1 2 3 4 5 6 7 8 9 10		EXEMPT FROM FILING FEES [Gov. Code, § 6103] HE STATE OF CALIFORNIA LOS ANGELES
12 13 14 15 16 17 18 19 20 21 22 23 24 25 26	Coordination Proceeding Special Title (Rule 3.550(c)) 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 325 201 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, consolidated Actions, Case Nos. RIC 353 840, RIC 344 436, RIC 344 668 AND RELATED ACTIONS.	Judicial Council Coordination Proceeding No. 4408 Santa Clara Case No. 1-05-CV-049053 DECLARATION OF BLAINE LAUMBACH ON BEHALF OF STATE OF CALIFORNIA, DEPARTMENT OF WATER RESOURCES PURSUANT TO CASE MANAGEMENT ORDER FOR PHASE IV TRIAL [Assigned for All Purposes to the Honorable Jack Komar] Trial Date: May 28, 2013 OSC re: Approval of Stipulations: March 15, 2013 Time: 9:00 a.m. Dept: 1 Action Filed: October 26, 2005
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I, BLAINE LAUMBACH, declare as follows:

- 1. I have been employed by the Department of Water Resources (DWR) Southern Field Division, an agency of the State of California, one of the parties hereto, for more than thirty-three years. Currently, I am a Hydroelectric Plant Operations Superintendent. Since 2010, my duties in this position have included budgeting, planning, directing, organizing and controlling the Operations Branch and operational activities of facilities supplying water and/or power to various State Water Project (SWP) contractors in and out of the Southern Field Division. I am authorized to make this declaration for and on behalf of the DWR. If called as a witness, I could and would competently testify to each fact herein.
- 2. I have held other positions with Southern Field Division. Between 2004 and 2010, I was Southern Field Division's Chief Hydroelectric Plant Operator, responsible for supervising the daily operations of the Southern California Area Control Center, Alamo Power Plant, Oso Pumping Plant and William E. Warne Power Plant.
- 3. I have held a number of other positions during my tenure with DWR. In my various positions, I have become extremely familiar with Southern Field Division's equipment and operations, including Southern Field Division's use of water. A true and correct copy of my resume is attached to this declaration as Exhibit A.
- 4. <u>SWP Overview</u>. The SWP is a water storage and delivery system of reservoirs, aqueducts, power plants and pumping plants. Its main purpose is to store water and distribute it to 29 urban and agricultural water suppliers in Northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and Southern California. Of the contracted water supply, 70 percent goes to urban users and 30 percent goes to agricultural users. SWP makes deliveries to two-thirds of California's population. It is maintained and operated by DWR.
- 5. <u>SWP Size</u>. Today, the SWP includes 34 storage facilities, reservoirs and lakes; 20 pumping plants; four pumping-generating plants; five hydroelectric power plants; and about 701 miles of open canals and pipelines. The SWP provides supplemental water to approximately 25 million Californians and about 750,000 acres of irrigated farmland.
 - 6. Southern Field Division manages the largest section of the SWP, serving eastern

Kern County and the Los Angeles, Riverside and San Bernardino areas. To bring water to the growth centers of Southern California, it operates two pumping plants, three power plants and five reservoirs. It also maintains 178 miles of the California Aqueduct (Aqueduct), the SWP's 444-mile concrete artery. After crossing the Tehachapi Mountains, the Aqueduct enters the Southern Field Division at the Carley V. Porter Tunnel near Gorman and divides into two branches. The West Branch serves Los Angeles and other coastal cities. The East Branch flows through the Antelope Valley and San Bernardino and Riverside Counties.

- 7. Southern Field Division has several facilities utilizing water within the Antelope Valley Adjudication Area. These facilities include the Pearblossom complex, the Oso complex, Alamo power plant, and Tehachapi East Afterbay trailers (the TEA trailers).
- 8. <u>Pearblossom Complex</u>. The Pearblossom Complex consists of parcels 3-1228-I and II, 3-1229 (2 parcels) and 3-1230, which are the Pearblossom Pumping Plant and Southern Field Division headquarters buildings, which include administrative buildings and shop/maintenance buildings. An aerial view of these facilities is shown in Exhibit B.
- 9. A schematic of Pearblossom Complex prepared by DWR's Division of Land and Right of Way showing property parcel numbers is provided on Exhibit C, attached hereto.
- 10. A true and correct copy of the grant deed for parcels 3-1228-I and 3-1228-II is attached hereto as Exhibit D.
- 11. A true and correct copy of the grant deed for parcels 3-1229 (Parcel 1) and 3-1229 (Parcel 2) are attached hereto as Exhibit E.
- 12. A true and correct copy of the grant deed for parcel 3-1230 is attached hereto as Exhibit F.
- 13. Oso Complex. The Oso complex consists of Oso Pumping Plant, Oso civil maintenance subcenter, and thirteen groundwater pumps used to protect the liner of the Aqueduct. An aerial view of these facilities is attached hereto as Exhibit G. A schematic of Oso Complex prepared by DWR's Division of Land and Right of Way is provided on Exhibit H, attached hereto. The Oso Complex comprises one parcel, identified as TEH-1 Unit N.

WATER USE AT PEARBLOSSOM COMPLEX

- 25. <u>Pearblossom Pumping Plant cooling water</u>. Pearblossom Pumping Plant pumps water from elevation 2939 to elevation 3478. DWR utilizes water from the Aqueduct to cool bearings and motors at the Pearblossom pumps.
- 26. The water used per year for this purpose is not metered. I have calculated the amount used to be approximately 2,555.26 acre feet per year.
- 27. My calculations for this estimate are provided below in the Table entitled "PB Unit Cooling Flows" and also in Exhibit K, attached hereto.

PB Unit Co	ooling Flows	Total	2555.26
UNIT	GPM	Hrs	AF/YR
1	375.50	2166.80	149.95
2	375.50	2636.10	182.43
3	273.40	4280.50	215.68
4	273.40	4906.00	247.20
5	320.50	5171.80	305.48
6	320.50	4566.30	269.72
7	560.00	4436.70	457.90
8	560.00	3817.60	394.00
9	560.00	3225.60	332.90

- 28. The first column of the above table shows the number of the individual pump, or "unit" at the Pearblossom Plant. There are three different types of units there. Pumps 1, 2, 5, and 6 have the capacity to pump 290 cubic feet per second (cfs). Pumps 3 and 4 have the capacity to pump 145 cfs. Pumps 7, 8 and 9 are new units, and have the capacity to pump 390 cfs.
- 29. The second column of the above table shows the measured flow rate in gallons per minute.
- 30. The third column shows the hours of operation of each of the pumps for calendar year 2012. DWR's enterprise software program, SAP, tracks the start and stop times of these units, so this number is readily available.
 - 31. With this information I am able to determine the acre feet per year for each pump.

- 32. <u>Pearblossom Pumping Plant seal water.</u> DWR purchases water from Los Angeles County Waterworks District 40, and places it in a storage tank. This water is utilized to create a pressure seal to prevent Aqueduct water from leaking around the pumping plant's shaft.
 - 33. I have calculated the amount used to be approximately 35.45 acre-feet per year.
- 34. My calculations for this estimate are provided below in the Table entitled "PB Unit Seal Flows" and also in Exhibit K, attached hereto.

PB Unit Se	eal Flows	Total	35.45
UNIT	GPM	Hrs	AF/YR
1	6.50	2166.80	2.60
2	6.50	2636.10	3.16
3	3.50	4280.50	2.76
4	3.50	4906.00	3.16
5	6.50	5171.80	6.20
6	6.50	4566.30	5.47
7 **	2.50	8760.00	4.04
8 **	2.50	8760.00	4.04
9 **	2.50	8760.00	4.04

- 35. This table is interpreted the same way as the previous table and the information was obtained in the same manner.
- 36. <u>Southern Field Division headquarters buildings and Pearblossom Pumping Plant</u> domestic use. Domestic use for water in these facilities includes toilets, faucets, sinks, showers and hose bibs. Landscape uses were not estimated.
- 37. DWR has calculated that 1.32 acre feet per year is currently utilized for the above domestic uses.
- 38. I have relied for all estimates of domestic use in this declaration on estimates provided by staff from DWR's Division of Engineering, specifically, the work of Senior Architect Dave Otto in the Division of Engineering's Civil Engineering Branch.
 - 39. Mr. Otto estimated the following:
 - a) Pearblossom Pumping Plant: .25 acre feet per year
 - b) Southern Field Division Headquarters: 1.07 acre feet per year

- 40. Pearblossom Complex subtotal:
 - 1) DWR pumps no groundwater at this location.
 - 2) Total water purchased from Los Angeles County is 36.77 acre feet per year.
 - 3) Imported Aqueduct water utilized in lieu of pumping groundwater by facilities is 2555.26 acre-feet per year.

WATER USE AT OSO COMPLEX

- 41. Aqueduct Liner Protection. The Aqueduct is concrete lined. When groundwater levels rise above the level of the canal bed, uplift pressure is placed upon the canal, which can lead to lining failure. To address the danger to the Aqueduct liner, DWR has installed 13 pumps along the Aqueduct in the vicinity of Oso Pumping Plant to maintain the Aqueduct by dewatering the aquifer beneath the canal during high groundwater levels. I am unaware of any other method to address the danger the high groundwater levels present to the Aqueduct. For as long as I have worked in Southern Field Division, DWR has maintained these pumps and utilized them during the year.
- 42. Pumps 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13 (collectively, the automatic pumps) are programmed to operate automatically when groundwater levels reach a certain level. When the automatic pumps operate, they extract the adjacent groundwater and divert it directly into the Aqueduct. For the liner to be protected, this water cannot be placed back into the basin at this site.
- 43. Pumps numbered 2 and 3 operate continuously and support facilities in the Oso complex as described below.
- 44. Pump 1 is currently inoperable and I have not included pump 1 into my water use calculations.
- 45. I have calculated the water pumped at the <u>automatic pumps</u> to be 38.28 acre feet per year.

46. My calculations to support this estimate are provided in the table below, and in Exhibit K attached hereto.

OS Liner Relief Pumps

#	GPM	Hrs	days	duty cycle	AF/YR
4	100	5	90	0.46	3.83
5	100	5	90	0.46	3.83
6	100	5	90	0.46	3.83
7	100	5	90	0.46	3.83
8	100	5	90	0.46	3.83
9	100	5	90	0.46	3.83
10	100	5	90	0.46	3.83
11	100	5	90	0.46	3.83
12	100	5	90	0.46	3.83
13	100	5	90	0.46	3.83
				total	38.28

47. In the above table, the "#" column indicates the pump number. The "GPM" column indicates an estimate of the gallons per minute pumped by each unit. Although the rated capacity for each of these pumps is 300 gpm, they have been in place for many years and in my opinion are on the low end of their respective pump performance curves. My estimate of 100 gpm for each of the pumps, one-third of the rated capacity, makes an allowance for the age and low performance of these pumps.

- 48. I obtained the next three columns, "Hrs", "Days", and "duty cycle" from the Declaration of Ray Ramirez, which was previously filed in the Antelope Adjudication proceedings, and which I have reviewed in preparing the estimates in this document. Mr. Ramirez noted that in his experience, the automatic pumps operated five hours per day, approximately ninety days out of the year. I have included these estimates in the above table. Mr. Ramirez also conservatively estimated that on average six pumps ran at one time during operating periods. I have included this estimate in the "duty cycle" column of the above table (six divided by 13 is .46.)
- 49. Using this information, I am able to calculate the acre feet per year used by the automatic pumps.

- 50. Oso Pumping Plant Seal Water. Oso Pumping Plant pumps water from elevation 3099 to elevation 3325. At the plant, water is utilized from groundwater pumps 2 and 3 to create the "pressure seal," described above in the Pearblossom Pumping Plant discussion.
- 51. I have calculated that approximately 14.97 acre-feet per year is pumped from wells 2 and 3 for this purpose.
- 52. My calculations to support this estimate are provided in the table "Oso Unit Seal Flows" below, and in Exhibit K attached hereto.

OS Unit S	eal Flows	Total	14.97
UNIT	GPM	Hrs	AF/YR
1	6.5	2982.20	3.57
2	6.5	3633.90	4.35
3	3.5	392.30	0.25
4	3.5	172.00	0.11
5	3.5	64.30	0.04
6	3.5	203.00	0.13
7	6.5	3117.90	3.74
8	6.5	2311.10	2.77

- 53. The first column of the above table shows the number of the individual pump, or "unit" at the Oso Pumping Plant.
- 54. The second column of the above table shows the measured flow rate in gallons per minute.
- 55. The third column shows the hours of operation of each of the pumps for calendar year 2012. This figure was obtained from DWR's enterprise software program, SAP, which tracks the start and stop times of these units.
- 56. Using this information, I am able to calculate the acre feet per year used for the pressure seals.
- 57. Oso Pumping Plant Cooling Water. Like Pearblossom Pumping Plant, the plant at Oso cools its bearings and motors with imported Aqueduct water.
 - 58. I have calculated the amount used to be approximately 520.12 acre feet per year.

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59. My calculations for this estimate are provided below in the Table entitled "Oso Unit Cooling Flows" and also in Exhibit K, attached hereto.

OS Unit Co	oling Flows	total	520.12
UNIT	GPM	Hrs	AF/YR
1	225.5	2982.20	123.94
2	225.5	3633.90	151.02
3	127.5	392.30	9.22
4	127.5	172.00	4.04
5	127.5	64.30	1.51
6	127.5	203.00	4.77
7	225.5	3117.90	129.58
8	225.5	2311.10	96.05

- 60. The first column of the above table shows the number of the individual pump, or "unit" at the Oso Plant. There are two different types of units there. Pumps 1, 2, 7, and 8 have the capacity to pump 645 cfs. Pumps 3, 4, 5 and 6 have the capacity to pump 168 cfs, one-fourth the capacity of the other pumps.
- 61. The second column of the above table shows the measured flow rate in gallons per minute.
- 62. The third column shows the hours of operation of each of the pumps for calendar year 2012. DWR's enterprise software program, SAP, tracks the start and stop times of these units, so this number is readily available.
- 63. Using this information, I am able to calculate the acre feet per year used for cooling the bearings.
- 64. Oso Pumping Plant and Oso Civil Maintenance Subcenter domestic use. Water from pumps 2 and 3 is also utilized within Oso Pumping Plant for domestic use, including toilets, faucets, sinks, showers, and hose bibbs. Water from pumps 2 and 3 is also piped to Oso's Civil Maintenance Subcenter, and provides all the Subcenter's domestic needs.
- 65. DWR calculates water used for domestic purposes at Oso Pumping Plant to be .33 acre feet per year, and water used at the Oso Civil Maintenance Subcenter to be .13 acre-feet per year, for a total of .46 acre-feet per year.

- 66. I have relied for all estimates of domestic use in this declaration on estimates provided by staff from DWR's Division of Engineering, specifically, the work of Senior Architect Dave Otto in the Division of Engineering's Civil Engineering Branch.
 - 67. Mr. Otto estimated the following:
 - a) Oso Pumping Plant: .33 acre feet per year
 - b) Oso Civil Maintenance Subcenter: .13 acre feet per year.
 - 68. Oso Complex subtotal:
 - 1) Total groundwater used is 15.43 acre feet per year.
 - 2) Imported Aqueduct water utilized is 520.12 acre-feet per year.

WATER USE AT THE ALAMO POWER PLANT

- 69. <u>Seals</u>. Aqueduct water is utilized at Alamo Power Plant for generator and bearing cooling. In addition, Aqueduct water is also used as a pressure seal for the Alamo Power Plant's turbine shaft.
- 70. I calculated that approximately 1045.52 acre feet per year is used for the above purposes.
 - 71. My calculations to support this estimate are provided below.

AL Unit Gen Cooling & Seal flows

UNIT	GPM	Hrs	AF/YR	
1	679.5	8348.80	1045.52	2

ALAMO CW Flow	
AIR COOLER FLOW 550-595gpm	572.50
Upper Guide60-80gpm	70.00
Lower Guide6-8gpm	7.00
Seal Flow30gpm	30.00

subtotal 679.50 gpm

72. There is no one meter measuring total gallons per minute used for Cooling and Seal flows. However, flows are recorded by hand at least daily for Alamo Power Plant's Air

Cooler, Upper Guide, Lower Guide and Seal. The records of these flows are maintained at the Power Plant. Records for the Air Cooler showed flows during 2011 ranging from a low of 550 gpm to a peak of 595 gpm. For the purpose of this exercise, estimating total water used, I took the median of each range, and summed each median. Note that the Seal flow is a constant flow, and there was no median. The result of this calculation is shown above, 679.50 gpm.

- 73. The total hours the Power Plant has been in operation is available on DWR's enterprise accounting system, SAP. I included this number in the table above.
- 74. Using this information, I am able to calculate the acre feet per year used for cooling the bearings and for seal flow.
- 75. <u>Cooling and Domestic Use</u>. DWR maintains one submersible groundwater pump located adjacent to the Alamo Power Plant's afterbay. It is used for two purposes. First, it is used as cooling water for four air compressors at the plant; and, second, for domestic use at the plant.
- 76. <u>Alamo Power Plant Compressor Cooling</u>. I have calculated the amount used for cooling to be approximately .2 acre-feet per year. My calculations for this estimate are provided below in the table entitled "AL Well Flows" and also in Exhibit K, attached hereto.

AL Well Flows compressors gallons Years AF/YR 4 1,512,387 25 0.20

- 77. <u>Domestic use</u>. Groundwater is utilized for domestic use at Alamo Power Plant for restrooms and drinking fountains, among other minor uses.
- 78. Senior Architect Dave Otto in DWR's Civil Engineering Branch, Division of Engineering calculates water used for domestic purposes at Alamo Power Plant to be .09 acre feet per year.
 - 79. <u>Alamo Powerplant subtotal</u>:
 - 1) Total groundwater used is .29 acre-feet per year.
 - 2) Imported Aqueduct water used is 1,045.52 acre-feet per year.

WATER USE AT THE TEA TRAILERS

- 80. One submersible type pump is located near the TEA trailers, and provides water for domestic use there. Senior Architect Dave Otto in DWR's Civil Engineering Branch, Division of Engineering calculates water used for domestic purposes at the TEA trailers to be .05 acre feet per year.
- 81. DWR lists its water purchased and imported in lieu of pumping and maintains it has a right to pump that water from the Antelope Valley Adjudication Area as an overlier, but has chosen to purchase the water in order to preserve the aquifer of an overdrafted basin.
- 82. DWR is also claiming future unexercised rights to water in the Antelope Valley Adjudication Area for public benefit uses.
 - 83. DWR is not claiming return flow credits.

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

Executed this 31st day of January, 2013, at Pearblossom, California.

BLAINE LAUMBACH

Slavie Landon