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Attorneys for Protestants
Local Agencies of the North Delta
Bogle Vineyards / Delta Watershed Landowner Coalition
Diablo Vineyards and Brad Lange / Delta Watershed Landowner Coalition
Stillwater Orchards / Delta Watershed Landowner Coalition

BEFORE THE
CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

HEARING IN THE MATTER OF
CALIFORNIA DEPARTMENT OF WATER
RESOURCES AND UNITED STATES
BUREAU OF RECLAMATION
REQUEST FOR A CHANGE IN POINT OF
DIVERSION FOR CALIFORNIA WATER FIX

**REBUTTAL TESTIMONY OF ERIK
RINGELBERG**

**Local Agencies of the North Delta, Delta
Watershed Landowner Coalition, Bogle
Vineyards,
Diablo Vineyards, and Stillwater Orchards**

1 I, Erik Ringelberg, do hereby declare:

2 I. INTRODUCTION

3 I am an environmental scientist with technical and managerial experience in developing,
4 planning, and permitting large projects, assessing their environmental impacts, and where
5 necessary, developing mitigation.

6 I have been working in various capacities as a scientist and as a consultant within the
7 Sacramento San Joaquin Delta, and its tributaries, for the past decade. I am currently the
8 California Director of The Freshwater Trust. In that capacity I provide organization,
9 management and planning for quantified conservation and restoration projects in California.

10 Previously I was the Natural Resources and Land Planning Director, and Ecological
11 Services Director for 6 years at BSK Associates, and prior to that Ecological Services Director
12 for 3 years at Wallace-Kuhl and Associates. (See II-23, SJC-3, Statements of Qualifications.)

13 In all of my consulting and other positions I have worked extensively with GIS mapping
14 and related analytical and mapping activities to provide visual illustrations to assist in project
15 understanding and development.

16 II. PURPOSE OF TESTIMONY

17 The purpose of this testimony is to provide additional information about and further
18 authentication of several figures I assisted in preparing for Local Agencies of the North Delta,
19 Delta Watershed Landowner Coalition, Bogle Vineyards, Diablo Vineyards, Stillwater
20 Orchards, and Islands, Inc. ("LAND et al."), which were submitted with LAND et al.'s case in
21 chief. This testimony rebuts statements made by Petitioners and others that question the
22 reliability of these figures. (See, e.g., Hearing Transcript, November 3, 2016, pp. 175-176.)

23 III. TESTIMONY

24 I assisted in the development and production of the following LAND Exhibits (among
25 others): LAND-3, LAND-4, LAND-5, LAND-6, LAND-7, and LAND-57. With respect to LAND-
26 58 and LAND-60, those figures include the same base work, known as GIS layers, that was
27 used for the previously identified LAND Figures. However, the final figures were prepared
28 after I had left BSK Associates. Per LAND's request, I contacted BSK's GIS staff to ensure that

1 staff prepared those figures according to the same methodological approach as the prior
2 figures. Those layers were created under my supervision by GIS technical staff at BSK
3 Associates. Those layers included plan view extractions depicting the facilities proposed for
4 construction by Petitioners in the Delta. These figures are all standard consulting work-product
5 GIS maps used throughout the consulting industry.

6 To create these figures, we took an underlying base map, one of a set of available
7 basemaps which come standard with the GIS package (namely Arcmap 10.4 software and
8 ESRI World Imagery base map). These basemaps come from a variety of sources and are a
9 composite of all aerial photos and geographic references, similar to Google Earth's basemaps
10 that most people are familiar with. To display the facilities proposed for construction and
11 operation by Petitioners, we created GIS shape files from the 2015 Public Draft Bay Delta
12 Conservation Plan/California WaterFix Partially Recirculated Draft Environmental Impact
13 Report/Supplemental Draft Environmental Impact Statement and Comments (SWRCB-3,
14 ["2015 RDEIR/SDEIS"]). We also referred to the project details included in the Delta Habitat
15 Conservation & Conveyance Program - Conceptual Engineering Report, Volumes 1 and 2 for
16 verification. (DWR-212, LAND-65, ["2015 CER"].) Those shapes files (or layers) were then
17 projected onto the base maps. Project figures provided in the Petition confirm the proposed
18 locations of the tunnels' intakes. (See SWRCB-1, SWRCB-2.)

19 The figures are all to scale except where noted otherwise, where they were modified
20 solely for visibility purposes. This is because at the scale that the project encompasses, the
21 tunnels and their approximate alignments would all be seen as a single thin line feature and
22 the relative distances compressed such that features would not be discernable or would
23 overlap other key details. (See e.g., LAND-4, LAND-5 [noting where tunnels not to scale in
24 legend].)

25 Additional information about each exhibit is provided below.

26 LAND-3 is a map of the tunnels' intakes and infrastructure in the northern Delta, which
27 is adapted from materials in the 2015 RDEIR/SDEIS and 2015 CER. The legend depicts the
28 various project components shown on the figure in relation to the underlying geography.

1 LAND-4 is a map of LAND member districts (see LAND-62) in relation to the tunnels'
2 intakes and infrastructure, and is also adapted from materials in the 2015 RDEIR/SDEIS and
3 2015 CER.

4 LAND-5 is a map of the Bogle water diversions in relation to the tunnels' intakes. The
5 location of the tunnels' intakes was adapted from materials in the 2015 RDEIR/SDEIS and
6 2015 CER. This is a visual representation of the Bogle diversion location descriptions
7 provided in the Bogle Protest (LAND-75, Exhibit A), and the same map as LAND-75, Exhibit B.

8 LAND-6 is a map of the Diablo Vineyards water diversions in relation to the tunnels'
9 intakes. The location of the tunnels' intakes was adapted from materials in the 2015
10 RDEIR/SDEIS and 2015 CER. This is a visual representation of the Diablo diversion location
11 description provided in LAND-76, Exhibit A, and the same map as included in LAND-76,
12 Exhibit B.

13 LAND-7 is a map of the Stillwater water diversions in relation to the tunnels' intakes.
14 The location of the tunnels' intakes was adapted from materials in the 2015 RDEIR/SDEIS and
15 2015 CER. This is a visual representation of the Stillwater diversion location descriptions
16 provided by LAND-77, Exhibit A, and the same map as included in LAND-77, Exhibit B.

17 LAND-57 depicts the private properties that would be necessary for construction of the
18 tunnels' intakes and associated facilities. Property acquisition information was obtained from a
19 report entitled 2014 Draft DCE CM1 Property Acquisition Management Plan, which was
20 prepared as part of the Delta Habitat Conservation and Conveyance Process. (LAND-69.)
21 The previously prepared base maps showing the tunnels' intakes adapted from materials in the
22 2015 RDEIR/SDEIS and 2015 CER, in addition to the assessors parcel numbers ("APNs")
23 proposed for acquisition that were listed in the 2014 Draft DCE CM1 Property Acquisition
24 Management Plan (LAND-69) to prepare the figures.

25 LAND-58 was adapted from materials in the 2015 RDEIR/SDEIS and 2015 CER and is
26 based on a preliminary survey of available information regarding well locations and depths in
27 the vicinity of the proposed Tunnels. (See Hearing Transcript, November 10, 2016, pp. 82-83,
28 229-230.)

1 LAND-60 depicts Tunnels' intakes 2 and 3 in relationship to LAND member water rights
2 (see LAND-62) and the water delivery and drainage system of Reclamation District 744. Like
3 all of the figures, the map is adapted from the 2015 RDEIR/SDEIS and 2015 CER. As
4 explained by LAND witness, Russel Van Loben Sels, a farmer and trustee of Reclamation
5 District 744, LAND-60 was supplemented with information provided by him. It identifies the
6 location of the Reclamation District 744 water delivery and drainage system under the footprint
7 of proposed Delta Tunnels Intake number 2. (See also DWR-1, slides 23-25.) Those locations
8 were then placed on the Tunnels basemap. (See Hearing Transcript, Nov. 10, 2016, 46:21-
9 47:20.)

10 IV. CONCLUSION

11 As explained above, the information in LAND-3, LAND-4, LAND-5, LAND-6, LAND-7,
12 LAND-57, LAND-58, and LAND-60 is reliable and was prepared according to the normal
13 standards of care applicable to the development of such materials. As such, I see no reason
14 why these exhibits should not be accepted as evidence in this proceeding.

15 I declare under penalty of perjury under the laws of the State of California that the
16 foregoing statements are true and correct.

17 Executed on the 23rd Day of March 2017, at Sacramento, California.

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Erik Ringelberg