

1 SHR-701

2 Proposed Permit Conditions and California Waterfix Part 2 Rebuttal Testimony of

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4 For over two years, thousands of hours of effort have been expended by myself and others to try
5 to communicate to Waterboard hearing officers and others what the possible impacts would be from
6 DWR and USBR proposed actions from construction and operation of proposed intakes and tunnels
7 under any operation scheme. Per Waterboard instructions, hearing participants have been encouraged
8 to propose Conditions of Permit which might help to mitigate some of the negative impacts to the Delta
9 communities, farmers, landowners, businesses, recreation, residents and environment. I believe in
10 order for the hearing board to understand the below proposed Conditions of Permit, evidence for the
11 need of those conditions is appropriate to supply as well. The points and proposed Conditions of Permit
12 were compiled by me and are/will be offered into evidence to help hearing board officers and all other
13 California Waterfix participants who do not have opportunity to experience the Delta from the
14 waterside perspective to see just a tiny fraction of what we see and experience here in the Delta in real
15 life, not just on paper. My testimony and evidence does focus on the extremes of high flows and low
16 flows as examples of impacts which are not reflected in the averaged computer modeling of CALSIM II
17 and DSM2 often referred to during the course of the California Waterfix hearings Part 1 and Part 2.
18 Proposed conditions of permit expressed in this testimony are in addition or further support previous
19 testimony.

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- 21 1. Proposed Condition of Permit: DWR-1143 chart of operations criteria for proposed H3+
22 operations does not provide sufficient written guarantee of flows, in each waterway to protect
23 drinking water quality and surface flows and levels in the various natural waterways of the

1 Delta. However, the DWR computer modeling and testimony has clearly stated that fresh
2 water flows will be sufficient to keep the fresh water fresh, or under 300 EC per DWR witnesses,
3 in areas around Ryer Island, Steamboat Slough and other North Delta waterways. So simply
4 add a new chart with required water flow, water level, and water quality criteria for each
5 natural waterway of the Delta to assure no negative impacts from proposed new intakes and
6 tunnels. Monitoring stations at each end of every waterway will also help to assure that
7 diversion and discharges into each waterway do not result in unintended degradation of water
8 quality due to insufficient flow required for dilution. This is a necessary added monitoring
9 requirement because low freshwater inflows reduce the capacity of the waterway to dilute the
10 discharges into the waterway from normal Delta farming and agricultural activities. North Delta
11 waterways that would require additional monitoring stations are Steamboat Slough, Sutter
12 Slough, Miner's Slough, Georgiana Slough and the Sacramento River in several new locations
13 between Freeport and Rio Vista. Monitoring stations for the West Delta and all other Delta
14 regions would have additional monitoring stations, but the owners of lands in those areas
15 should define the locations. Note that for all monitoring stations, water quality at the bottom of
16 the waterway and also towards the surface of the water should be monitored continuously. **See**
17 **SHR-713. SHR-718 and SHR-719** are examples of other studies also reviewing monitoring of
18 Delta water quality. Proof of continual compliance with new requirements to meet M&I
19 standards, recreation and navigation requirements, and drinking water quality for humans and
20 animals will be required for all locations within the waterways of the Delta. Compliance would
21 be based upon real time data, not running averages or other convoluted, inconsistent
22 computations or formulas. **(SHR-717 example)** Those monitoring stations must remain live and
23 posting real time data a minimum of every 15 minutes online, in common readable format.
24 Salinity must be reported in parts of chloride (ppt) and electroconductivity (EC). In addition, for

1 any conversions for reporting purposes, the exact data and conversion formula must be
2 provided for each data set, each time a report is provided. **SHR-713** suggests proposed water
3 quality, water level, water flow, water temperature new monitoring stations for the North Delta,
4 and Waterboard should seek the advice of South and West Delta land and business owners for
5 the appropriate monitoring locations of those areas. Monitoring Stations would be paid for by
6 SWC through increasing per acre foot delivery charges to water recipients of diverted flows.,
7 but placement and monitoring of stations would be done by a water engineer firm approved by
8 North Delta land owners or NDWA. Based upon current negative impacts from DWR
9 management of Delta flows, Dwr-1031 range of alternatives would require modification:
10 require flow to increase in the Sacramento River, Steamboat Slough. Dwr-1071 water level
11 below intakes-what about Steamboat Slough levels? Page 18 and 19. Require water levels to
12 remain at navigable levels at all times including low tides. Navigable includes for power vessels
13 and ships with draft of a minimum of twelve feet in Steamboat Slough at lowest tides and flows,
14 and at deeper drafts for the larger vessels that are found on the Sacramento River between
15 Sacramento and Rio Vista Require fresh water to match pre-project water quality. **SHR-722** is a
16 video I made to show what navigation was like for a tall sailing ship with large keel, traveling up
17 Steamboat Slough and the Sacramento River to Sacramento prior to any flow modifications by
18 government agencies. The written description from 1850, Commander Ringgold, US Navy,
19 refers to natural waterway depths of eight (8) to twelve feet (12) with snags only along the rivers'
20 edge generally. Video is available at <https://www.youtube.com/watch?v=kSZTiiucq4> . At any
21 point in time where any monitoring station indicates violation of one of the water quality, water
22 level or water flow criteria, one, two or all three intakes must be shut down to the minimum
23 intake flow until such time as all monitoring stations show compliance. Repeated failure to
24 reduce diversion when violations are indicated will result in loss of right to operate the intakes

1 and a fine equal to three times the value of water that continued to be diverted into tunnels
2 despite shown monitoring station violations. Assessed violation funds will be paid into a fund to
3 cover damages, loss of income or other impacts from DWR/MWD excessive diversions which
4 caused the violations. Low flow impacts that can result in damages and cost: **SHR-702**.

- 5 2. Suggestion for Waterboard: Waterboard should require that accurate water conversion tables
6 be utilized for all computer modeling and reports submitted to Waterboard: See **SHR-717**
7 Does one acre foot of water equal 324,900 or 325,900 gallons of water? Does one cubic foot
8 per second of flow equal 646,320 or 646,272 gallons per day? In 2009, 2011, 2014 I brought this
9 issue to various DWR-Resources representatives, as I was trying to determine what is the correct
10 formula for converting cfs flow into gallons and acre-feet. This question was asked because it
11 was noticed that the formulas used by DWR were different than what USGS and other
12 government agencies use. DWR documents from 2000 to 2010 published conversion charts,
13 and one from 2001 related to model results, such as CalSim 1 (at that time) provide conversion
14 charts. Using an incorrect formula can result in an assumption of too much flow or too little
15 flow, depending on which conversion table was used. Considering how much each acre-foot
16 makes for water contractors, use of correct formulas would be important, one would think. As
17 an example, if DWR and SWC were underreporting diversions because of use of an incorrect
18 conversion formula when converting cfs to gallons to acre feet, the result would be additional
19 acre feet available for sale. Based on the chart shown in **SHR-717** (poster format), each
20 additional acre foot available for sale would generate approximate \$600 more income for SWC.
21 Multiply that by the number of cfs being underreported and it can equate to millions of acre
22 feet per year and hundreds of millions of dollars of additional income for DWR/SWC as the Delta
23 environment continues to decline in part due to the same underreporting or incorrect
24 calculating of diversions and flows remaining in the Delta. It is noted that for CalSim 3 DWR has

1 recently updated the conversion formulas, which may explain the differences shown in the flow
2 chart comparisons for that report. Perhaps California Waterboard should itself publish its own
3 water-related conversion chart and direct that all computer modeling and reports submitted to
4 Waterboard be certified by the report author and computer modeler(s) that the conversion
5 formulas used match exactly the conversion formula published by Waterboard. Slide and video
6 questioning flow data of DWR: <https://www.youtube.com/watch?v=VhSqjHt6CEw> but not
7 offered into evidence in entirety. That video just shows the calculation issues have remained
8 unaddressed for years. In any case, it seems reasonable that for Waterboard to do its job,
9 Waterboard should require full disclosure statewide for all diverters. Waterboard could publish
10 by map and count the diversion locations off every lake, river and stram so that concerned
11 citizens might be able to help monitor this important function of Waterboard.

- 12 3. Proposed Condition of Permit: Prohibited use of specific roads and waterways for construction
13 traffic for specific times of the year: California WaterFix revised eir/eis indicates Snudgrass
14 Slough will not be used for barge travel, but also does not provide enough description to
15 indicate how tunnel boring equipment, tunnel sections and the materials for tunnel sections will
16 be delivered to areas north of Highway 12. Mr. Bernarski testimony indicated that DWR and
17 MWD would leave it up to the Contractors to determine the best way to transport necessary
18 equipment and supplies. (Summary of what was said-not exact words) This is insufficient
19 description to assess impact, so I request that the transportation routes and travel methods as
20 shown on the map labeled **SHR-714** be expressly prohibited for construction of intakes and
21 tunnels: To avoid negative impacts from water transport, water impact, Steamboat Slough,
22 Sutter Slough Elk Slough and the Sacramento River between Sacramento to below or south of
23 Rio Vista may not be utilized for Waterfix intake or tunnel equipment or supplies transport
24 during the months of April through October, which are prime recreation boating and agricultural

1 activity months. Roads as highlighted on SHR-714 may not be utilized by intake or tunnel
2 construction transport trucks larger than one ton, anytime during the year when it is normal
3 harvest time for local farmers or it is prime recreation travel time, such as April through
4 November. DWR/MWD/USBR will be held liable for damages to all boats and docks along the
5 water rout if wakes or accidents occur and marinas or land owners with docks along the barge
6 traffic route will be entitled to loss of income based upon posted rates of Sacramento Marina
7 (City) dockage for all months of barge traffic. Since large and loud helicopters have already
8 been used to begin changes to electrical services in the North Delta, noise impacts to recreation
9 customers have already been experienced on Ryer and Grand Islands in spring 2018. Therefore,
10 it is proposed that if any helicopters or other form of loud flying vehicles is use to transports
11 intake or tunnel construction equipment or parts, that such delivery flights may not fly over any
12 Delta towns or communities, marinas or RV parks or housing communities at any time. Waterfix
13 contractors must be instructed to design flight patterns that avoid creating risk to persons on
14 the ground and also avoid creating noise due to the aviary vehicles or equipment.SHR-724 and
15 SHR-711 should be viewed as part of this testimony if needed to show examples.

- 16 4. Proposed Condition of Permit: Require study and peer reviewed report to verify intakes of the
17 size and capacity of those proposed by California WaterFix proponents will be safe for humans:
18 There is no description of any safety feature in case there is intake malfunction. For example,
19 recently a man died because he was sucked into an intake at “Empire Cut” off the San Joaquin
20 River near Lower Jones Tract. Please see **SHR-712**. Imagine if the proposed intakes in the North
21 Delta malfunctioned and started sucking people against the screens holding them there until the
22 screen-clearing wipers moved them off. Witnesses for proposed intake facilities have described
23 low velocity of flow into the intakes but have not provided any details of safety precautions if
24 pumping would cause higher velocities that could harm fish and humans. For example Dwr-1035

1 modeling velocities do not make sense if one refers to the map. How do the water engineers
2 regulate velocity past the fish screens? Withhold flow? What happens where there is a conflict
3 between need to freshen the Delta and keep velocity low? Waterboard and/or US Coast Guard
4 could require clear marking at every intake statewide that could pose risk to humans on the
5 waterside. Markers on the waterside should indicate the end of the pipe or intake in the water
6 where suction might happen. **SHR-712** last page of pdf suggests state-wide approach to
7 protecting humans from risk of malfunctioning intakes and also sink holes created when a
8 construction project does not go as planned, as could easily be assumed for a tunnel projected
9 expected to last up to eleven years in the Delta! To protect the cornerstone of California's
10 drinking water system, common sense says any mining activity that could create sink holes in
11 the Delta should be permanently prohibited. **SHR-704**.

- 12 5. Additional information offered in order to fully understand possible negative impacts to the
13 North Delta waterways: During Part 1 of California Waterfix hearing, DWR provided SHR with
14 two chart series which indicate what flows would remain on the North Delta waterways if
15 proposed intakes were operational. See **SHR 350** and **352**. DWR computer modeling witness
16 Tata Smith and DWR attorneys confirmed during Part 2 that despite the revised operations
17 referred to as H3+ the modeling indicated the flows and splits between the North Delta
18 waterways would be the same as what is shown in SHR-350 and SHR-352. (Paraphrased)
19 However, since DWR in 2014 through to current dates has been withholding flows into the
20 North Delta, suspending the North Delta into drought flow status it appears, it can be shown
21 that the flow splits do not match the computer modeling provided by DWR. **SHR-253** is an
22 example of impacts from low flows in drought time, of the level of flow proposed by DWR for
23 summer months. Compare SHR-352 to SHR-703. **SHR-703** is a video showing the flow splits
24 with Freeport flow at historic lows, in 2018. SHR-702 shows low flow impacts on Steamboat

1 Slough and Sacramento River, including the increase of invasive water weeds, degradation of
2 restoration sites claimed by DWR

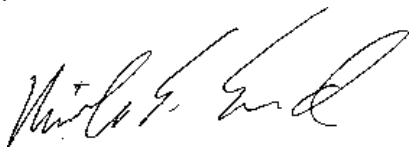
3 6. Proposed Condition of Permit: DWR revised its data to recognize more wells and gas or oil wells
4 within the footprint of the proposed tunnels and intakes. However, it appears the existence of
5 additional gas wells, in particular, have continued to be ignored by the drafters of proposed
6 intakes and tunnels. As a condition of permit, complete survey and report of all known and
7 unknown drinking water wells, natural gas wells, wastewater wells and oil wells within the foot
8 print and within vibration-range of the tunnel footprint should be required to adequately assess
9 potential risk and damage. As a start, please see **SHR-704**, a 2018 new application for Staten
10 Island. It should be a requirement that DWR and/or SWC be financially liable for all damages to
11 all water, oil and gas wells within vibration range of tunnel and intake footprints. This requires
12 that the locations of all such wells and owners be known, that the current condition be known
13 and documented, and that there be an agency or representative with funding available to
14 quickly resolve claims of damage. In addition, if tunneling causes rupture of a gas well,
15 tunneling operations must be shut down until such time as new evidence would be presented to
16 Waterboard to verify no additional rupture will occur. Please see **SHR-705, SHR-706, SHR-707**
17 **and SHR-708**, all of which are public maps or records found online through State of California
18 online resources which could have been accessed by California Waterfix drafters, had those
19 drafters desired to provide full disclosure of potential impacts.

20 7. Proposed condition of Permit: Establish and maintain fund to reimburse Delta Land owners for
21 damages caused by DWR managements of high flows and low flows through the Delta. Cost of
22 Water deliveries to State Water Contractors would include at least a ten percent (10%) increase
23 per acre foot sold and delivered to water contractors in other areas of the state so that a fund
24 could be created and maintained from which damages to Delta area lands, businesses and

1 persons could be paid. Fund could be managed by designated county persons in each Delta-
2 area county, or by another local Delta entity dedicated to protecting the Sacramento San
3 Joaquin Delta humans, lands, waterways and businesses as well as aquatic and natural
4 environment. ~~It seems DWR rarely reports to the media or any controlling or oversight agencies~~
5 ~~or legislature the real impacts of DWR actions, and rarely acknowledges failures to comply with~~
6 ~~diversion restrictions, as exemplified by Mr. Porgans testimony and evidence. The Womack~~
7 ~~family also has provided examples from down by Clifton Court Forebay. I am providing real life~~
8 ~~examples of impacts from DWR actions in just the last few years.~~ SHR example is the cost to
9 resolve degradation of the local drinking water which records show were excellent until
10 sometime around 2010. **SHR-709** These examples are intended to demonstrate for the
11 Waterboard how decisions by the Waterboard and actions by DWR and USBR impact the Delta
12 people and businesses and agriculture, and so far DWR fails to recognize such impacts in reports
13 or assessments when planning changes such as proposed Waterfix tunnels. Please see **SHR-720,**
14 **SHR-721, SHR-722.**

15 Finally, I wish to declare that I personally prepared the evidence to support my testimony, but
16 that most of the evidence consists of screen prints and downloads of data and records which I
17 collected and compiled over a number of years. The videos were made by recording live internet
18 connections to the websites shown on the screen. Other video or photos were shot by me at the
19 times referenced in the video or photos.
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21 I declare under penalty of perjury the above is true and correct to the best of my knowledge.
22 Submitted by

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27 Nicole S. Suard, Esq

28 Managing Member, Snug Harbor Resorts, LLC 7/11/2018
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