Caltrans has two wells located at the SRRAs which provide the
23 water for use at the SRRAs. Neither well was metered in the years 2011-2012. For both the
24 landscaping and non-landscaping water use, it is my opinion that Caltrans in 2011 pumped
25 approximately 20.82 acre-feet of water and in 2012 pumped approximately 21.03 acre-feet of
26 water at the SRRAs, and that in 2040 the combined pumped water usage will increase to 29.15
27 acre-feet of water.

28 12. There are approximately 1.21 acres of grass combined for both the eastbound and

1 westbound areas of the SRRAs and approximately 98 trees on the grounds for both facilities.
2 This information was taken from Caltrans documents, on-site witnesses and Google Earth images.
3 It is my opinion that based upon reasonable water usage for these irrigated areas, the combined
4 landscaped areas currently rely upon 10.2 acre-feet of water per year.

5 13. I also calculated water use for visitors attending and using the facilities at the
6 SRRAs, based on the number of vehicles and visitors per day. In the year 2003, there were
7 approximately 790 vehicles per day at the eastbound rest stop and 640 vehicles per day at the
8 westbound rest stop. These were actual vehicles counts done by Caltrans at those facilities.

9 14. Caltrans also estimates the increased traffic volume on California State Highway
10 58 at the SRRAs from 2003 to 2012 was 2.1% per year, based on Caltrans' Transportation
11 Planning traffic projections and the expert opinion of Jerome Marcotte. Therefore, the total
12 number of vehicles per day at the SRRAs was 1,724 in 2012 and will be 3,085 in the year 2040.

13 15. A reasonable estimate for the number of passengers per vehicles on California
14 State Highway 58 at the SRRAs, based on modeling done by Caltrans and frequently used by
15 Caltrans, is 1.4 passengers per vehicle, for a total of approximately 2,002 visitors per day at the
16 combined facilities in 2003 and 2,414 visitors per day in 2012, increasing to 4,319 visitors per
17 day in the year 2040.

18 16. It is my opinion that with the 2009 upgraded water saving facilities at the SRRAs
19 designed to decrease water use, an average visitor currently uses 3.8 gallons of water per visit. I
20 estimated an additional water use of 500 gallons/day for overall SRRRA facility washing and
21 cleaning (for both westbound and eastbound facilities). Therefore, the total amount of water
22 used in 2011 for non-landscaping purposes was 10.62 acre-feet per year and in 2012 for non-
23 landscaping purposes was 10.83 acre-feet per year. In the year 2040 it will increase to 18.95
24 acre-feet per year. In summary, for the Boron SSRAs, I have concluded that the total water use in
25 2011 was approximately 20.82 acre-feet per year and in 2012 was approximately 21.03 acre-feet
26 per year. The total water use will rise to approximately 29.15 acre-feet per year in 2040.

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1 **Claymine Road Overcrossing**

2 17. Caltrans uses water for landscape irrigation and dust control at the Claymine Road
3 Overcrossing located along California State Highway 58 near Claymine Road. Caltrans hauls
4 water to this site from a well near the Claymine Road Overcrossing itself, or from one of the
5 wells previously mentioned at the Boron Rest Stop. Based on my review of the prior water use
6 calculations for 2012 in Phase IV declarations, it is my opinion that 0.61 acre-feet of water per
7 year is a very reasonable calculation for use in 2012 and current use at this facility. This prior
8 estimate is based upon discussions with Caltrans employees who have indicated that the use in
9 2012 was 5 water trucks per day for 20 days/year. The water trucks haul approximately 2,000
10 gallons of water per trip, which equals approximately 200,000 gallons or 0.61 acre-feet of water
11 per year.

12 **Rosamond Interchange**

13 18. Caltrans uses water for landscaping irrigation at its Rosamond Interchange. Water
14 at the Rosamond Interchange is purchased from Rosamond Community Service District. Based
15 on my review of the amounts of water purchased in 2012 and 2013, it is my opinion that water
16 use in an average year is approximately 0.50 acre-feet per year at this site.

17 **Lancaster Maintenance Station**

18 19. Caltrans uses water at the Lancaster Maintenance Station for employee domestic
19 uses and facility maintenance. Water at the Lancaster Maintenance Station is purchased from Los
20 Angeles County Waterworks District No. 40. Based on my review of purchase records from 2008
21 to 2012, it is my opinion that 2.00 acre-feet of water per year is a reasonable average of water use
22 at this site.

23 **DEPARTMENT OF WATER RESOURCES (DWR)**

24 20. In order to determine the water DWR pumped from the Basin, the uses of the
25 water and the total water used by DWR overlying the Basin, I reviewed information made
26 available by DWR, publicly available information, and the declarations of Blaine Laumbach and
27 the Exhibits attached thereto submitted as evidence in the Phase IV Trial in this case. I also spoke
28 to Mr. Laumbach and other DWR personnel as necessary to clarify certain facts and to form my

1 opinion of DWR's water use at its facilities overlying the Basin. DWR has the following
2 facilities in the area overlying the Basin: (1) The Oso Complex; (2) The Alamo Power Plant; (3)
3 The Tehachapi East Afterbay Trailers; and (4) The Pearblossom Complex. **As set forth below, I**
4 **have calculated that at these facilities, DWR pumped from the Basin in the years 2000,**
5 **2002, 2003 and 2011-2012 a total of approximately 214.79 acre-feet of water per year and**
6 **approximately 254.79 acre-feet of water per year in the years 2001 and 2004. In addition,**
7 **DWR used more than 4,000 acre-feet of water per year that was not pumped from the**
8 **Basin, including Aqueduct water and water purchased from Los Angeles County**
9 **Waterworks District No. 40, in the years 2000-2004 and 2011-2012.** All water used at its
10 facilities is reasonable and beneficial based on the fact that it is used to run its machinery at its
11 facilities, including the California Aqueduct, and for domestic use at its facilities. A detailed
12 explanation for each facility is set forth in the following paragraphs.

13 **Oso Complex**

14 21. DWR's Oso Complex contains several facilities in near proximity to each other:
15 DWR's dewatering facilities for the California Aqueduct (Aqueduct), the Oso Pumping Plant and
16 the Civil Maintenance Sub Center. A description of the water use for each facility is summarized
17 as follows.

18 22. The Oso Complex has thirteen (13) dewatering wells equipped with pumps to
19 lower groundwater levels and dewater the soils beneath the Aqueduct at times when groundwater
20 levels are high. Such high water levels may endanger the overlying concrete Aqueduct liner. As
21 the result of local groundwater conditions, groundwater levels often rise and present a threat to
22 the liner of the Aqueduct. Pumps in ten of the wells (wells 4 through 13) along the Aqueduct are
23 regularly used to lower groundwater levels to the levels needed to protect the Aqueduct liner.
24 The pump in well 1 is inoperable and so it was not considered in the dewatering calculations. The
25 pumps in the other wells are operable. Pumps in wells 2 and 3 operate continuously and support
26 facilities in the Oso Complex, aside from lowering the water table itself. Pumps in wells 4
27 through 13 are used exclusively for dewatering.

1 23. Pumps in wells 4 through 13 extract groundwater from the Basin and convey it
2 approximately 10 to 15 feet from each well to where the water is discharged directly to the
3 Aqueduct. To my knowledge there are no flow meter records for the discharges from these
4 dewatering wells.

5 24. Based upon my review of records related to pump size, age, maintenance and the
6 well depths themselves, and after speaking with DWR staff, I calculated water usage within the
7 ten dewatering wells (4 through 13) to be approximately 199 acre-feet per year in a typical year.
8 In unusually wet years, the pumps would be dewatering approximately 239 acre-feet per year.

9 25. The target groundwater level for the dewatering wells is to keep the groundwater
10 below elevation 3,097 feet. The water surface in the Aqueduct is at elevation 3,097 to 3,100 feet,
11 depending on location along the Aqueduct. The pump heads and the top of the wells are
12 approximately 5 feet higher, depending on location. Each pump is set so that it comes on when
13 the depth to water in the well is at 9' 10" or shallower and shuts off when the water level in the
14 well is 14 feet or deeper. Therefore, the pumps in the wells must lift the water between
15 approximately 12 and 16 feet to the ground surface (top of the well head) and then through 10 to
16 15 feet of discharge pipe. The pump curve for the pumps indicates for an impeller trim of 5-5/16
17 inches, a pumping rate of approximately 460 gallons per minute (gpm) for a lift of 15 feet, 440
18 gpm for a lift of 20 feet, and 300 gpm for a lift of 25 feet. Considering the age of the pumps, I
19 reduced the pumping rate by 5% due to wear and tear.

20 26. Considering a head loss in the discharge pipe, I estimated that the effective
21 pumping lift rate was approximately 20 feet for a discharge rate of 400 gpm per well.
22 The pumps generally operate in the fall/winter of the year and pump water in response to rising
23 groundwater levels. DWR estimates that the wells are pumped for approximately 90 days out of a
24 typical year. DWR also estimated that six of the ten pumps on average operate 5 hours per day
25 during the typical 90 day period. For an average year, I assumed that the wells pumped 90 days a
26 year for 5 hours per day. I calculated based on these estimates that the average groundwater
27 pumping from these 10 wells is approximately 199 acre-feet of water per year.

28 27. In addition, water from pumping wells 2 and 3 is used to provide water for the

1 pressure seals on the equipment at the Oso Pumping Plant. Each of the eight pressure seals' units
2 at the Oso Pumping Plant are set by flow regulators for each system. The flow regulators are
3 calibrated during annual maintenance at the facility. Based on records reviewed for 2012, it is my
4 opinion that pumping seal water use is 15.0 acre-feet per year.

5 28. Water from wells 2 and 3 is also used to meet domestic needs at both the Oso
6 Pumping Plant and the Civil Maintenance Sub Center, such as toilets, faucets, sinks, showers and
7 horse bibs. The horse bibs are used for watering two planters, two trees and cleaning off a deck
8 area. After reviewing staffing level information provided to me by DWR for 2011-2012 at the
9 Oso Pumping Plant, which was approximately 17 staff members, it is my opinion that the
10 domestic water use at the Oso Pumping Plant was approximately 0.33 acre-feet of water in the
11 years 2011-2012. After reviewing staffing level information provided to me by DWR for 2011-
12 2012 at the Civil Maintenance Sub Center, which was approximately 7 staff members, it is my
13 opinion that the domestic water use at the Civil Maintenance Sub Center in the year 2011-2012
14 was approximately 0.13 acre-feet of water per year.

15 **Alamo Power Plant**

16 29. The Alamo Power Plant uses Aqueduct water for cooling the plant's bearings and
17 motors. Mr. Laumbach has estimated this water use at approximately 1,045.52 acre-feet per year
18 in the years 2011-2012. I have reviewed the Declarations of Blaine Laumbach for the Phase IV
19 Trial and find his calculations of Aqueduct water use for cooling the Alamo Pumping Plant's
20 bearings and motors are accurate.

21 30. In addition, DWR maintains one well equipped with a submersible pump to extract
22 groundwater used as cooling water for four air compressors at the Alamo Power Plant and for
23 domestic uses at the plant. For air compressor cooling, Mr. Laumbach estimates that 1,512,387
24 gallons were used over a 25-year period. The estimate is based in part on the numbers of hours
25 that the compressors run each year multiplied by the regulated cooling water flows for the
26 compressors. Based on these estimates, the mean average water use is approximately 60,495
27 gallons/year, or 0.19 acre-feet per year for compressor cooling water use in an average year. I
28 have reviewed the Declarations of Blaine Laumbach for the Phase IV Trial and find his

1 calculations of Basin pumped water for use as cooling water for the four air compressors at the
2 Alamo Power Plant of 0.19 acre-feet per year to be accurate.

3 31. Domestic water use at the Alamo Pumping Plant is for restrooms, drinking
4 fountains, and other minor uses. Mr. Laumbach and DWR Senior Architect Dave Otto, whose
5 estimate Mr. Laumbach uses, estimate that this use is 0.09 acre-feet per year. Mr. Otto estimates
6 this based on 3 staff members present at the facility 7 days a week, because the Alamo Power
7 Plant is open and fully staffed 7 days a week. I have reviewed Mr. Laumbach and Mr. Otto's
8 estimates and they are accurate based on that staffing level.

9 **Tehachapi East Afterbay Trailers (TEA)**

10 32. Tehachapi East Afterbay Trailers (TEA) are utilized for DWR office space for
11 supervisory and maintenance crew and related office tasks. One well provides groundwater for
12 restrooms and domestic use at the TEA. Mr. Laumbach and DWR Senior Architect Dave Otto,
13 whose estimate Mr. Laumbach uses, estimate that this use is 0.05 acre-feet per year. Mr. Otto
14 estimates this based on 3 staff members present at the TEA facility 5 days a week. I have
15 reviewed Mr. Laumbach and Mr. Otto's estimates and they are accurate based on that staffing
16 level.

17 **Pearblossom Complex**

18 33. The Pearblossom Complex consists of the Pearblossom Pumping Plant and
19 Southern Field Division Headquarters buildings. The Southern Division Headquarters buildings
20 include administrative buildings and shop/maintenance buildings.

21 34. The Pearblossom Pumping Plant uses Aqueduct water for cooling the plant's
22 bearings and motors. Mr. Laumbach has calculated this water use at 2,555.26 acre-feet per year
23 for the years 2011-2012. I have reviewed the Declarations of Blaine Laumbach for the Phase IV
24 Trial and find his calculations of Aqueduct water use for cooling the Pearblossom Pumping
25 Plant's bearings and motors are accurate.

26 35. In addition, DWR purchases water from the Los Angeles County Waterworks
27 District No. 40 for providing a pressure seal to prevent Aqueduct water from leaking from around
28 the Pearblossom Pumping Plant's pump shaft. Mr. Laumbach provides a calculation of this water

1 use based on the required seal flows for each of 9 pumps. Mr. Laumbach estimates the use to be
2 approximately 35.45 acre-feet of water per year. I have reviewed the Declarations of Blaine
3 Laumbach for the Phase IV Trial and find his calculations of water use for providing a pressure
4 seal to prevent Aqueduct water from leaking from around the Pearblossom Pumping Plant's pump
5 shaft are accurate.

6 DEPARTMENT OF PARKS & RECREATION (PARKS)

7 36. In order to determine the water Parks pumped and will pump from the Basin and
8 the total water used by Parks on lands overlying the Basin, I reviewed information made available
9 by Parks, publicly available information, and the declaration of Russ Dingman and the Exhibits
10 attached thereto submitted as evidence in the Phase IV Trial in this case. I also spoke to Mr.
11 Dingman and other Parks personnel as necessary to clarify certain facts and to form my opinion
12 of Park's water use at its facilities overlying the Basin. Parks has the following facilities and
13 California State Parks in the area overlying the Basin: (1) Antelope Valley California Poppy
14 Natural Reserve; (2) Antelope Valley Indian Museum State Historic Park; (3) Arthur B. Ripley
15 Desert Woodlands State Park; and (4) Saddleback Butte State Park. **Below I calculate that at**
16 **these facilities in total Parks pumps from the Basin in the average year approximately 1.7**
17 **acre-feet of water per year. In addition, Parks purchases in the average year 6 acre-feet of**
18 **water per year from the Antelope Valley East Kern Water Agency (AVEK) in lieu of**
19 **pumping groundwater, and purchases in the average year approximately 1.9 acre-feet of**
20 **water per year from Los Angeles County Waterworks District No. 40.** The water Parks uses
21 and pumps is used for visitors and staff at the Parks facilities, for irrigation, to improve animal
22 habitat and for fire suppression. In my expert opinion, these are all reasonable and beneficial uses
23 of water.

24 Antelope Valley California Poppy Natural Reserve (Poppy Reserve)

25 37. The Poppy Reserve is a State Reserve located at 15101 Lancaster Road, Lancaster.
26 The Poppy Reserve is approximately 1,700 acres of land. I have reviewed monthly water
27 purchase records for Fiscal Years 2008 through 2012 (July 1 through June 30th) for this reserve.
28 Parks purchases and imports State Water Project water from the AVEK and treats and uses that

1 water in lieu of pumping groundwater for use at the Poppy Reserve. Treated water is used at the
2 Visitor Center, Day Use Area, Maintenance/Resource Yard and the Tehachapi District office.
3 Untreated water is used to irrigate native vegetation, planting, improve animal habitat and fire
4 suppression for control burns within the Poppy Reserve. In addition, water purchased from
5 AVEK is trucked from the Poppy Reserve to the Arthur B. Ripley Woodlands State Park as
6 discussed below.

7 38. For Fiscal Years 2010 through 2012 (July 1 through June 30th) the amount of
8 water purchased from AVEK for the Poppy Reserve and the Arthur B. Ripley Woodlands State
9 Park was as follows:

- 10 (1) 2010 6.0 acre-feet,
11 (2) 2011-6.0 acre-feet;
12 (3) Jan-November 2012-5.5 acre-feet.

13 39. Based on the records provided regarding historical water purchases for the Poppy
14 Reserve and the type of use, it is my opinion that the average year water use at the Poppy Reserve
15 is 5.5 acre-feet per year.

16 **Antelope Valley Indian Museum State Historic Park (Indian Museum)**

17 40. The Indian Museum is a State Historic Park located at 15701 East Avenue M,
18 Lancaster. The Indian Museum is approximately 250 acres of land. Parks pumps groundwater
19 from one metered well on site at the Indian Museum and treats a portion of it. The well is
20 metered with both an electrical power meter and a water flow meter. The treated water is used at
21 the museum itself, the day use area outside the museum, the maintenance yard, and the Parks
22 Mojave Sector office. Untreated water is used to irrigate native vegetation and improve animal
23 habitat within the Indian Museum Park area.

24 41. The total amount of groundwater pumped at the Indian Museum from 2007-2012,
25 excluding 2009 for which we could not find records, is as follows:

- 26 (1) 2008 1.93 acre-feet;
27 (2) 2010-1.50 acre-feet May-December;
28 (3) 2011-1.59 acre-feet;

1 (4) Jan- November 2012 -1.30 acre-feet.

2 42. Based on the water meter records from years 2008 through 2012 that I reviewed
3 and the type of use, it is my opinion that a reasonable annual water use for the Indian Museum is
4 1.7 acre-feet per year.

5 **Arthur B. Ripley Desert Woodlands State Park (Desert Woodlands)**

6 43. The Desert Woodlands is a State Park located west of Lancaster on west
7 Avenue F. The Desert Woodlands is approximately 566 acres of land. Untreated water
8 purchased from AVEK for the Poppy Reserve is intermittently used at Ripley State Park to
9 irrigate native vegetation, planting, and to improve animal habitat within Ripley State Park. The
10 park features a picnic table and self-guided nature trail, and has a pit toilet. There is no running
11 water available at this location for the public. Water use is estimated at approximately 0.5 acre-
12 feet per year. This would equal approximately 450 gallons per day water use on average
13 throughout a year. From July 2010 through June 2011, there were 505 visitors to the park. From
14 July 2011 through June 2012, there were 605 visitors to the park. Considering the nature of the
15 facilities at the park and the relatively low number of visitors annually, my opinion is that the
16 stated water use/purchases of 0.5 acre-feet per year are reasonable. Together with the Poppy
17 Reserve, Parks purchases and uses 6.0 acre-feet of water per year from AVEK.

18 **Saddleback Butte State Park (Saddleback Butte)**

19 44. Saddleback Butte is a State Park located at 172nd Street, Lancaster. Saddleback
20 Butte is approximately 2,955 acres of land. Parks and Recreation currently purchases water from
21 Los Angeles County Waterworks District 40 for use at Saddleback Butte. The purchased, treated
22 water is used at the Visitor Center, day use area, campground and maintenance yard. The
23 purchased water is also used for domestic purposes for the visitors of Saddleback Butte. The total
24 amount of water purchased from Los Angeles County Waterworks District 40 at the Saddleback
25 Butte from 2006-2012 is as follows:

26 (1) 2006- 4.57 acre-feet;

27 (2) 2007- 4.04 acre-feet;

28 (3) 2008- 1.29 acre-feet;

- 1 (4) 2009- 1.36 acre-feet;
- 2 (5) 2010- 1.01 acre-feet;
- 3 (6) 2011- 0.49 acre-feet;
- 4 (7) 2012- 0.41 acre-feet. January through September.

5 45. The mean average amount of water purchased for the six-year period of 2006
6 through 2012 is 1.91 acre-feet per year. After reviewing the historical water purchase records
7 from 2006 to 2012 and visitor estimates, it is my opinion that the reasonable long-term average
8 water use is approximately 1.9 acre-feet per year at Saddleback Butte.

9 **CALIFORNIA HIGHWAY PATROL (CHP)**

10 46. In order to determine the water CHP used on lands overlying the Basin, I reviewed
11 information made available by CHP, publicly available information, and the declaration of
12 Captain Andria D. Witmer and the Exhibits attached thereto submitted as evidence in the Phase
13 IV Trial in this case. I also spoke to Sergeant Bryon Robinson who is knowledgeable of the
14 facilities in the Antelope Valley and other CHP personnel as necessary to clarify certain facts and
15 to form my opinion of CHP's water use at its facilities overlying the Basin. CHP has the
16 following facilities overlying the Basin: CHP has an office/precinct at 2014 West Avenue I,
17 Lancaster. CHP's office is 1.36 acres and has no wells on it. CHP has purchased water from Los
18 Angeles County Waterworks District 40 since occupying the site in 1975. The purchased water is
19 for domestic use (toilets, bathrooms), janitorial, landscaping, and an evaporative cooler. In my
20 expert opinion, these are all reasonable and beneficial uses of water. The total amount of water
21 purchased from Los Angeles County Waterworks District 40 at the CHP precinct from 2009-2012
22 is as follows:

- 23 (1) 2009- 0.30 acre-feet;
- 24 (2) 2010- 1.64 acre-feet;
- 25 (3) 2011- 0.87 acre-feet;
- 26 (4) 2012- 0.43 acre-feet.

27 47. I have reviewed the water purchase records from LA County Waterworks that
28 were provided by the CHP for the period January 7, 2008 through November 6, 2012. I also

1 reviewed water use information provided by CHP officer Bryon E. Robinson. Based on this
2 review, I determined that the mean average water purchase for the period 2009 through 2012 is
3 0.81 acre-feet of water per year. After reviewing the historical water purchase records from 2009
4 to 2012 and the number of personnel using the facility on average, it is my opinion that the
5 reasonable long-term average water use is approximately 0.81 acre-feet per year at this facility.

6 **CALIFORNIA DEPARTMENT OF MILITARY (MILITARY)**

7 48. In order to determine the water MILITARY used on lands overlying the Basin, I
8 reviewed information made available by MILITARY, publicly available information, and the
9 declaration of Major Lorren Deakin and the Exhibits attached thereto submitted as evidence in the
10 Phase IV Trial in this case. MILITARY has the following facilities overlying the Basin: The
11 Lancaster Armory located at 47002 25th street west, Lancaster. This property is 28.54 acres in
12 area. MILITARY has purchased and currently purchases water from Los Angeles County
13 Waterworks District 40. The purchased water is for domestic use (toilets, bathrooms), janitorial,
14 and fire protection. In my expert opinion, these are all reasonable and beneficial uses of water.
15 The total amount of water purchased from Los Angeles County Waterworks District 40 at the
16 MILITARY Lancaster Armory from 2008-2012 is as follows:

- 17 (1) 2008 - 0.47 acre-feet;
18 (2) 2009- 0.40 acre-feet;
19 (3) 2010- 0.08 acre-feet;
20 (4) 2011- 0.05 acre-feet;
21 (5) 2012- 0.06 acre-feet;
22 (6) 2013- 0.50 acre-feet.

23 49. I have reviewed the water purchase records from LA County Waterworks that
24 were provided by the MILITARY for the period January 2008 through December 2013. I also
25 reviewed water use information provided by MILITARY Legal Administrator Andrew
26 Vancannon. Based on this review, I determined that the years 2010-2012 were deployment years
27 and therefore have very low water use at the Armory. I also determined that the mean average
28 water purchase for "normal" years at the Armory such as 2008, 2009 and 2013 is 0.46 acre-feet of

1 water per year. After reviewing the historical water purchase records from 2008 to 2013 and the
2 number of personnel using the facility on average, it is my opinion that the reasonable long-term
3 average water use is approximately 0.46 acre-feet per year at this facility.

4 **CALIFORNIA DEPARTMENT OF CORRECTIONS AND REHABILITATION (CDCR)**

5 50. In order to determine the water CDCR used on lands overlying the Basin, I
6 reviewed information made available by CDCR, publicly available information, and the
7 declaration of Daniel Robbins and the Exhibits attached thereto submitted as evidence in the
8 Phase IV Trial in this case. CDCR has the following facilities overlying the Basin: The
9 California State Prison - Lancaster (State Prison) located at 44750 60th Street West, Lancaster.
10 The State Prison is approximately 261.74 acres and has three inactive wells on it. CDCR has
11 purchased and currently purchases water from Los Angeles County Waterworks District 40. The
12 water is used for housing the inmates (including laundry plant, infirmary, dental, and vocational),
13 fire protection, irrigation, and for guards and other support staff. In my expert opinion, these are
14 all reasonable and beneficial uses of water. Water use varies in relation to the number of inmates
15 at the facility. In 2014 there were approximately 3,550 inmates and 1,010 staff. The total amount
16 of water purchased from Los Angeles County Waterworks District 40 at the California State
17 Prison – Lancaster from 2000-2004 and 2011-2012 is as follows:

- 18 (1) 2000- 890 acre-feet;
19 (2) 2001- 927 acre-feet;
20 (3) 2002- 905 acre-feet;
21 (4) 2003- 889.97 acre-feet;
22 (5) 2004- 927.69 acre-feet;
23 (6) 2011- 638.25 acre-feet;
24 (7) 2012- 664 acre-feet.

25 51. I have reviewed the water purchase records from LA County Waterworks that
26 were provided by the CDCR for the period 2000 through 2012. Based on this review, I
27 determined that the mean average water use for the State Prison is 833 acre-feet of water per year.
28 After reviewing the historical water purchase records from 2000 to 2012 and the number of

1 prisoners and personnel using the facility on average, it is my opinion that the reasonable long-
2 term average water use is approximately 833 acre-feet per year at this facility.

3 **CALIFORNIA DEPARTMENT OF VETERANS AFFAIRS (Veterans)**

4 52. In order to determine the water Veterans used on lands overlying the Basin, I
5 reviewed information made available by Veterans, publicly available information, and the
6 declaration of David Gerard and the Exhibits attached thereto submitted as evidence in the Phase
7 IV Trial in this case. Veterans has the following facility overlying the Basin: The William J.
8 "Pete" Knight Veterans Home of California-Lancaster (Veterans Home) located at 45221 30th
9 Street West, Lancaster. The Veterans Home is located on approximately 22.44 acres. Veterans
10 has purchased and currently purchases water from Los Angeles County Waterworks District 40.
11 The purchased water is for domestic use (toilets, bathrooms), janitorial, and fire protection. In my
12 expert opinion, these are all reasonable and beneficial uses of water. The total amount of water
13 purchased from Los Angeles County Waterworks District 40 at the Veterans Home from 2010-
14 2012 is as follows:

- 15 (1) 2010- 28.37 acre-feet;
16 (2) 2011- 20.75 acre-feet;
17 (3) 2012- 25.12 acre-feet.

18 53. I have reviewed the water purchase records from LA County Waterworks that
19 were provided by Veterans for the period 2010 through 2012. The water use from 2010 to 2012
20 was not when the Veterans Home was at full capacity. The Veterans Home expects to be at full
21 capacity in the near future and will likely increase from the current 47 residents to 107 residents
22 and a commensurate increase in staff. Based on my review, I determined that the mean average
23 water use for the Veterans Home was 24.75 acre-feet of water per year for the years 2010-2012,
24 but will increase to 47.31 acre-feet at full capacity. After reviewing the historical water purchase
25 records from 2010 to 2012 and calculating the total of current residents and future residents and
26 staff using the facility on average, it is my opinion that the reasonable long-term average water
27 use is approximately 47.31 acre-feet per year at the Veterans Home.

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1 **CALIFORNIA 50TH DISTRICT AGRICULTURAL ASSOCIATION (DAA)**

2 54. In order to determine the water DAA used on lands overlying the Basin, I
3 reviewed information made available by DAA, publicly available information, and the declaration
4 of Daniel Jacobs and the Exhibits attached thereto submitted as evidence in the Phase IV Trial in
5 this case. DAA has the following facility overlying the Basin: The Antelope Valley Fairgrounds
6 (Fairgrounds) located at 2551 West Avenue H, Lancaster. The Fairgrounds are located on
7 approximately 135.38 acres. DAA has purchased water from Los Angeles County Waterworks
8 District 40 since occupying the site in 2003. The purchased water is for domestic use, use at the
9 Fairgrounds, year round irrigation, fire protection and dust control. In my opinion, these are all
10 reasonable and beneficial uses of water.

11 55. I reviewed water purchase records and attendance records for this facility. The
12 135-acre area includes an updated, 7,000-seat grandstand, two modern exhibit hall buildings, a
13 satellite horse racing wagering facility and a Recreational Vehicle support center and the fair has
14 drawn upwards of 244,000 attendees. The total amount of water purchased from Los Angeles
15 County Waterworks District 40 at the Fairgrounds from 2008-2013 is as follows:

- 16 (1) 2008- 61.41 acre-feet;
17 (2) 2009- 43.17 acre-feet;
18 (3) 2010- 44.77 acre-feet;
19 (4) 2011- 43.59 acre-feet;
20 (5) 2012- 51.09 acre-feet;
21 (6) 2013- 55.60 acre-feet.

22 56. Based on my review of water purchase records and attendance records for the
23 Fairgrounds, I determined that the mean average water use at the Fairgrounds is approximately
24 49.49 acre-feet per year. After reviewing the historical water purchase records from 2008 to 2013
25 and the visitor attendance records for the Fairgrounds, it is also my opinion that the reasonable
26 long-term water use given population increases and expected attendee increases is 61.4 acre-feet
27 per year at this Fairgrounds.
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57. In summary, the state agencies discussed above pumped approximately 238.13 acre-feet of water during the years 2000, 2002, 2003 and 2011-2012. In the wet years 2001 and 2004 the state agencies pumped approximately 278.13 acre-feet of water. By the year 2040, the total amount pumped will be approximately 286.25 acre-feet of water in a wet year and 246.25 acre-feet of water in a typical year. In addition, the state agencies used more than 5,000 acre-feet of water in the years 2000-2004 and 2011-2012, far in excess of the total amount allocated to the State of California and each state agency under the Proposed Judgment lodged with the Court on March 4, 2015.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed on September 25, 2015, at Irvine, California.



W. GREG HAMER

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CERTIFICATE OF SERVICE

Case Name: **Antelope Valley Groundwater** No. **JCCP 4408**
Cases

I hereby certify that on September 25, 2015, I electronically served the following document(s) with the Clerk of the Court by using the CM/ECF system:

DECLARATION OF W. GREG HAMER IN SUPPORT OF STATE OF CALIFORNIA FOR PHASE VI TRIAL

on the interested parties in this action, by posting the document(s) listed above to the Santa Clara County Superior Court e-filing website (<http://www.scefiling.org>) under the Antelope Valley Groundwater matter pursuant to the Court's Order dated October 27, 2005.

I declare under penalty of perjury under the laws of the State of California the foregoing is true and correct and that this declaration was executed on September 25, 2015, at Los Angeles, California.

Gwen Blanchard

Declarant

Gwen Blanchard

Signature