TESTIMONY OF ROBERT C. WAGNER

I. Qualifications

1. I am a Professional Engineer licensed in the State of California and president of the water resource engineering firm of Wagner & Bonsignore, Consulting Civil Engineers in Sacramento, California. I have provided expert testimony to the State Water Board on several occasions including matters related to the hydrology and water rights of South Fork American River in a hearing leading to Decision 1635; surface and subsurface flow interactions and Fully Appropriated Streams listing of the American River; hydrology and water rights of the Mojave River system and Lake Arrowhead. I have appeared before this Board on other matters related to water right administration. I have provided testimony in Court on matters related to riparian water rights, pre-1914 and post 1914 appropriative rights, groundwater surface water interactions, hydrology, water use and disposal. I serve as Engineer for the Court appointed Mojave Basin Area Watermaster, and represent various private clients and public agencies on water right matters throughout California.

2. I am providing this testimony on the issues pertaining to the County of Alpine and Lake Alpine Water Company (the "Applicants") Petition for Partial Assignment of State-Filed Application 5648, Petitions to Change State-Filed Application, and Application 31523 (the "Project"), that will be discussed during the July 14, 2008, State Water Resources Control Board (SWRCB) hearing to consider the Applicants' petitions and application.

3. A true and correct copy of my professional resume is attached as County & LAWC Exhibit G. All exhibits, tables, figures, plates and data attached hereto were prepared by me or under my direct supervision and are attached hereto as Attachment A. The appendices are included as Attachment B.

II. Background

4. Lake Alpine Water Company (LAWC) currently holds water right Licenses 11007 and 10840. License 11007 authorizes LAWC to store 240 acre-feet of water in Bear Lake, and divert 0.05 cfs by direct diversion. The "as-built" capacity of Bear Lake is 360 acre-feet. The annual withdrawal from storage under License 11007 is limited to 140 acre-feet per year. Thus, 220 acre-feet of water stored in Bear Lake is not authorized for use. License 10840 authorizes the direct diversion of 0.075 cfs, which is limited to 42 acre-feet per year. The combined annual authorized use under these two licenses is 182 acre-feet per year.

EXHIBIT F

5. Applicants seek to appropriate 395 acre-feet of water under SFA 5648. The water can be categorized in the following manner: (1) 220 acre-feet of the 395 is being sought to authorize the full amount of water that can be stored in Bear Lake, which amounts to 120 acre-feet of unpermitted storage capacity plus 100 acre-feet of licensed but unused capacity, to be collected from October 1 to July 30; and (2) the right to directly divert at a rate of 0.78 cfs an additional 175 acre-feet per year from Bear Creek, to be diverted from October 1 to July 30. The purposes of use are municipal and recreation.

III. General Description of Watershed Area and Project Area

6. The source of water for the project is Bear Creek, in Alpine County tributary to Bloods Creek thence North Fork Stanislaus River. The North Fork Stanislaus River (NFSR), the Middle Fork Stanislaus River, and the South Fork Stanislaus River are impounded by New Melones Reservoir. Bear Lake is located approximately 58 miles upstream from New Melones Dam (approximately 68 miles to Goodwin Dam) According to Division of Safety of Dams (DSOD) Bear Lake has a drainage are of 0.8 square miles (520 acres impounded at the point of diversion). The watershed of Bear Creek ranges in elevation from about 7,200 feet above msl to about 8,400 feet above msl. The area is generally tree covered, steep and rocky. Seasonal runoff occurs during October to July, but is most abundant during the snowmelt period of May and June. Runoff due to rainfall or snowmelt is rapid with limited watershed retention.

7. Precipitation at Bear Valley normally occurs between October and May with the heaviest amounts falling during January, February and March. Snowfall is abundant due to the elevation (above 7,200 feet). According to Mr. Bruce Orvis Jr., manager of the Lake Alpine Water Company, Bear Creek is normally dry after the snowmelt in June or early July, and remains dry until late October (normally after the start of the precipitation season). I personally inspected the site on July 5, 2005, which followed an unusually wet winter. There was still a small amount of snow pack above Bear Lake and a small amount of flow into the lake. According to Mr. Orvis, the inflow ceased within a few weeks.

8. While precipitation records for Bear Valley are not readily available, precipitation as recorded at Calaveras Big Trees (elevation 4,700 feet) is indicative of the pattern of expected precipitation in the area. The average annual precipitation reported at Big Trees is about 54 inches. We expect that substantially greater precipitation falls at Bear Valley due to the elevation change of almost 3,000 feet. Almost 85% of the rainfall at Big Trees occurs in the November to May period. Average precipitation in July (2.2 inches), August (0.8 inches), September (0.7 inches) and October (2.8 inches) produces limited runoff and supports the reported lack of flow in Bear Creek during the months of July through October (see Appendix B for precipitation record).

9. The project location, drainage areas at specific points in the watershed and estimated seasonal annual discharge at each point is shown on Plate I. Plate II is an expanded section of the project location.

10. As shown on Plates I and II, other than Bear Lake, the Bloods Creek watershed is unimpaired. The NFSR upstream from its confluence with Bloods Creek is impaired by Utica Reservoir (2,400 acre-feet) and Union Reservoir (2,000 acre-feet) on the NFSR and Spicer Meadows Reservoir (189,000 acre-feet) on Highland Creek. Water rights associated with these reservoirs are unaffected by Applicants' diversions.

11. Goodwin Dam is a point downstream of New Melones and regulates water diverted under prior claims of right by senior right holders Oakdale Irrigation District (OID)and South San Joaquin Irrigation District (SSJID). The Bear Creek drainage area above Bear Lake is 0.08% of the drainage area at Goodwin Dam (Plate I).

IV. Watershed of Origin

12. The water covered by the portion of SFA 5648 applicable to the NFSR (30,000 afa of storage and 975 cfs of direct diversion) originates in Alpine, Calaveras and Tuolumne counties. (Plate I). Plate I shows that the watershed of Bear Creek in Alpine County, as well as the point of diversion and the place of use, lie wholly within the watershed of the NFSR. Alpine County comprises approximately 15.6% of the New Melones watershed. We estimate that the water tributary to New Melones Reservoir originating in Alpine County is at least 184,000 acre-feet annually. Thus, Alpine County is a county of origin for water tributary to NFSR.

V. Place of Use of SFA 5648

13. The Applicants' place of use is outside of the place of use boundary designated by SFA 5648. However, the proposed place of use falls within the NFSR watershed. Thus, the use of the water applied for will be in the Stanislaus River watershed (see Plate I).

VI. Physical Water Availability at Point of Diversion

14. The State Water Board records for SFA 5648 show water available under SFA 5648 for the NFSR of 30,000 acre feet by diversion to storage and 975 cfs by direct diversion. Water Board records indicate that there has been no assignment of SFA 5648 for the NFSR and the entire amount remains available.

15. We evaluated the hydrology of Bear Creek and Bloods Creek to determine the frequency that water is physically available on a seasonal basis to satisfy the Applicants' requested appropriation of 395 acre feet.

16. There are no discharge records for Bear Creek, thus in order to estimate the amount and frequency of water availability it was necessary to estimate the daily discharge of Bear Creek at the point of diversion. Bear Valley Water District (BVWD), which operates a wastewater treatment plant near the confluence of Bloods Creek and Bear Creek for the Bear Valley community, measured the flow of Bloods Creek during the spring of 2003 and 2005. The year 2005 was a heavy snowfall year and measurements were limited.

17. The Bloods Creek measured discharge for 2003 was compared to the discharge reported by the USGS gage station on the Merced River at Pohono Bridge for the period during which measurements were made on Bloods Creek, March 22 to June 18, 2003. The Merced River watershed is relatively unimpaired above Pohono Bridge. While the Merced River is much larger than Bloods Creek, Blood Creek exhibited a remarkably similar seasonal runoff pattern. A statistical relationship was developed to estimate flow in Bloods Creek. The relationship between the discharge of Bloods Creek measured by the BVWD and the discharge for Merced River at Pohono Bridge are shown on Figure 1.

18. Figure 2 shows the relationship between the estimated discharge of Bloods Creek based on the Merced River, and the measured discharge of Bloods Creek. The data show a good correlation. The total volume of water measured and estimated is within 10%; considered to be within the expected error of uncertainty for these types of measurements.

19. There is a USGS gage on the NFSR near Avery (Avery) downstream from Bloods Creek about 20 miles. However, the record is impaired by the reservoirs in the upper watershed of NFSR. In order to evaluate the applicability of the Merced River at Pohono Bridge record to the NFSR watershed (and Bloods Creek) we compared the flow at Avery to Pohono Bridge. The results are shown on Figures 3A and 3B. Based on the relationship shown on Figures 3A and 3B we concluded that the Merced River at Pohono was a reasonably representative record for estimating unimpaired flow in NFSR watershed where necessary.

20. We also estimated the flow in the NFSR at McKays' point, based on a ratio of watershed area with the Merced River. Figure 4 shows a comparison of the estimated flow at McKay's to a nearby USGS gage at Avery. The timing and distribution of discharge is similar, but the volume measured at Avery is about 30% higher. Consequently, we conclude that our estimation of flow using the Merced River probably understates the actual amount of water available at this point.

21. The watershed of Bloods Creek (about 2,000 acres) is geographically similar to Bear Creek (520 acres) and about at the same elevation (7,000 to 8,000 feet msl). The estimated flow in Bloods Creek was assumed to be a reasonable basis for determining the discharge of Bear Creek, See Figure 5.

22. Figures 6 through 10 show the estimated frequency of water availability at the Applicants point of diversion based on the flow record in the Merced River, from 1917 through 2007 and adjusted from Bloods Creek measurements. We included an evaluation of the three driest years in the record (Figures 8, 9 and 10). As shown on Figure 6, the full amount of the Applicants requested appropriation is available in 99.8% of the years. Notably, LAWC's report of licensee for Bear Lake under license 11007 shows that Bear Lake has spilled in every year dating back to at least 1980 (see appendix C). Based on the foregoing analysis, there is water physically available more than 99% of the time at the point of diversion.

VII. Water Availability Relative to Instream Flows Requirements

23. An analysis of the hydrology of the Bear Creek - Bloods Creek drainage system under unimpaired conditions, and impaired conditions proposed by Applicants, showed very little expected change in the timing and distribution of runoff to Bear Creek below Bear Lake. The analysis was provided to the California Department of Fish and Game (CDFG) in a letter report to Mr. Gary Hobgood dated August 10, 2005 (see appendix).

24. We also investigated and tabulated the water right filings (statements of water diversion and use and applications to appropriate water) on the Bear Creek - Bloods creek system. These filings and the face value amount are shown on Table 1.

25. Compared to the estimated average annual discharge of Bloods Creek (23,949 acre feet) at its confluence with the NFSR (Plate I) these filings represent only 2.8% of the annual discharge of Bloods Creek. The confluence is downstream of significant barriers to up migration for fish in Bloods Creek. CDFG withdrew its protest to the project on the basis of this analysis.

VIII. Water Availability – Protest Resolution – Impact to Prior Rights

26. The SWRCB publicly noticed the subject petitions and application on December 10, 2004. The SWRCB received eight protests from interested parties and legal users of water. After consultation with these parties, the Applicants have resolved all eight of the protests. A summary of the protests, and their dismissal letters are attached as Exhibit O. The protestants recognize that the potential impact of the requested appropriations to the hydrology of the NFSR and downstream water rights on the Stanislaus system is de minimus, minimal or insignificant.

IX. Assignment of SFA 5648 will not Impair Prior Rights

27. Table 2 shows the water right filings on the Stanislaus River System represented by the protestants as well as the water right filings in the NFSR as indicated on the SWRCB eWRIMS system. The filings prior to SFA 5648 and downstream of the Applicants' point of diversion are highlighted.

28. The amount of the proposed appropriation (395 acre-feet) relative to the amount of water normally available in the NFSR (see Plate I) is such a minimal amount that the diversion will have a de minimus effect on the downstream hydrology. It is believed that there is a lack of hydraulic connection between Applicants' point of diversion and downstream prior right holders during July, August, September and October. Lacking such connection, diversions by Applicants would have no impact at all on downstream diversions during those months. During the remaining months, it is possible that Applicants' diversions could impact downstream right holders; however the potential interference is so small as to be immeasurable. This limited ability to cause impact, and the insignificance of the impact, was recognized by all of the protestants including CDFG.

29. The State Water Board has taken notice of de minimus or insignificant impacts in previous water right decisions. For example in Water Right Decision 1587 (page 53) the State Water Board writes: "The Bureau's own testimony indicated that inflow to Folsom Reservoir would be reduced by about 33,000 afa from the project's proposed operations, an amount that is insignificant when examining the 1,050,000 acre feet that can be assigned to El Dorado under Applications 7938 and 7939."

30. For perspective, in this instance we evaluated the possible impairment of the prior water rights of OID-SSJID at Goodwin Dam below New Melones and on CCWD-NCPA at McKay's point. OID-SSJID claim a pre-1914 water right of 1,816.6 cfs and post-1914 storage rights of about 144,000 acre feet. CCWD-NCPA claim a pre-1914 water rights of 88 cfs. Each of these rights enjoy a higher priority than SFA 5648 sought by Petitioners. SFA 5648 is believed to have a higher priority than all of the other diverters upstream of Goodwin Dam.

31. We assumed that 1,816.6 cfs was a maximum diversion rate to satisfy a beneficial use based on an irrigation demand, seasonally adjusted to the potential evapo-transpiration rate in the general area of OID-SSJID. The results of this analysis are shown on Table 3. The maximum impairment of diversion opportunity at Goodwin based on the past 105 years of record would be 23.2 acre feet. The potential average diversion at Goodwin Dam during the irrigation season, March through October, is 408,513 acre feet per year. The potential impairment is less than 0.006%. A review of the full natural flow at Goodwin indicates there has

always been sufficient seasonal runoff to satisfy the OID-SSJID storage rights as well.

32. Table 4 shows the average flow estimated at McKay's Point to represent inflow to the Utica Ditch for diversion of 88 cfs for power. During the Applicants' diversion season there is on average 88 cfs or more, in all months, or there is a lack of hydraulic connection, with the exception of November where the average flow is 64 cfs. Again, due to the possibility of only a very limited infringement of right, the protests were settled.

33. The foregoing is not intended to be a representation of how the water rights of prior right holders been exercised in the past or, or to suggest that the full amount of the rights is not fully valid during months of the right holders season if that amount of water existed and was needed for beneficial uses. The analysis is intended to show the de minimus impact of the Bear Lake diversions. The lack of measureable impact was the basis for settlement of the protests.

X. Assignment of SFA 5648

34. One of the Petitioner's purposes of use is recreation. The Stanislaus River has been declared to be fully appropriated from April 1 to November 30 (see State Water Board Order WR 98-08, Staff Exhibit G). The period of highest runoff (snowmelt) occurs after April 1st. Since water is available under 5648, and there are no outstanding protests, approval would provide Petitioners with the flexibility to directly divert during the spring and early summer from April 1 to the end of the requested diversion season of July 30, when water is normally abundant, to preserve the recreational uses of the lake by allowing the lake to remain full longer through the dry season. If the season was curtailed to only December 1 to March 31, Applicants would need to withdraw water from storage during April, May, June and July, impairing recreation in some years due to lower lake levels than would occur if the SFA 5648 assignment is approved.

XI. SFA 5648 – Conflict with a General or Coordinated Plan

35. I have reviewed Bulletin 160-05, the California Water Plan, and did not see any projects or plans to use the water available under SFA 5648. (County & LAWC Exhibit P) Specifically, Chapters 17 and 18 of Volume 2, dealing with water storage projects, did not disclose any plan to use water from SFA 5648.

XII. Water Availability for Application 31523 (if petition for partial assignment is denied).

36. Table 5 shows the estimated and measured monthly flow at various points in the watershed. Table 5 indicates that water is available at the point of diversion (Bear Creek) during all months of the year on average. However during the months of August and September it is rare that there is any flow in Bear Creek. Occasionally there is flow in October if the precipitation season begins early. More frequently there is flow in July due to snowmelt following heavy winter storms. Flow in Bear Creek is mostly a function of runoff from precipitation. It is reasonable to conclude that during months of limited precipitation there would be a lack of flow sufficient to sustain hydraulic connection downstream. The record at Calaveras Big Trees supports this conclusion. We do not believe that the Applicants' diversions will impact downstream water rights.

37. The protestants within the NFSR system that could be affected by an assignment of SFA5648 are also holders post-1914 water rights (Table 2). The impact analysis showing de minimus impact on downstream diversion opportunities of pre-1927 and pre-1914 water rights, applies to the post-1914 water rights as well. While the impact is not quantified here, it would be larger (although the actual impairment would still be small). It is noteworthy that the post-1914 water right holder protestants dismissed their protests, and have chosen not to appear in this proceeding.

38. I also compared the amount of water sought by Application 31523 to the Stanislaus River watershed losses that occurred due to the New Melones Project. Prior to construction of New Melones Dam, the reservoir impounded by Old Melones resulted in an annual evaporation rate. The annual rate of evaporation increased significantly with the construction of New Melones. As shown on Table 6 and Figure 11 the estimated change in evaporation between New Melones and the amount that would have occurred during the 28 year period between 1980 and 2007, is 28,458 acre-feet per year. This represents an increase in losses from the watershed due to the construction and operation of New Melones more than 70 times greater than the total face value of Application 31523.

39. Due to the Fully Appropriated Stream Index, WRO 98-08 (FAS), the Stanislaus River system is fully appropriated from April 1 to November 30. (See Staff Exhibit G.) Application 31523 seeks a diversion season from October 1 to July 31. If Application 31523 is limited to comply with FAS, then the requested diversion season would be reduced by five months and would extend only from December 1 to March 31. Based upon Table 5, this would mean that the full amount of water sought by Applicants (395 afa) would not appear to be available during an average year. Based upon monthly averages, only approximately 252 acre-feet would be theoretically available at the Applicants' point of diversion during this reduced diversion season. However, this assumes that water would actually be liquid during these months, which would not be expected. During these months, the water is typically still frozen (snow), and would not be available to divert. The water only becomes actually available during and after March (see Figures 1 and 2). Thus, if the FAS finding was strictly interpreted and applied to

Application 31523, then during most years adequate water would not be available to fulfill the full amount of water sought by Applicants.

40. It is my understanding that since Alpine County is a County of Origin and is seeking those protections, the FAS finding should not be applied to Application 31523. This issue is more fully addressed in the Applicants' closing brief.

XIII. Conclusion

41. Based on the foregoing I conclude that with respect to the petition for partial assignment and petitions to change SFA 5648:
    a. There is water available for the requested appropriation in 99% of the years;
    b. The diversions will have a de minimus, or no impact, on prior water rights;
    c. The diversions will have a de minimus impact on the total water resources of the Stanislaus River system and in particular the NFSR;
    d. The partial assignment will not interfere with any General or Coordinated County Plans;
    e. The partial assignment is consistent with the California State Water Plan;
    f. There is currently no opposition to the approval of the petition for partial assignment SFA 5648 and the petitions to change place of use and purpose of use.

42. Based on the foregoing, I conclude that with respect to Application 31523:
    g. FAS could greatly limit the Applicants' ability to fully divert the amount of water sought by the Applicants.
    h. The full amount of diversions exercised during the requested season will have a de minimus, or no impact, on prior water rights;
    i. The diversions will have a de minimus impact on the total water resources of the Stanislaus River system and in particular the NFSR;
    j. There is currently no opposition to the approval of the application as filed for the amount or season.

Robert C. Wagner, P.E.

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Western Regional Climate Center (WRCC) website:
http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca1277, Calaveras Big Trees, CA, accessed June 2008.

Bear Valley Water District Records

Mr. Bruce Orvis, Manager, Lake Alpine Water Company Personal Communication

State Water Resources Control Board, Division of Water Rights, Water Rights Information Management System (eWRIMS)