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*Antelope Valley Groundwater Cases
United States' Phase II Trial Brief*

1 SUPERIOR COURT OF THE STATE OF CALIFORNIA

2 COUNTY OF LOS ANGELES

3 Coordination Proceeding
Special Title (Rule 1550(b))

) Judicial Council Coordination

) Proceeding No. 4408

4 ANTELOPE VALLEY GROUNDWATER
5 CASES

6 Included actions:

7 Los Angeles County Waterworks District No. 40 v.
Diamond Farming Co., et al.

) UNITED STATES' TRIAL BRIEF

8 Los Angeles County Superior Court, Case No. BC
325 201

9 Los Angeles County Waterworks District No. 40 v.
10 Diamond Farming Co., et al.

11 Kern County Superior Court, Case No. S-1500-CV-
254-348

12 Wm. Bolthouse Farms, Inc. v. City of Lancaster
Diamond Farming Co. v. City of Lancaster
13 Diamond Farming Co. v. Palmdale Water District
14 Riverside County Superior Court, Consolidated
Action, Case nos. RIC 353 840, RIC 344 436, RIC
344 668

) Phase 2 Trial
) October 6, 2008
) Department 1
) L.A. County Superior Court

15 AND RELATED CROSS ACTIONS)
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27 *Antelope Valley Groundwater Cases*
28 *United States' Phase II Trial Brief*

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1 Cross-Defendant United States of America respectfully submits this Trial Brief in advance
2 of the Phase 2 trial proceedings scheduled to begin in this matter on October 6, 2008. Because the
3 evidence in the record currently before the Court, and the evidence that the parties will present at
4 trial, demonstrates that the area of adjudication functions as a singular, interdependent
5 hydrogeologic unit, and because the extraction of groundwater from any area within the
6 jurisdictional boundaries that the Court established in Phase 1 of this case will impact the aquifer
7 that is the subject of this adjudication, the Court should decline to designate any geographical area
8 within the jurisdictional boundaries as a sub-basin or to exclude any area from the adjudication
9 process.

10 **I. BACKGROUND.**

11 The Antelope Valley consists of a wedge-shaped depression situated between the San
12 Andreas and Garlock fault zones in South-Central California. The Tehachapi Mountains, Rosamond
13 Hills, and Bissell Hills border the Valley on the northwest and north; the San Gabriel Mountains
14 border the Valley on the south and southwest; low hills and divides separate the Antelope Valley
15 from the upper Mojave, Harper, and Fremont valleys to the east.

16 In Phase 1 of this litigation, the Court concluded that “the alluvial basin as described in
17 California Department of Water Resources Bulletin 118-2003 should be the basic jurisdictional
18 boundary for purposes of this litigation.” Order After Hearing on Jurisdictional Boundaries at 4,
19 filed Nov. 8, 2006 (“Phase 1 Order”). The resulting Antelope Valley Area of Adjudication
20 (“AVAA”) is characterized generally by water-bearing, mostly-consolidated alluvium and other
21 unconsolidated deposits containing sufficient water for consumptive and other economic use.
22 Although the AVAA functions hydrologically as a single basin, a question remains whether faults
23 or other structural geologic features can be used to demarcate regions or sub-areas within the
24 adjudication area.

25 The relief sought in this coordinated case is the comprehensive adjudication of all the parties’
26 claims to groundwater rights within the AVAA. All overlying landowners within the geographical

1 boundaries of the adjudication area (parties with correlative rights), parties who produce water from
2 the aquifer that the Court identified as the common source of groundwater in the jurisdictional area
3 (parties with appropriative rights), and the United States (as owner of federal reserved water rights)
4 are necessary parties to this action. *See id.* at 2. The United States remains a party to this litigation,
5 because the Court decided that the adjudication, as currently structured, will be a comprehensive
6 adjudication of all rights to groundwater in the aquifer. *See* 43 U.S.C. § 666(a); Phase 1 Order at
7 2, 4 (“These boundaries are established for purposes of ensuring that the most reasonably inclusive
8 boundaries will be used to ensure a complete and final adjudication of rights to the ground water.”).
9 The Court has instructed the parties that “[t]he Phase 2 trial will address whether sub-basins exist
10 in the Antelope Valley Area of Adjudication (“Basin”).” Case Management Order for Phase 2 Trial
11 ¶ 2, at 1, filed Sept. 9, 2008.

12 **II. UNITED STATES’ WITNESS.**

13 At the Phase 2 trial in this case, the United States will present the testimony of Dr. June
14 Oberdorfer in its case in chief. Dr. Oberdorfer is a hydrogeologist and is offered as an expert in
15 groundwater storage, groundwater movement, and hydraulic connectivity within the AVAA. Dr.
16 Oberdorfer will opine that the AVAA functions as a singular hydrogeologic system, and that there
17 are no areas within the AVAA that function as independent hydrogeologic environments. She will
18 also opine that groundwater pumping throughout all areas within the jurisdictional boundaries will
19 potentially impact the groundwater supply for other areas within the AVAA.

20 **III. LAW REGARDING SUB-BASINS.**

21 The term “groundwater basin” does not have a precise legal or hydrogeologic definition. *See*
22 1-11 Cal. Water Law & Policy § 11.04 (Matthew Bender 2003)(“The term ‘ground-water basin’ is
23 not subject to a single definition.”). Nevertheless, it is generally accepted that a basin is “a
24 groundwater reservoir capable of furnishing a substantial supply.” *Id.* (quoting Todd, *Groundwater*
25 *Hydrology*, at 47 (1980)). More specifically, in the context of an adjudication of groundwater rights,
26 “the term is used . . . as a ‘hydrologic unit containing one large aquifer or several connected and

1 interrelated aquifers.”^{1/} 1-11 Cal. Water Law & Policy § 11.04 (quoting Todd, *supra*, at 47).

2 In instances where a particular basin acts as a single hydrologic unit, but is too large to
3 manage effectively as a single unit, or considerations such as time, cost, or the effects of localized
4 pumping counsel for adjudication of rights in less than all of a hydrologic unit, “sub-basins” or “sub-
5 areas” have been used to allow varying degrees of autonomy to defined areas within the larger unit.
6 See 1-11 Cal. Water Law & Policy § 11.04(1). Similar to the larger groundwater basins of which
7 they are a part, the term “sub-basin” has no clear definition. See June Oberdorfer, *Antelope Valley*
8 *Area of Adjudication Basin Characteristics: Single Ground-Water Basin*, at 1 (July 27,
9 2008)(“There is no clear definition of the term ‘hydrogeologic subbasins.’”)(“Oberdorfer”).
10 “Subbasins have been defined within ground-water basins based on a broad range of criteria
11 including political boundaries, purposes of investigation, groundwater divides, and flow
12 restrictions.” *Id.* Historically, designation of an area as a “sub-basin” has not necessarily provided
13 meaningful insight into the hydrological relationships between demarcated regions within a larger
14 basin area.

15 The lack of a formal definition for the terms “basin” and “sub-basin” has caused the
16 California courts evaluating water rights to focus less on the physical structure of hydrogeologic
17 formations and more on the impact that extractions from one designated subarea would have on
18 competing parties’ rights in related subareas within a larger basin. In *City of Pasadena v. City of*
19 *Alhambra*, 207 P.2d 17 (Cal. 1949), the Supreme Court of California evaluated a public utility
20 company’s contention that its pumping in the “Pasadena Subarea” could not injure water rights in

21
22 ^{1/}Because the definition of “groundwater basin” is flexible, California courts have used various
23 approaches to determine adjudicative boundaries, relying on physical, geologic, hydraulic, or
24 political boundaries to establish a basin’s boundaries for water rights purposes. See 1-11 Cal. Water
25 Law & Policy § 11.04(1) (“Physical, hydraulic, and political boundaries are apparently all viable
26 bases for drawing dividing lines between one basin and the next.”). The United States recognizes
27 that the Court has already established the jurisdictional boundaries of the area of adjudication in
28 Phase 1 of this litigation, and therefore will not address the AVAA’s exterior boundaries in this
memorandum.

1 the “Monk Hill Basin” of the Raymond Basin Area’s Western Unit, because the Pasadena Subarea
2 and the Monk Hill Basin were distinct hydrogeologic features, and once groundwater reached the
3 Pasadena subarea, it could not flow back “upstream” to the wells in the Monk Hill Basin. *Id.* at 27.
4 Despite describing the Monk Hill Basin and the Pasadena subarea as “[n]atural underground
5 formations [that] divide the area into two practically separate units,” *id.* at 26, the supreme court
6 affirmed the trial court’s treatment of these two subareas as a collective unit, because “[t]here is
7 nothing in the record which would compel a finding that the difference in elevation between the
8 Monk Hill Basin and the Pasadena Subarea is so great that wells in [the Monk Hill Basin] will be
9 *entirely unaffected by long-continued excessive pumping elsewhere in the unit.*” *Id.* at 27 (emphasis
10 added). In the supreme court’s view, the impact pumping in one area would have in a second area,
11 and not the geophysical boundaries between them, was the dispositive consideration with regard to
12 whether the sub-areas should be treated collectively.

13 Subsequent to the supreme court’s decision in *Pasadena v. Alhambra*, the California Court
14 of Appeals addressed a very similar question involving the role of sub-basins in the adjudication of
15 water rights. In *Moreno Mutual Irrigation Co. v. Beaumont Irrigation District*, 211 P.2d 928 (Cal.
16 Ct. App. 1949), the court of appeals addressed the challenge that Respondent Moreno Mutual
17 Irrigation Company (“Moreno”) asserted to a stipulated judgment into which it had previously
18 entered that established limits on the parties’ pumping of groundwater in the Beaumont-Yucaipa
19 Basin. In an attempt to enjoin the enforcement of the stipulated agreement, Moreno conceded that,
20 at the time it entered into the stipulation, it “believed that a single subterranean reservoir of water
21 existed in the area,” *id.* at 934, but argued that subsequently-gathered hydrologic data demonstrated
22 that “the underground storage of water . . . is split and divided by major and minor faults resulting
23 in numerous basins being formed in the shape of separate underground reservoirs, each being
24 independent of the other,” *id.* In refusing to enjoin the stipulation’s enforcement, the court of
25 appeals noted that the trial court entered the stipulated judgment without making specific findings
26 related to the boundaries of the underground water basin, but suggested that such findings were

1 unnecessary for the stipulation to be valid, because the trial court “was convinced that any excess
2 pumping by Moreno from its wells for diversion purposes directly affected the [competing]
3 parties’ supply of water which they needed for beneficial use.” *Id.* at 937. Consistent with the
4 supreme court’s ruling in *Pasadena v. Alhambra*, the court of appeals’ holding reflects its
5 understanding that the court’s focus should be on hydrologic connectivity and the impact of
6 extraction on adjacent units, and not necessarily on alleged physical boundaries.

7 Decisions subsequent to *Moreno* and *Pasadena v. Alhambra* reinforce the propriety of
8 emphasizing the impact extraction may have on adjacent regions when assessing whether an area
9 should be treated as a singular unit for water rights purposes. In *Monolith Portland Cement Co. v.*
10 *Mojave Public Utility District*, 84 Cal. Rptr. 639 (Ct. App. 1970), the court of appeals evaluated the
11 pumping rights of two private parties who had water rights in two basins: the Tehachapi Basin and
12 the Monroe Meadows Basin. Appellant Monolith Portland Cement Company (“Monolith”)
13 established groundwater rights in the Tehachapi Basin; Appellee Mojave Public Utility District
14 (“Mojave”) established groundwater rights in the Monroe Meadows Basin. *See id.* at 640. The
15 basins were adjacent to each other, but an impermeable formation -- the whitnet barrier -- divided
16 the two basins thirty feet below the surface. *See id.*

17 On appeal, Monolith argued that the Mojave’s pumping in the Monroe Meadows Basin
18 lowered the water level in the subject area below thirty feet, interrupting the natural flow of
19 underground waters from the Monroe Meadows Basin to the Tehachapi Basin and preventing
20 Monolith from acquiring all the groundwater to which it was entitled. *See id.* Although the court
21 of appeals in *Monolith Portland* affirmed the trial court’s determination that Mojave had a right to
22 pump in the Monroe Meadows Basin, it treated the two basins as a singular hydrologic unit and
23 cautioned that “[t]here is no evidence to support [Mojave’s] right . . . to sink wells at any location
24 within Monroe Meadows regardless of the effect upon the underground flow.” *Id.* at 643-44. In
25 light of this limitation, the court of appeals explained that the trial court’s judgment granting Mojave
26 a right to pump groundwater “must be modified to provide that [Mojave] has the right to pump water

1 from the Monroe Meadows Basin in a manner not to interfere with the natural flow of the
2 underground water at the whitnet barrier which separates Monroe Meadows Basin from Tehachapi
3 Basin.” *Id.* at 644.

4 Finally, in *City of Los Angeles v. City of San Fernando*, 537 P.2d 1250 (Cal. 1975), the
5 supreme court examined the relationship between three groundwater subareas -- the San Fernando
6 subarea, the Sylmar subarea, and the Verdugo subarea -- to confirm the general rule that hydrologic
7 connectivity, and not structural separation, is key to allocating competing parties’ groundwater rights
8 properly. First, the supreme court considered Plaintiff Los Angeles’ argument that, because the
9 Sylmar and Verdugo areas were within the Los Angeles River watershed, and therefore the areas’
10 waters necessarily flow toward the river, and because the City had a pueblo right to all the water in
11 the river, the court should enjoin pumping of all the groundwater in those areas that would otherwise
12 enter the river system (assuming the City could demonstrate a need for the water). *See id.* at 1287.
13 In rejecting Los Angeles’ claim to the groundwater in Sylmar and Verdugo subareas, the supreme
14 court noted that, while the California courts had confirmed previously that Los Angeles’ pueblo right
15 extended to groundwater in the San Fernando subarea, extending that right to groundwater in the
16 Sylmar and Verdugo subareas would inappropriately expand the pueblo rights doctrine to grant Los
17 Angeles rights in areas that were not hydrologically connected to the San Fernando subarea.² *See*
18 *id.* at 1288.

19 Critically, in arriving at its holding, the supreme court in *Los Angeles v. San Fernando* relied
20 on the trial court’s finding that “the Sylmar, Verdugo and San Fernando subareas each contain
21 separate underground reservoirs or basins with no significant amount of underground flow between
22 them, and that the waters of the Verdugo and Sylmar basins are not tributary to the subsurface water
23 supply of the Los Angeles River.” *Id.* at 1285. The supreme court explained that the “Sylmar,

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25 ²The supreme court also appeared reluctant, as a matter of public policy, to expand the scope of the
26 pueblo rights doctrine. *See Los Angeles v. San Fernando*, 537 P.2d at 1288 (noting that “[t]he
27 historical conditions which led to the creation of the pueblo water right have long since
28 disappeared”).

1 Verdugo, and San Fernando subareas are each separate basins and that the extractions of water in
2 each basin affect the other water users in the same basin but do not significantly or materially affect
3 the groundwater levels in other basins.” *Id.* at 1287. Based on this finding, the supreme court
4 rejected Los Angeles’ claim to groundwater in the Sylmar and Verdugo subareas, because it was
5 inappropriate to extend “the pueblo right to encompass ground water in basins which are
6 hydrologically independent from the area of the bed of the river to which the pueblo right attaches.”
7 *Id.* at 1288.

8 In addition to holding that Los Angeles’ groundwater rights did not extend to groundwater
9 in the Sylmar and Verdugo subareas, the supreme court affirmed the principle that groundwater
10 areas that were in hydrologic connection should be treated as a singular hydrologic unit, irrespective
11 of physical features that may appear to divide those areas. Several cross-defendants in *Los Angeles*
12 *v. San Fernando* asserted “that their respective wells, although located in the San Fernando basin,
13 draw upon ground water that is separated from the Los Angeles River by natural fault barriers and
14 so should be excluded from the pueblo right” that the supreme court determined the City of Los
15 Angeles possessed in the Los Angeles River watershed. *Id.* at 1288. Drawing a distinction between
16 these cross-defendants’ arguments and the assertions the parties presented with respect to the
17 relationship between the San Fernando subarea and the Sylmar and Verdugo subareas, the supreme
18 court rejected the cross-defendants’ argument, because it was contrary to the trial court’s finding
19 that, despite the natural fault barriers, the San Fernando basin ““contain[ed] a common source of
20 water supply to parties pumping or otherwise taking water therefrom’ and that ‘the extractions of
21 water in the respective basins affect the other water users within that basin.’” *Id.* Under conditions
22 analogous to the adjudication of groundwater rights in the AVAA currently, the supreme court in
23 *Los Angeles v. San Fernando* did not exclude any water users in the San Fernando subarea, and
24 observed that each of these parties retained the ability “to be heard on the question of whether and
25 to what extent their extractions affect the water supply to be protected.” *Id.*

26 In sum, the presence of subareas that natural faults or other geologic features demarcate in

1 the Antelope Valley is secondary to the issues before the Court presently. The issue before the
2 Court in the Phase 2 trial is the degree of hydrologic connectivity between the various areas within
3 the area of adjudication, and whether any area is so hydrologically isolated that pumping will not
4 impact the aquifer that serves as the common source of groundwater supply for each of the parties
5 to this adjudication. The evidence in the record, and the evidence that the parties will present at
6 trial, demonstrates that the AVAA functions as a singular hydrogeologic system, and that
7 groundwater withdrawal in each area of the AVAA affects the water available in other areas within
8 the jurisdictional boundaries. Because the entire AVAA groundwater system is in hydrologic
9 connection, and pumping in each part of the AVAA affects the water supply in the interconnected
10 common source, the Court should decline to designate any area within the jurisdictional boundaries
11 a sub-basin.

12 **IV. PARTIES ADVOCATING THE DESIGNATION OF SUB-BASINS BEAR THE**
13 **BURDEN TO PROVE DESIGNATION IS APPROPRIATE.**

14 In Phase 1 of this litigation, the Court explained that “[t]he United States is a major overlying
15 land owner within the basin and has been made a party to this litigation.” Phase 1 Order at 2. The
16 Court determined that “the United States waives its sovereign immunity pursuant to the McCarran
17 Amendment,” and concluded that the adjudication of groundwater rights within the jurisdictional
18 boundaries that the Court established “will be a comprehensive adjudication of all the rights in a .
19 . . . water source.” *Id.* The Court’s application of the McCarran Amendment in this case has
20 important implications as the parties proceed to Phase 2 of this litigation.

21 “The McCarran Amendment, 43 U.S.C. § 666, provides for a limited waiver of the sovereign
22 immunity of the United States in certain circumstances where water rights are concerned.” *Gardner*
23 *v. Stager*, 103 F.3d 886, 888 (9th Cir. 1996). The McCarran Amendment reflects Congress’
24 concern “that the United States not be subjected to piecemeal, private water rights litigation.”
25 *United States v. Or., Water Res. Dep’t*, 44 F.3d 758, 768 (9th Cir. 1994). Accordingly, the waiver
26 of sovereign immunity contained in the McCarran Amendment “is limited to comprehensive
27 adjudications of all of the water rights of various users of a specific water system.” *Gardner v.*

1 *Stager*, 103 F.3d at 888 (citing *Dugan v. Rank*, 372 U.S. 609, 618 (1963); *Metro. Water Dist. of S.*
2 *Cal. v. United States*, 830 F.2d 139, 144 (9th Cir. 1987)). See also *Orff v. United States*, 358 F.3d
3 1137, 1143 n.3 (9th Cir. 2004)(“[T]he holdings of *Metropolitan Water Dist.* and *Dugan* . . .
4 expressly limit the government’s consent in waiving sovereign immunity under the McCarran
5 Amendment to those cases that implicate ‘the rights of *all* claimants on a stream.’”)(emphasis in
6 original).

7 The Court’s application of the McCarran Amendment in Phase 1 of the litigation shapes the
8 parties’ roles in Phase 2 of this litigation. Critically, the McCarran Amendment waives the United
9 States’ immunity for adjudication of water rights in a particular, specific water source; it does not
10 waive immunity for piecemeal adjudications of rights in portions of a water system or source. See
11 43 U.S.C. § 666(a) (waiving immunity “for the adjudication of rights to the use of water of a river
12 system or other source”); *Gardner*, 103 F.3d at 888 (emphasizing that the waiver of immunity “is
13 limited to comprehensive adjudications of all the water rights of various users of a specific water
14 system”). Because the United States has not waived its immunity for piecemeal litigation of rights
15 in multiple basins, the Court’s jurisdictional order and its assertion that the United States remains
16 a party to this litigation necessarily implies that the entire area within the jurisdictional boundaries
17 the Court established in Phase 1 is presumed to be a singular hydrogeologic unit. Similarly, because
18 the United States has only waived its immunity for comprehensive adjudications involving *all*
19 claimants to a unified water source, the Court’s ruling in Phase 1 necessarily implies that all parties
20 whose property falls within the jurisdictional boundaries are necessary parties to complete this
21 action and cannot be excluded if the Court is to retain jurisdiction over the United States in this
22 adjudication.^{3j}

23 The plain language of the Court’s Phase 1 Order supports these conclusions. First, the Court

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25 ^{3j}Certain non-pumping, small landowners receiving municipal water have been excluded from the
26 proposed Willis Class consisting of dormant overlying landowners. The United States understands
27 that these landowners, while potentially possessing an inchoate right to groundwater, have been
28 excluded under the principle of *de minimis no curat lex*.

1 recognized that the adjudication must be comprehensive, and explained that the litigation must
2 adjudicate *all* rights within the aquifer. *See* Phase 1 Order at 2 (“The rights claimed . . . must be
3 such that without adjudicating those rights in the instant action, the United States (and other parties)
4 would be subject to further, separate litigation regarding other *claims of right* affecting their rights
5 to water within the aquifer.”)(emphasis in original). The designations of sub-basins within the
6 jurisdictional area, however, would compel multiple adjudications of water rights within the aquifer
7 that the Court identified in Phase 1 of this litigation as the common source of water within the
8 adjudication area, and would remove this case from the narrow category of water adjudications for
9 which the McCarran Amendment waives the United States’ sovereign immunity. This would
10 necessarily exclude the United States from this litigation, because only Congress can effect this
11 waiver. *See Dunn & Black, P.S. v. United States*, 492 F.3d 1084, 1090 (9th Cir. 2007)(“Only
12 Congress enjoys the power to waive the United States’ sovereign immunity.”)(citing *Army & Air*
13 *Force Exch. Serv. v. Sheehan*, 456 U.S. 728, 734 (1982)). Further, because the United States’ rights
14 in this matter are based on the doctrine of federal reserved water rights, and not state-law, this
15 exclusion will preclude an accurate adjudication of the remaining parties’ rights and will frustrate
16 the parties’ attempts to arrive at a comprehensive physical solution regarding the remaining ground
17 water.

18 The Court’s Phase 1 ruling also has an important impact on the parties’ procedural burdens
19 in the Phase 2 trial. Consistent with the California caselaw discussed above, *see* discussion *supra*
20 Part III, the Court explained that its primary criteria in establishing the jurisdictional boundaries in
21 these cases was connection to, and potential impact on, the AVAA aquifer. *See* Phase 1 Order at
22 3 (explaining that nominal users in the watershed need not be joined unless acting to “interfere with
23 recharge of the basin aquifer in a material way”); *id.* at 4 (excluding various adjacent valleys from
24 the jurisdictional boundaries until a party demonstrates that “there is measurable impact on the
25 aquifer”); *id.* (acknowledging that properties “lack[ing] any real connection to the Antelope Valley
26 aquifer” may ultimately be excluded from the adjudication). By including the parties’ properties

1 within the area of adjudication, therefore, the Court has already concluded that each of these areas
2 is hydrologically connected to the common aquifer and that extractions in one area will impact
3 properties within the other areas within the jurisdictional boundaries. Indeed, implicit in the Court's
4 Phase 1 ruling is the conclusion that, consistent with California caselaw, pumping in all parts of the
5 AVAA affects or potentially affects the source of supply for water rights in other parts of the
6 jurisdictional area. Viewed in this context, it is clear that the burden to establish that certain
7 geographical areas should be considered hydrologically separate and distinct sub-basins is on the
8 parties advocating for that designation.

9 In sum, by including the United States in this litigation, the Court has already determined
10 that the AVAA is a singular hydrogeologic system. By including the parties' properties within the
11 jurisdictional boundaries that the Court established, the Court has already determined that the
12 properties have connectivity to this common source of supply, and that withdrawal from any location
13 within the AVAA has the potential to affect the groundwater supply available to other parties within
14 the jurisdictional boundaries. It follows, therefore, that any designation of sub-basins is contrary
15 to the Court's holdings in Phase 1 of this litigation, and the parties advocating for such a designation
16 bear the evidentiary burden to prove that a reversal of the Court's previous ruling is appropriate at
17 this time.⁴

18
19
20 ⁴Not only does the Court's holding in Phase 1 place the evidentiary burden in this second litigation
21 stage on those parties advocating for a sub-basin designation, such a procedural posture is also
22 consistent with the principle that any waiver of sovereign immunity must be construed narrowly,
23 and not enlarged beyond what the language of the McCarran Amendment requires. *See United*
24 *States v. Idaho*, 508 U.S. 1, 7 (1993). The United States Supreme Court has confirmed that this
25 principle applies to the joinder of the United States as a necessary party. *See Orff v. United States*,
26 545 U.S. 596, 601-02 (2005). Moreover, a party asserting jurisdiction over the United States bears
the burden to establish a sufficient waiver of sovereign immunity. *See Reynold v. Army & Air Force*
Exch. Serv., 846 F.2d 746, 748 (Fed. Cir. 1988)(citing *Jascourt v. United States*, 207 Ct. Cl. 955
(1975), for the proposition that "plaintiff bears burden of establishing waiver of sovereign
immunity"); *Holloman v. Watt*, 708 F.2d 1399, 1401 (9th Cir. 1983).

1 **V. THE HYDROGEOLOGIC EVIDENCE DEMONSTRATES THAT THE AREA OF**
2 **ADJUDICATION FUNCTIONS AS A SINGLE HYDROLOGIC UNIT.**

3 Irrespective which party the Court charges with bearing the burden of proof in the upcoming
4 Phase 2 trial, the evidence will demonstrate that a designation of sub-basins is inappropriate, because
5 the area of adjudication functions as a singular hydrologic unit. The evidence that the parties present
6 at trial will demonstrate that, within the area the Court designated in Phase 1, there are no
7 hydrogeologic sub-basin that are so hydrologically isolated that recharge or pumping within that
8 alleged sub-basin can have no effect on adjacent areas within the AVAA.

9 It is undisputed that faults and other geologic features may constitute partial boundaries to
10 groundwater flow between various geographic regions within a groundwater basin. *See* Oberdorfer
11 at 3. Within the Antelope Valley, faults have been used to demarcate boundaries between subareas
12 in the AVAA. *See* Luhdorff & Scalmanini, *Ground-Water Basin and Subbasin Boundaries:*
13 *Antelope Valley Ground-Water Basin*, at 9 (Jan. 2002)(“Scalmanini”). Nevertheless, to the extent
14 that the term “boundaries” suggest barriers, or “implies the absence of groundwater flow across a
15 fault,” the evidence will demonstrate that “the term is misleading.” Timothy J. Durbin, *Antelope*
16 *Valley Groundwater Basin Subbasin Analysis* § 1.0, at 1 (Aug. 13, 2008).

17 The evidence that the United States and other parties will present explains that the mere
18 existence of faults does not preclude the movement of groundwater from one subarea to another.
19 Accordingly, pumping of groundwater in one subarea has the potential to affect the source of supply
20 and available yield in other surrounding subareas. Further, each of the arguments that parties
21 advocating for the designation of sub-basins will present is flawed and insufficient to meet their
22 burden to prove a lack of hydraulic connection.

23 First, although certain experts may testify that ridges of impermeable bedrock separate
24 various alleged sub-basins, these same experts acknowledge that there may be gaps in the bedrock
25 ridges, and that, even where a bedrock high is found, a significant layer of conductive saturated
26 alluvium covers the bedrock, and there is no barrier to the flow of water through the saturated
27 alluvium overlying the underlying bedrock. *See, e.g.,* E. John List, *Groundwater Sub-Basins in the*

1 *Antelope Valley*, Fig. 12, at 14 (June 24, 2008)(portraying a layer of alluvium almost 500 feet deep
2 at various points along a cross-section of the alleged bedrock). Second, although significant water
3 level differences have been observed across faults in the Antelope Valley, or actually used to
4 identify the probable location of faults, none of the faults or other features proposed as sub-basin
5 boundaries has been identified as completely impermeable, and the evidence will show that water
6 flows across these faults, impacting the supply of groundwater to other areas within the AVAA. *See*
7 Oberdorfer at 3. Even where faults are alleged to create a partial barrier to flow, “the hydraulic head
8 builds up on the upgradient side of the fault to a sufficient degree to drive flow [a]cross the fault
9 from one subunit to the next.” *Id.* Likewise, two groundwater flow models that the United States
10 Geologic Survey developed suggest that fault-boundaries “do not produce sufficient isolation to
11 create separate hydrogeologic subbasins.” *Id.* at 5 (“In both models, the partial barrier boundaries
12 have been treated as conductive.”). Third, the directional movement of groundwater in the Antelope
13 Valley serves as convincing evidence that groundwater moves from subarea to subarea, both
14 historically and under current conditions. The parties agree that groundwater in the Antelope Valley
15 moves from the recharge areas at the base of the San Gabriel and Tehachapi Mountains in the west
16 toward the discharge areas in the topographic lows near Rosamond and Rogers Lake in the Lancaster
17 subarea. *See* Oberdorfer at 5; Durbin § 3.1, at 6; Rhone & Schnabel, *Separation of Antelope Valley*
18 *into Sub-Basins for Groundwater Management* § 3.5, at 11 (June 25, 2008). This flow has
19 historically supported the United States’ senior reserved water rights for Edwards Air Force Base,
20 and the water rights of other groundwater users in the central and eastern portions of the AVAA.
21 For water to reach these discharge areas, it must move laterally down-gradient from the western and
22 southern portions of the valley -- Neenach, West Antelope, Willow Springs, Oak Creek, Finger
23 Buttes, Big Rock, and Little Rock -- into the Lancaster subarea. *See* Durbin § 3.1, at 6. “This
24 continuity of flow from recharge to discharge areas means that groundwater needed to traverse the
25 leaky barriers to migrate along the pathways between them.” Oberdorfer at 5.

26 In sum, the parties advocating for the designation of sub-basins cannot present evidence

1 sufficient to meet their evidentiary burden. The hydrogeologic data demonstrates that there is
2 hydraulic connectivity between each of the groundwater sub-areas within the AVAA, and each of
3 the counter-arguments presented is flawed materially. The Court should rule accordingly, decline
4 to designate any sections as a sub-basin, and declare the basin a single hydrogeologic unit.

5 **VI. CONCLUSION.**

6 The Court has already determined that the parties' properties within the jurisdictional
7 boundaries of this adjudication have connectivity to a common source of supply. This finding is
8 consistent with the conclusion of the numerous experts that have determined that the basin functions
9 as a single hydrogeologic system. Because the evidence in the record currently before the Court,
10 and the evidence that the parties will present at trial, demonstrates that the extraction of groundwater
11 from any area within the jurisdictional boundaries that the Court established in Phase 1 of this case
12 can impact the aquifer that is the subject of this adjudication, the Court should decline to designate
13 any geographical area within the jurisdictional boundaries as a sub-basin or to exclude any area from
14 this adjudication.

15 Respectfully submitted this 1st day of October, 2008,

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PROOF OF SERVICE

I, Linda C. Shumard, declare:

I am a resident of the State of Colorado and over the age of 18 years, and not a party to the within action. My business address is U.S. Department of Justice, Environmental and Natural Resources Section, 1961 Stout Street, 8th Floor, Denver, Colorado 80294.

On October 1, 2008, I caused the foregoing documents described as; **UNITED STATES' TRIAL BRIEF**, to be served on the parties via the following service:

BY ELECTRONIC SERVICE AS FOLLOWS by posting the document(s) listed above to the Santa Clara website in regard to the Antelope Valley Groundwater matter.

BY MAIL AS FOLLOWS (to parties so indicated on attached service list): By placing true copies thereof enclosed in sealed envelopes addressed as indicated on the attached service list.

BY OVERNIGHT COURIER: I caused the above-referenced document(s) be delivered to FEDERAL EXPRESS for delivery to the above address(es).

Executed on October 1, 2008, at Denver, Colorado.

/s/Linda C. Shumard
Linda C. Shumard
Legal Support Assistant