Tentative Cleanup and Abatement Order

John D. Sweeny and
Point Buckler Club, LLC

**Description of Exhibit Previously Provided
with Prosecution Team's May Submission**

Exhibit 21

Revised Tentative Cleanup and Abatement Order

Tentative Cleanup and Abatement Order

John D. Sweeny and
Point Buckler Club, LLC

Description of Exhibit Provided by Hard Copy and Electronically

Exhibit 22

Experts' Response to July 11, 2016 Evidence Package (includes attachments)

Experts' Response to July 11, 2016 Evidence Package

Prepared by: Stuart Siegel, Peter Baye, and Bruce Herbold

July 21, 2016

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Attachment 1. Contracting of February 10, 2016 and June 29, 2016 Aerial Photographs

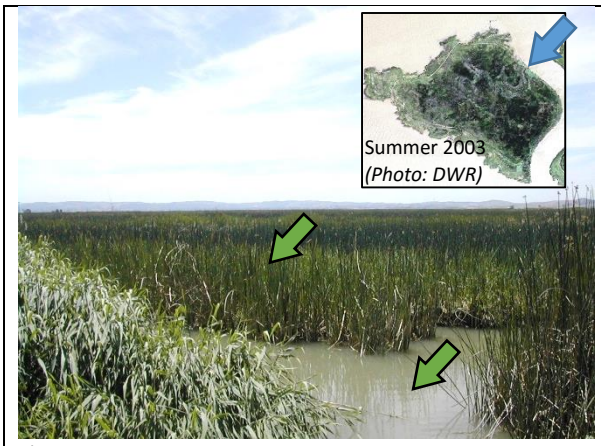
Key Errors and Misrepresentations in July 11, 2016 Evidence Package

The positions in the July 11, 2016 Dischargers' Opposition to Issuance of Cleanup and Abatement Order Brief (Opposition Brief) Evidence Package contain several key errors and misrepresentations that individually and collectively negate their claims made regarding baseline conditions and extent of State and federal regulatory jurisdiction:

1) The Dischargers erroneously claim Point Buckler Island (the "Site") was not tidal marsh since 1993.
2) The Dischargers misunderstand what a tidal marsh is and thus how its characteristics are evidenced
3) The Dischargers are apparently confused about the use and methods of historical aerial photograph analysis.
4) The Dischargers challenge to High Tide Line determination is not material to jurisdictional extent because Point Buckler is more than 1.5 feet lower.
5) The Dischargers erroneously assert absence of levee overtopping evidence.
6) The Dischargers claims of managing as a duck club are not consistent with factual evidence of site management.

1. Point Buckler Was Tidal Marsh since 1993

Evidence presented in the May 2016 Technical Report is correct and valid and establishes with no uncertainty that full tidal action had resumed by 1993 and was present until 2014 when Mr. Sweeney constructed new levees. During this period, Point Buckler was a tidal marsh subject to daily tidal exchange between its channels and ditches and the surrounding Bay and to periodic higher tide exchange between the marsh surface and the channels and adjoining Bay waters. This conclusion is based upon historical aerial imagery (Appendices G and H of the May 2016 Technical Assessment), a 2003 site visit to Point Buckler by Stuart Siegel, vegetation mapping by the California Department of Fish and Wildlife from 2000 to 2012 (Figure H-2 in the May 2016 Technical Assessment), and it is corroborated independently by the U.S. Fish and Wildlife Service in its National Wetland Inventory and the San Francisco Estuary Institute (SFEI) in its EcoAtlas (Figure 7 in the May 2016 Technical Assessment). Further, the declaration by Mr. Sweeney that SFEI changed its habitat designation upon his urging is incorrect. SFEI stated in its June 17, 2015 email to Mr. Sweeney (Exhibit 10 of Mr. Sweeney's Declaration) that it would remove the designation of the property as having been restored to tidal action <u>under a CWA Section 404 permit</u> as they could not validate that information. SFEI stated it would also review the habitat classification for Point Buckler, but as of July 18, 2016, there is no change in classification in the EcoAtlas from the entire island being tidal marsh to any other habitat classification.



A) May 28, 2003, looking into interior tidal marsh from breach on northeast side of Point Buckler. Note healthy tidal marsh vegetation, tan-brown water with fine suspended sediments.

B) March 2, 2016, looking into interior diked marsh from new levee, very close to same location as Photo A. Note absence of tall emergent marsh vegetation, exposed channel bank with drained soils, and green algae-laden ditch water.

Photo 1. Comparison of Pre-Existing Tidal Marsh vs. Same Location After Diking and Draining
Photo sources: Stuart Siegel (A is Photo 1 in May 2016 Technical Assessment)

2. Tidal Marshes: Channels Have Daily Tidal Flows and Marsh Plains Have Periodic High Tide Flows

The May 2016 Technical Assessment correctly identified the geographic extents of daily "in-channel" and periodic "overbank" tidal inundation, both areas subject to State and federal jurisdiction, as encompassing nearly the entirety of Point Buckler. Mr. Sweeney and his advisors incorrectly reject overbank tidal inundation as having occurred at Point Buckler and incorrectly assert that the Site's marsh plain is not subject to the ebb and flow of the tides and thus to State and federal regulatory jurisdiction (Opposition Brief page 21 lines 19-29 and page 22 lines 1-4). Damming the levee breaches blocks the daily tidal exchange with the channels and the Bay, and constructing a levee on the marsh plain blocks the periodic spring tide tidal exchange with the marsh surface.

Vegetated upper intertidal marsh plains such as those at Point Buckler do not have daily tidal flooding, but only periodic tidal flooding. Only low intertidal marshes below MHW flood daily or nearly so. Mature tidal marshes around the globe are found relatively high in the tidal frame where only some high tides reach (Figure 1). Tides have strong seasonal components to their heights, with the highest tides occurring around the winter and summer solstice. Winter tides tend to be higher in the San Francisco Estuary because of our Mediterranean winter-wet, summer-dry climate. Prolonged droughts like we have been experiencing since 2011 (coincident with Mr. Sweeney's purchase of Point Buckler) further depress high tides due to reduced Delta outflow and high pressure ridges over California. In the intervals between these winter and summer "spring" tides, tidal marsh plains can be exposed for weeks or more at a time. Tidal marshes are 100% within State and federal regulatory jurisdiction. The Opposition Brief (pages 22-24), for the reasons stated above and as extensively evidenced by historical aerial photography (Appendix G of the May 2016 Technical Report), mistakenly asserts the interior was

dry land before the levee was repaired. Consequently, the entirety of the Discharger's arguments about lack of jurisdiction and what follows from it are incorrect.

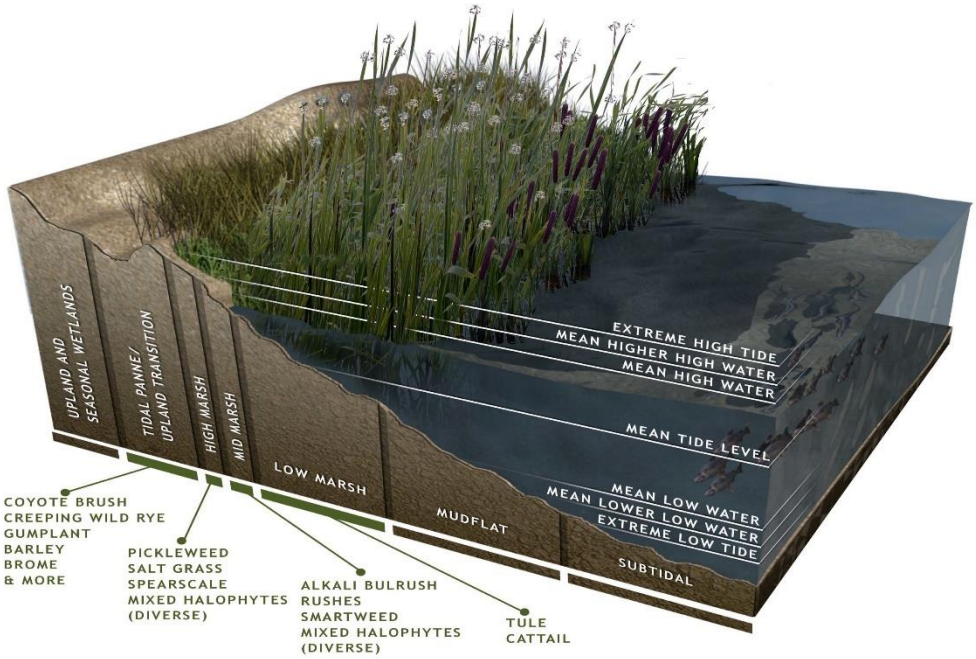


Figure 1. Typical Cross Section of a Brackish Tidal Marsh
Source: Delta Stewardship Council 2010, Delta Ecosystem White Paper.

Relationship of Overbank Tidal Flows to State and Federal Jurisdiction

The Opposition Brief (Section III, pages 14-20) carried the conflation of Corps jurisdictions into where and when tidal flows were at Point Buckler before new levees were built. The Dischargers reference "daily tidal flows" which occurred in all the tidal channels and ditches (Rivers and Harbors Act [RHA] and Clean Water Act [CWA] jurisdiction), and they reject or omit the "periodic tidal flows" (CWA jurisdiction) that are the higher high tides that reach high enough to flood the marsh plain. Over the past 20 years, corresponding to a full tidal epoch (see discussion of tides below), approximately 12% of the high tides at Port Chicago exceeded the marsh plain elevation interior and exterior to the new levees as surveyed on March 2, 2016 (Figure 8). Looking only during the time period in 2014 when Mr. Sweeney constructed the new levee (Figure 9), approximately 8% of the high tides exceeded the surveyed interior and exterior marsh plain elevation. This difference may be due to drought conditions preceding and beyond 2014 that have reduced high tide levels persistently (Figure 8).

Figure 2 shows the geographic extent of daily "in-channel" and periodic "overbank" tidal inundation. The overbank tides occur infrequently (as much as a few times a month to none for several months), these tides last briefly (anywhere from a few minutes up to 2-3 hours at the peak of the high tide event), and they are fairly shallow (from a few inches to less than 2 feet on the most extreme and rare high tides).

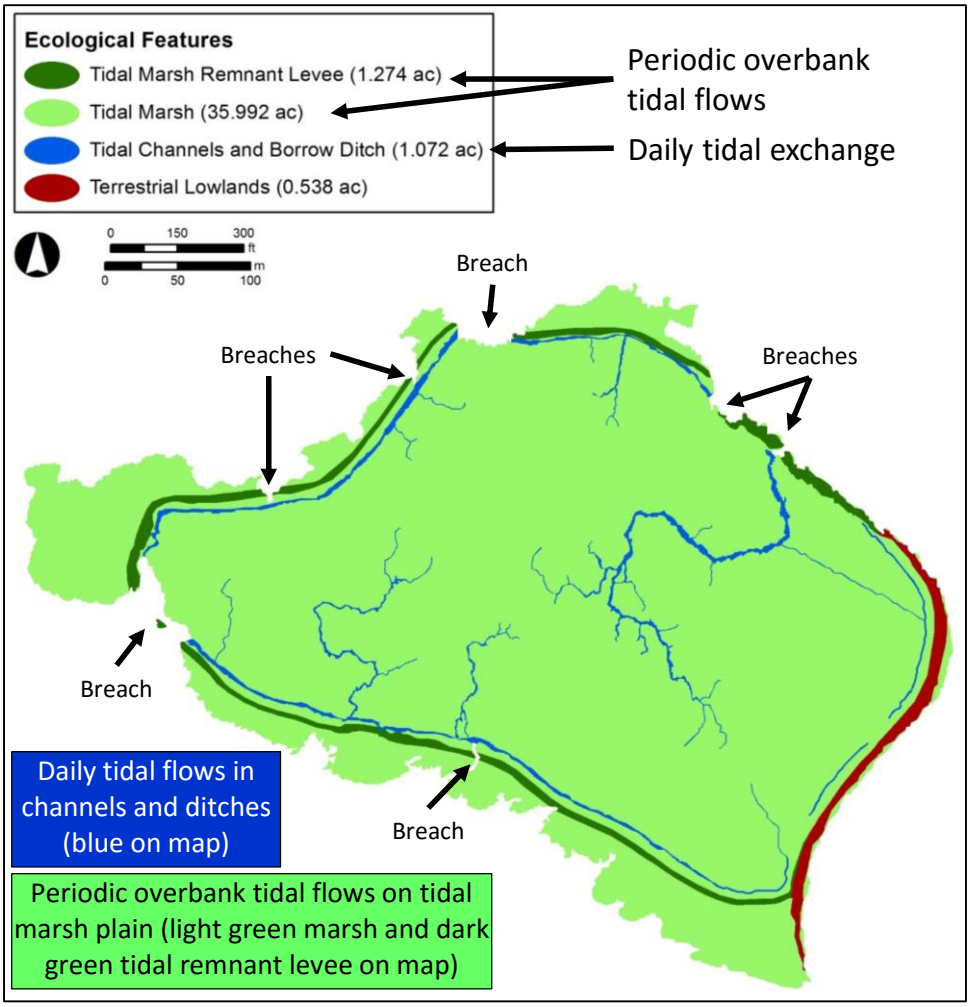


Figure 2. Daily and Periodic Tidal Exchange Geographic Extents, Baseline Conditions

Lack of Relevance of Sweeney Declaration of No Point Buckler Inundation Observed

We cannot dispute Mr. Sweeney's Declaration (Item 18) that he did not see the island under water before, during or after levee construction. However, there is no relevance to that declaration as to whether inundation did or did not occur, for at least three reasons.

First, the brief and very shallow overbank inundation would have been hidden within the extensive cover of tall, dense vegetation. It is very conceivable that an equipment operator would not have noticed this inundation, especially if their attention was focused on equipment operations. In the brackish tidal marshes of Suisun, the tall, dense vegetation (cattails, bulrush, tules) generally obscures spring high tide water surfaces that rise above the marsh plain, tides impossible or very difficult to see (Photo 2A), except at locations of unvegetated gaps on the marsh plain or at the rare vegetation patches with prostrate, low vegetation types (Photo 2B).

Suisun Marsh brackish tidal marsh vegetation generally masks maximum winter "King" tides*. Maximum "King" high tide (perigee spring high tide) at (A) tidal fresh-brackish marsh of Rush Ranch, Suisun Marsh and at (B) tidal salt marsh at Muzzi Marsh, San Francisco Bay, December 13, 2012. The same extreme high tide water surface overtops relatively short salt marsh vegetation at Muzzi Marsh (B), but is visible only over patches of low-growing saltgrass at Rush Ranch (A), where taller bulrushes, cattail, tules, and rushes form a canopy that covers the water surface.*

Photo 2. Overbank King High Tides at Rush Ranch, Suisun Marsh and Muzzi Marsh, Corte Madera

Second, one of the components of the mixed semi-diurnal tides of the San Francisco Estuary (see discussion below) in combination with seasonal tidal cycles is that, in general, the highest spring tides occur at night in the summer and in the day in the winter. There is considerable variability on a day-to-day basis as well as a time lag the farther up-estuary one goes, but this generality still applies. Thus, the ability for personal observation of the higher spring tides depends upon being physically present at the right time and location to make the observation. Figure 3 shows the time of day that high tides occurred in 2014 throughout the time Mr. Sweeney was constructing the new levee. The opportunity to observe daytime overbank tidal inundation is limited to six tides in February 2014. By the time of the later summer and fall 2014 daytime high tides, much of the new levee had been constructed including filling in the breaches, preventing those tides from reaching the island interior.

Third, during the February 2014 high tides, Mr. Sweeney worked atop the remnant 1985 levee. Construction equipment was thus sitting on comparatively firm ground (Figure 4). The high tide at Port Chicago reached only 0.46 ft at maximum above the marsh plain elevation during those February 2014 tides. The maximum length of time that water may have shallowly flooded the Point Buckler marsh was no more than 3 hours. The maximum depth of water would have lasted only very briefly at slack high tide (Figure 5). It is very possible that an equipment operator would not have noticed this inundation.

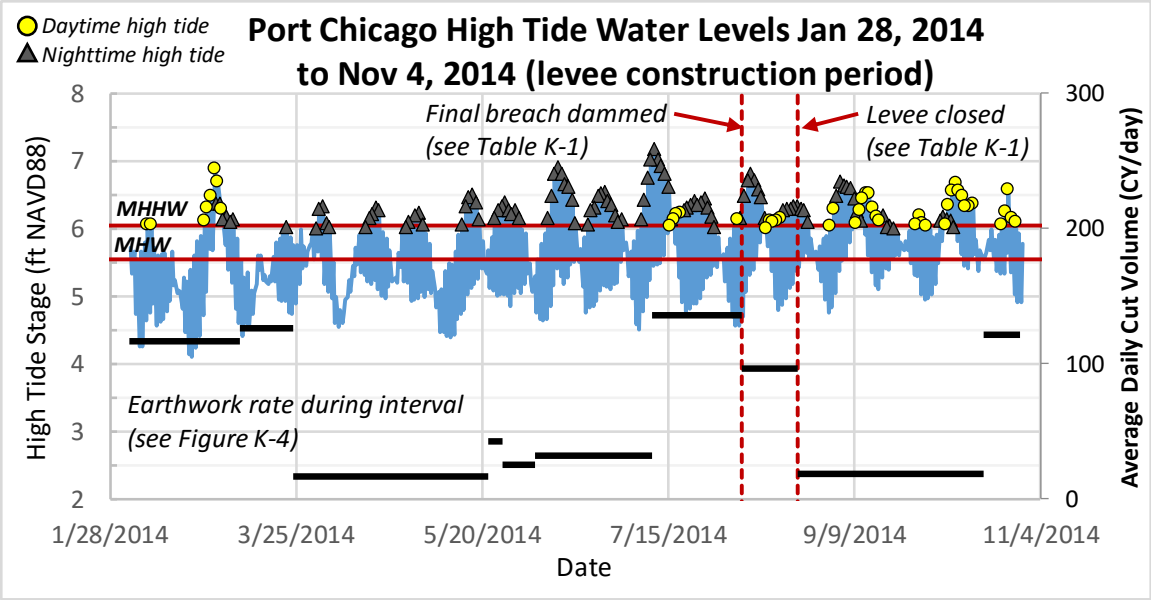


Figure 3. Day/Night Higher High Tide Occurrence and Earthwork Intensity during 2014 Levee Construction

Daily earthwork rate (solid black horizontal lines below tides), high tides >6 ft occurring during daylight (yellow circles) and during nighttime (grey triangles). Note that only six high tides >6ft occurred during the daytime hours during the early phase of levee construction.

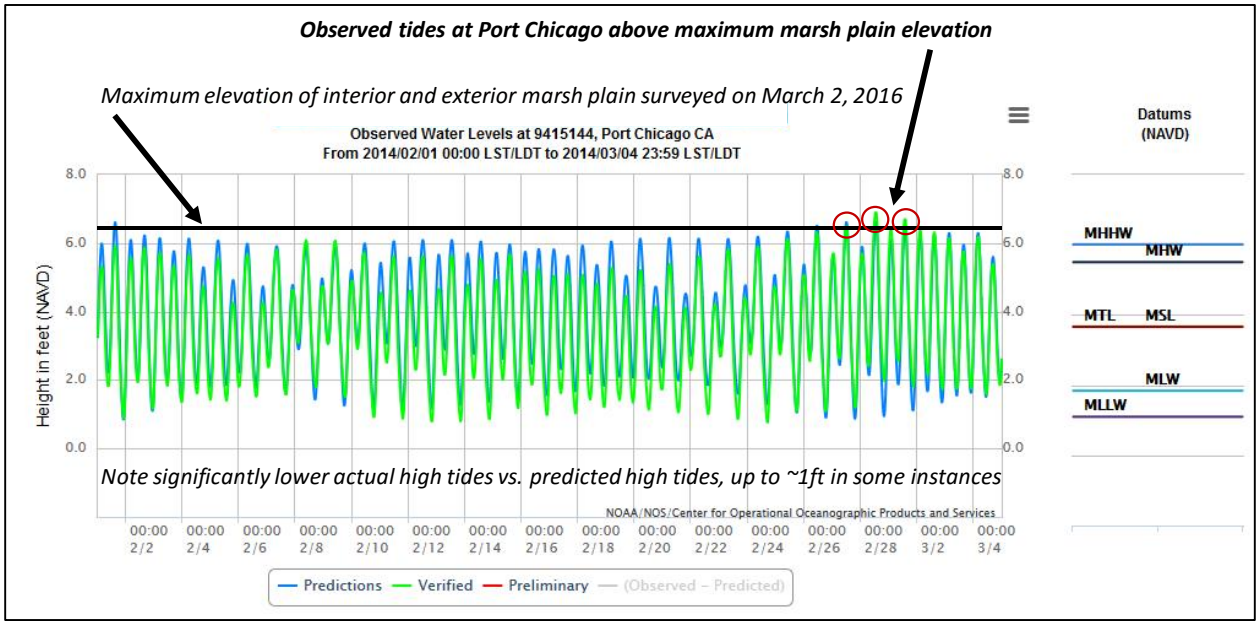


Figure 4. Predicted and Verified Port Chicago High Tides, February 1 to March 4, 2014

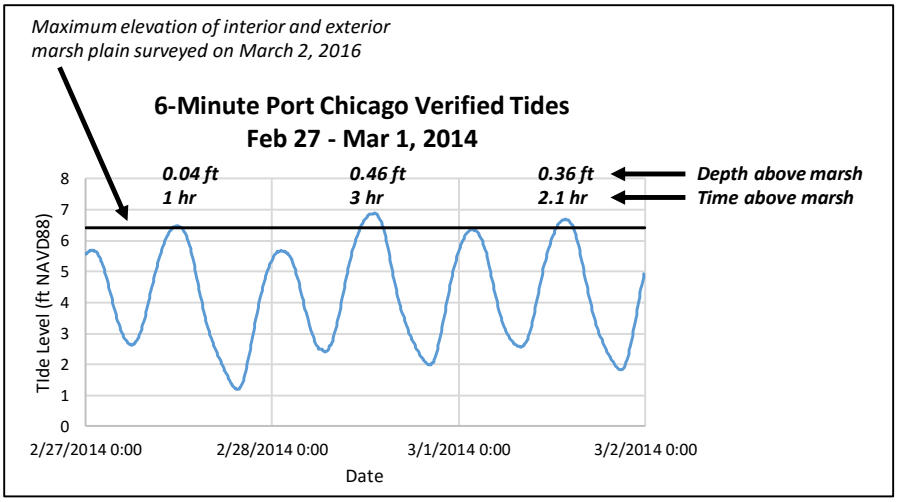


Figure 5. Port Chicago Verified 6-Minute Tides with Depth and Duration Exceeding Maximum Interior and Exterior Marsh Plain Elevation at Point Buckler Surveyed March 2, 2016

The tide data of Figure 3 indicate that the tides reached the height for island inundation and we have established (Photo 2) that the type of tall vegetation on the island can readily obscure tidal inundation, thus Mr. Sweeney's observations cannot support his assertion that no inundation of the island occurred.

3. Historical Aerial Photograph Analysis is Standard Practice and Methodologically Valid

The challenges to use and methods of historical aerial photograph analysis are without merit. **By definition, no historical aerial photographs can possibly be flown for a specific unknown future analytical application. Use of historical aerial photograph analysis is standard practice in the environmental industry and accepted (and often required) by government agencies.** Further, Mr. Huffman's Declaration that "none of the aerial photographs was taken specifically for the Technical Report" is factually incorrect. He is correct that all the historical photographs, up to and including the November 19, 2015 aerial photograph, were not taken specifically for the Technical Report (see Appendix D of the May 2016 Technical Report). **However, Mr. Huffman is incorrect in his assertion in regard to the February 10, 2016 and June 29, 2016 aerial photographs** (Figure D-36 of the May 2016 Technical Report and Exhibit 12d in the July 1, 2016 Prosecution Team Evidence Submittal)**, which were in fact contracted to be flown specifically for the Technical Report and Evidence Package** (see Attachment 1).

The challenge that aerial photographs were not color *standardized* has no relevance because the aerial photographic analysis included known reference site wetlands in the same photographs as Point Buckler for the assessment of tidal versus non-tidal wetland contrasts over seasons. This provides within-photograph standards for comparison of Point Buckler Island wetlands based on "control" or known reference conditions, particularly on adjacent Simmons Island. Accurate matching of a known perennially moist tidal marsh reference site, and distinguishing them from non-tidal seasonally dry

marsh in a time-series of aerial color photographs, does not require absolute color correction of photographs. **When known reference sites of tidal marshes and non-tidal marshes occur in the same photograph as the marsh image being tested, which is the exact condition for the analyses completed in the May 2016 Technical Assessment, only relative color contrasts that distinguish green (live above-ground vegetation) from straw, tan, or brown (non-green, dry above-ground vegetation) against known tidal marshes is necessary.** The relative, not absolute, spectral or color "signatures" of green above-ground marsh vegetation late in the dry summer-fall season in tidal marshes are a diagnostic feature distinguishing them from duck clubs with summer-dry, non-tidal marshes of Suisun Marsh that characteristically exhibit straw (dry dead above-ground shoots, leaves), white (salt or sun-bleached algal mats) or rusty brown (dried mud with iron oxide staining) in late summer and early fall, until they are flooded artificially.

The fringing tidal marshes of west Simmons Island, directly adjacent to Point Buckler Island (outboard of Simmons Island levees, open to Suisun Bay and directly across Andy Mason Slough) were used as the "control" or reference tidal marsh to compare Point Buckler Island vegetation in the same aerial photography of the same date. Both the known fringing tidal marsh of outer Simmons Island and the "test" marsh of Point Buckler Island were compared with the known reference non-tidal managed marsh of interior Simmons Island. The vegetation and soil signatures in aerial photographs were unambiguous and unmistakable over the entire time-series showing seasonal vegetation changes contrasting tidal and non-tidal seasonal marsh. The time series used specifically for this analysis is from 2002 to 2012 (see Appendix H of the May 2016 Technical Report). Aerial photograph interpretation relied on subregion-specific Suisun Marsh professional investigations of tidal marsh and diked marsh vegetation conducted over 25 years for federal regulatory/resource agency and private wetland consulting, covering in ground-based surveys and aerial photograph interpretation (historical black and white, color and false-color infrared imagery). Point Buckler Island vegetation hue, texture, and pattern consistently corresponded with tidal marsh outboard of Simmons Island levees, and contrasted with non-tidal marsh of interior Simmons Island, inboard of levees.

Dr. Peter Baye performed of multi-year time-sequence wet season and dry season Suisun Marsh aerial photograph interpretation. He is a regional coastal wetland plant ecology expert who has specialized in study of San Francisco Estuary tidal marsh plant ecology for over 25 years, and who co-authored peer-reviewed publications on Suisun Marsh vegetation with other leading experts. His experience specific to Suisun Marsh plants includes both ground-based investigations and interpretation of aerial photography, including true color and false-color infrared photography, beginning with his compliance inspections of Simmons Island for the U.S. Army Corps of Engineers Regulatory Branch in 1992.

The interpretation of the multi-year time sequence of geomorphology of Point Buckler and in particular the formation of natural levee breaches and similar features was performed by Dr. Stuart Siegel. He is a regional wetland scientist and geomorphologist who has specialized in the hydrology, geomorphology, and restoration of tidal marshes in the San Francisco Estuary for over 30 years, and who co-authored leading publications on Suisun Marsh tidal marshlands and restoration. His experience specific to Suisun Marsh is extensive, going back to the late 1980s and involving research projects, serving as the Science

Advisor for development of the Suisun Marsh Plan including lead author on the tidal marsh and aquatic habitats conceptual model, lead author of the Suisun Marsh Conservation Strategy, author of a chapter on climate change issues in Peter Moyle's 2014 Suisun Marsh book, designing and monitoring tidal restoration projects in the Marsh, and developing managed wetlands management practices aimed at promoting water quality in tidal sloughs and the associated Beneficial Uses.

4. High Tide Line Determination is Valid and, Because Site Elevations Are Well Below HTL, the Challenge is Inconsequential for Jurisdiction

The determination of the High Tide Line presented in the May 2016 Technical Report is valid and in fact is an underestimate based on newly identified information, the technical challenges to its establishment are not supported and, because the entire island lies more than 1.5 feet below HTL, the challenge has zero effect on any aspect of the findings presented in the Technical Report. Related to these findings, all the challenges regarding the wrack line are also immaterial as it served solely as an additional line of evidence to establish HTL.

The May 2016 Technical Assessment Underestimated HTL, MHHW and MHW

In responding to the Opposition Brief, we have identified a fourth line of evidence we did not identify or include in the May 2016 Technical Assessment for establishing tidal datums at Point Buckler: the NOAA-provided multiplier values to obtain tide predictions for Point Buckler[1]. NOAA provides tide predictions for 12 locations around Suisun Marsh, Point Buckler being one of those stations. For each station, NOAA established a "height offset" multiplier for generating its tide height predictions, to be applied to its high precision tide predictions for Port Chicago to establish the subordinate station tide prediction. For the Point Buckler NOAA tide prediction location, NOAA has established a high tide multiplier of 1.12 and a low tide multiplier of 1.08[1]. If we apply this NOAA-defined multiplier value, we obtain the MHW, MHHW and HTL values shown in Table 1. These values are considerably higher than our calculations in the May 2016 Technical Report. We have elected in this Experts' Response not to invest resources into applying these updated tide height values because the change to any findings or conclusions of the May 2016 Technical Report would be adverse to the Discharger. **What these findings do establish is that all of the challenges in the Opposition Brief and Declarations have no bearing on any of the findings in the May 2016 Technical Report.**

[1] http://www.tidesandcurrents.noaa.gov/noaatidepredictions/NOAATidesFacade.jsp?Stationid=9415227

Table 1. Updated MHW, MHHW and HTL Values, Which Render all HTL Challenges Immaterial

Datum	Water Surface Elevation (ft NAVD88)		
	Port Chicago calculated for 1997-2016 tidal epoch[1]	Point Buckler applying 2/17/2016 high water mark adjustment[1]	Point Buckler applying NOAA-provided multiplier[2]
HTL (high tide line)	7.92	8.2	8.87
MHHW (mean higher high water)	6.04	6.31	6.76
MHW (mean high water)	5.54	5.81	6.20

Notes:

[1] From Table I-1, May 2016 Technical Assessment

[2] From applying the NOAA high tide multiplier of 1.12 for Point Buckler noted above.

The definition of the High Tide Line in the Clean Water Act is found in 33 CFR Part 328.3(d) and its extent is illustrated in Figure 6:

> The term "**high tide line**" means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the fore shore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm. [Emphasis added]

The regulatory definition of High Tide Line expressly excludes irregular extreme storm-elevated rise in water levels, such as extreme storm wave run-up or storm surges.

The regulatory definition of High Tide Line does not expressly exclude calm-weather, non-storm high tides influenced by prolonged El Niño (ENSO) elevated sea level above predicted astronomic tides. ENSO events are not "storms", "storm surges" or "piling up of water against a coast by strong winds", but are recurrent (periodic) natural climate-driven hydrologic events affecting tidal heights. ENSO events were not scientifically known at the time HTL definition was made by rulemaking.

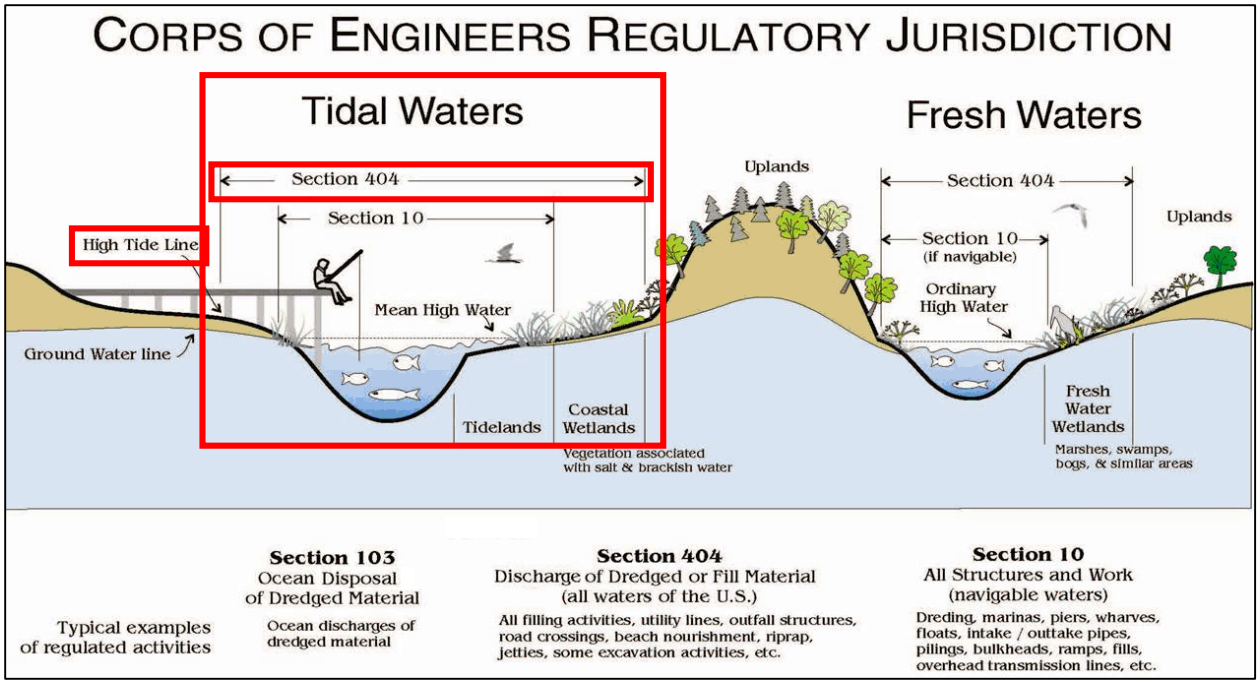


Figure 6. Corps of Engineers Jurisdiction Section 10 and Section 404
Source: U.S. Army Corps of Engineers (included as Figure N-1 in Technical Assessment [Siegel Env 2016])

The Evidence Package expressed misunderstanding regarding federal jurisdiction at Point Buckler. Jurisdiction under the CWA applies at Point Buckler, and that jurisdiction extents to the High Tide Line (Figure 6). All of Point Buckler except perhaps the eastern remnant levee are below the High Tide Line (see topic #4 below).

The Corps of Engineers has two geographic jurisdictions in tidal waters: (1) Section 10 of the Rivers and Harbors Act (RHA) which covers "**navigable waters of the United States**" up to MHW, and (2) the more expansive Section 404 of the CWA which covers all "**waters of the United States**" including all RHA Section 10 jurisdiction <u>and</u> up to the High Tide Line (HTL; see explanation below). CWA Section 404 jurisdiction below HTL may also include "special aquatic sites" such as "wetlands", "vegetated shallows", and "mudflats". Figure 6 from the Corps of Engineers Regulatory Program web site (emphasis added) clearly illustrates the relationship of these two jurisdictions. At Point Buckler, **Waters of the State** are at least as extensive as Waters of the U.S. Jurisdiction under CWA Section 404 is not limited to areas below Mean High Water that are subject to daily ebb and flow of tides. Section 404 includes all areas below the highest periodic predicted tides throughout any 18.6-year tidal epoch, including the highest winter and summer solstice spring tides.

The Evidence Package conflated these two distinct RHA Section 10 and CWA Section 404 tidal jurisdictions and the distinction between the broader "Waters of the U.S." and its subset category "wetlands" (Opposition Brief Section III A-B and declarations cited within) and then relied on that conflation in discussions of other issues such as high tide line, tidal inundation observations and extents, three-parameter wetland delineations, and beneficial use harm. Specifically, the broader Section 404

jurisdiction with its HTL elevation extent and including both "wetlands" and "waters" is what applies at Point Buckler, not the narrower Section 10 jurisdiction to MHW elevation. **The Opposition Brief relied upon this significant error in other areas of the Brief's analysis. Each of those subsequent points is addressed elsewhere in this Experts' Response.**

Several Challenges Related to Tide Elevations Are Without Merit

The challenges to this methodology and its findings in the Opposition Brief Huffman Declaration Items 4, 5, 6, and 7 contradicts the CWA definition of high tide line and methods for its determination.

The challenges to this methodology and its findings in Bazel Declaration Items 27, 28, 29 are all erroneous and irrelevant to the HTL analysis and all declarations and objections in the Opposition Brief and Huffman Declaration based on that analysis:

1. **Tides Ranges Around Most of Suisun Marsh Are Higher than at Port Chicago.** The Opposition Brief suggests that tides may be lower at Point Buckler than at Port Chicago (page 17 lines 13-16), and introduces a DWR station on Montezuma Slough at its intersection with Hunter's Cut and a lower tide range is introduced as evidence. The national authority on the tides is NOAA, and Figure 7 illustrates variable tide ranges around Suisun Marsh. The Opposition Brief and the Bazel Declaration Exhibit 25 rely upon outdated DWR tide station data, and the range of the tides at that station (MLLW to MHHW) is in line with NOAA-reported tide ranges in the vicinity (Figure 7).

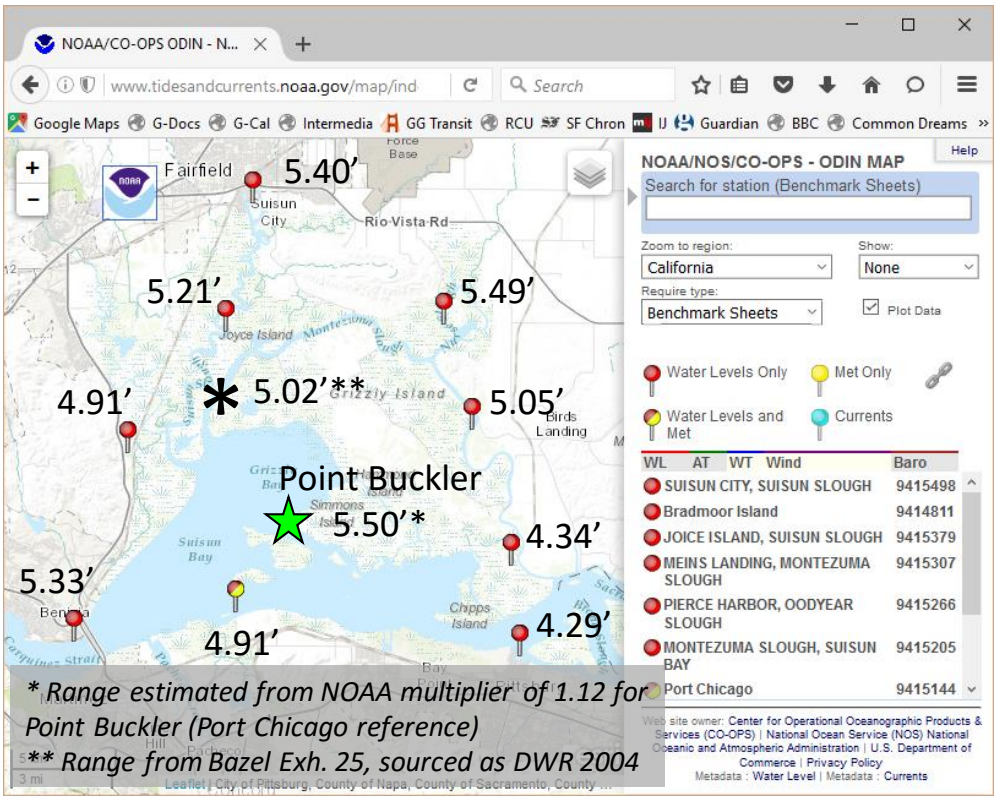


Figure 7. Tide Ranges at NOAA Stations Around Suisun Marsh

Source: www.tidesandcurrents.noaa.gov.

2. **The many challenges to the HTL determination in the Opposition Brief pages 15-21 are all factually mistaken**
    a. The "real high tide line" is whatever water surface elevation meets the definition in the CWA. The Opposition Brief errs in its understanding of "high tide". HTL is not a daily occurrence, it is a very infrequent occurrence.
    b. Since the levee was constructed, the highest recorded tide at Port Chicago is 7.29 ft NAVD88, well below the 8.2 ft NAVD88 HTL. Between the ongoing drought and its associated high pressure ridge over California that results in below-predicted tide heights, and being at a place in the 18.6-year tidal epoch cycle where gravitational forces may not be aligning for peak high tides, tides above 8.2 feet have not occurred. There have been two tides above 8.2 feet in the past eleven years, in 2005 and 2006 (see Figure I-2A in the May 2016 Technical Report).
    c. Since the levee was constructed, there have been about 75 high tides above the lowest levee centerline elevation surveyed on March 2, 2016. It is important to note that the survey was of the levee centerline and not the bayward levee crest, and flowing into the Site interior requires a complete flow path across the entire levee width. **It is also important to note that the depth of these 75 high tides above the lowest survey levee centerline elevation averaged 0.2 ft with a maximum of 0.6 ft.**
    d. The Opposition Brief is mistaken in how HTL should be based (page 16 lines 9-10): the CWA definition states that HTL "encompasses" spring high tides and other high tides that occur with periodic frequency". The CWA does not define, as the Opposition Brief states, that HTL "should be based" on those high tides. The CWA instead states the line is the "maximum height reached by a rising tide".
    e. **The CWA definition of HTL does not exclude the effects of sustained river flows such as what flows into Suisun Bay from the Delta.** As recognized in the Opposition Brief, Delta outflow reflects precipitation amounts and timing throughout 40% of the land mass of California plus operations of the State Water Project, Central Valley Project, and numerous public and private diverters within and upstream of the Delta. Delta outflow variability is neither storm wave run-up nor storm surges. The last two most recent major Delta outflow events that resulted in exceedingly high Suisun Bay water levels were in February 1998 and March 2006. Both those storm peaks are visible in the long-term high tide record at Port Chicago (Figure I-2A in the May 2016 Technical Report). Those two events had tides of 9 ft NAVD88, well above the 8.2-foot HTL line identified in the May 2016 Technical Report. As identified in Table I-1 in the May 2016 Technical Report, we used a frequency analysis to establish an HTL estimate at Port Chicago of 7.92 ft NAVD88 and then applied a height adjustment from the February 17, 2016 field observation. As noted in Table 1 above, if we used the NOAA tide prediction multiplier of 1.12, that would have yielded an HTL at Point Buckler of 8.87 ft NAVD88.
    f. As noted below, levee overtopping evidence was observed on the March 2, 2016, Site inspection.

g. The Bazel Declaration did not provide tide heights for July 3, 2016 as it claimed, when Mr. Sweeney is alleged to have been on the island and declared that he did not observed levee overtopping. The spring high tide on July 3, 2016 occurred around midnight, reducing the likelihood of directly observing any possible overtopping.
h. The Opposition Brief's analysis of the debris wrack line (pages 18-20) is mistaken. See discussion below.
i. The Opposition Brief is mistaken in stating that the levee construction was done above HTL (pages 20-21). Its assessment is based on its mistaken interpretation of many lines of evidence.
j. The Opposition Brief is mistaken in concluding that the Water Board lacks jurisdiction (page 21 lines 3-14). Its conclusion is based on its mistaken interpretation of many lines of evidence.

We Affirm the Validity of Our Analysis

We stand behind the approach we used, documented in Appendix I of the May 2016 Technical Assessment. The analysis sought to identify the *maximum* height reached by a rising tide at Point Buckler, as defined in the CWA. The analysis used three parallel lines of evidence: (1) high water marks, (2) published high tides at the nearby Port Chicago NOAA long-term continuous recording tide station, and (3) debris wrack line elevations on Point Buckler and nearby Simmons Island. The debris wrack line examined field evidence for lines of more or less continuous deposit of fine shell or debris on the fore shore or berm, including considerations of wave run-up that are excluded from the HTL determination. The analysis considered and compared all three lines of evidence, and the conclusions presented are based on these data and comparisons. The methods of determining HTL and the elevation of HTL determined are consistent with other approved HTL jurisdictional determinations in the San Francisco District of the U.S. Army Corps of Engineers[2].

[2] Wetlands Research Associates (WRA). 2015. Jurisdictional limits locations report, Oracle D. Tech Project, Redwood City, San Mateo County, California. Prepared for: BKF Engineers 255 Shoreline Drive, Suite 200 Redwood City, CA 94065. Prepared by: WRA, Inc. 2169-G Francisco Blvd East San Rafael, CA 94901. 94956 [*The HTL estimated for the delineation site was estimated as 8.26 ft NAVD88, based on average of 2 proximate reference NOAA tide stations with maximum tides of 8.04 and 8.48 ft NAVD88]*

National Park Service. 2005. Delineation of Potential Jurisdictional Wetlands and "Other Waters", Giacomini Wetland Restoration Project, Marin County, California. Prepared by Lorraine Parsons, Point Reyes National Seashore. Natural Resources Management Division, Water Resources Section, Point Reyes Station, CA 94956 [*The HTL for the Delineation Study Area was calculated as 8.09 ft NAVD88]*

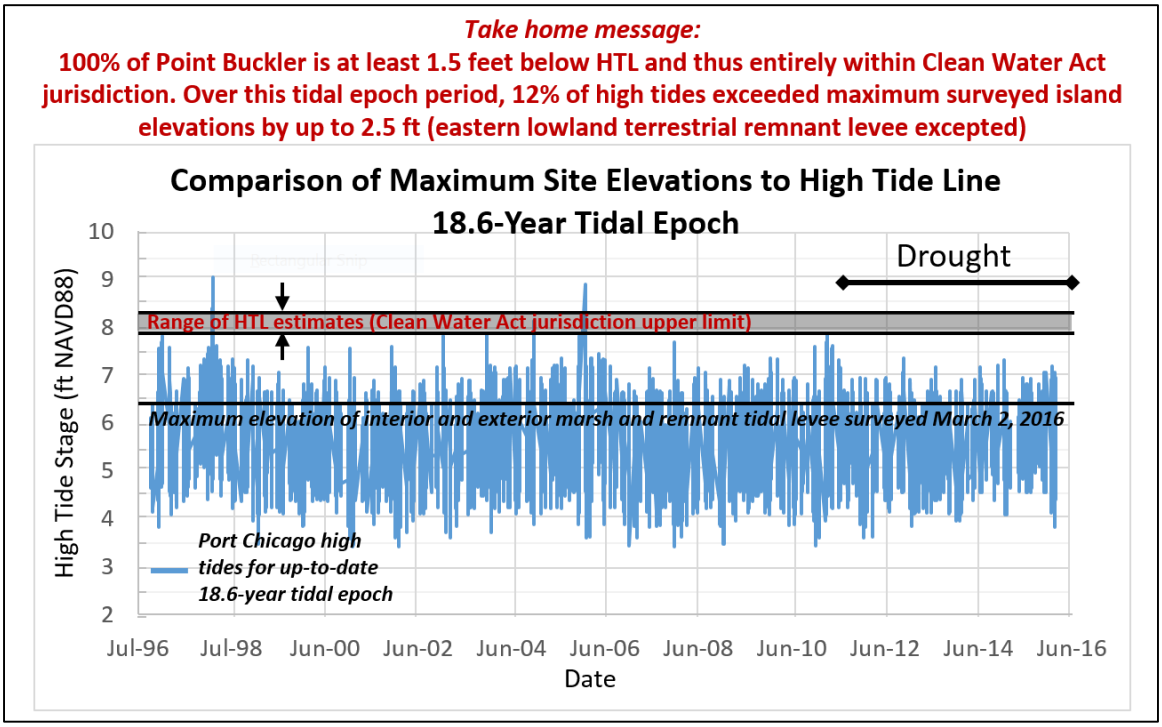


Figure 8. High Tides at Port Chicago 1996 to 2016, Maximum Ground Surface Elevations Surveyed at Point Buckler March 2, 2016, and Estimated High Tide Line at Point Buckler

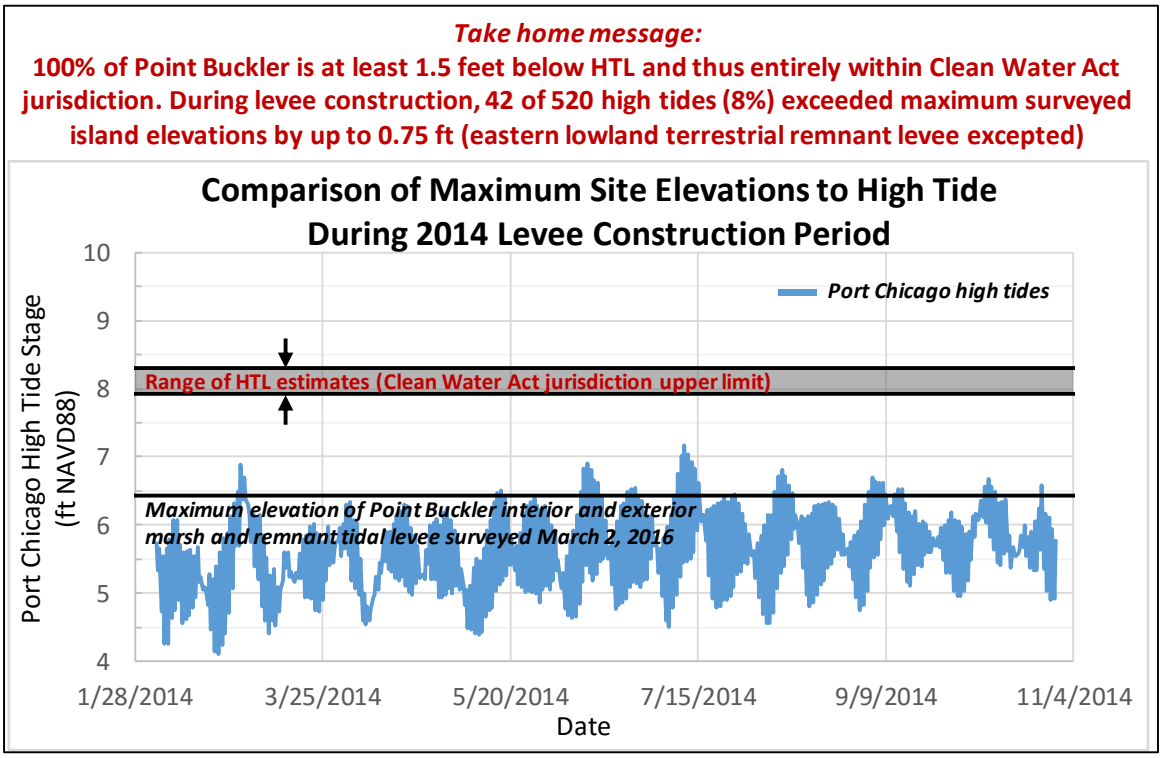


Figure 9. High Tides at Port Chicago During 2014 Levee Construction at Point Buckler, Maximum Ground Surface Elevations Surveyed at Point Buckler March 2, 2016, and Estimated High Tide Line at Point Buckler

5. New Levee Overtopping and Spot Levee Repairs Were Observed on March 2, 2016, High Tides to Overtop Levee Are Very Few

The Opposition Brief (page 1 lines 18 to 26 and page 2 lines 1 to 4) and Bazel Declaration (Item 29) assert that the claimed absence of levee overtopping is evidence of incorrect determination of HTL in the Technical Assessment, and concluded the affirmative jurisdictional findings in the Technical Assessment are invalid. The assertion of no levee overtopping is not correct, and we observed evidence of recent levee spot repairs on the March 2, 2016 Site inspection. We observed evidence of overtopping on the March 2, 2016 Site inspection (see Appendix R photos R-3b, R-4b of the May 2016 Technical Assessment). The claim that the Dischargers did not see overtopping on July 3, 2016 cannot be substantiated or rejected, as they have not provided any evidence and they failed to provide tide height data for July 3, 2016 as claimed in the Bazel Declaration. Further, as the extent of low points on the levee were few, it is possible that Mr. Sweeney has graded them since the March 2, 2016 Site inspection, as evidence of recent levee repairs were visible on the March 2, 2016 Site inspection. The earthwork equipment was visible on the Site in the June 29, 2016 aerial photograph (Exhibit 12b in the July 1, 2016 Water Board Evidence Package), and Mr. Sweeney has published photographs on Facebook taken after the March 2, 2016 Site inspection showing additional work took place on the Site after the March 2, 2016 Site inspection (see Photo 2 in the May 2016 Technical Assessment). Further, even though the spring high tides at Port Chicago were the same on February 17, 2016 and July 3, 2016, the relative height change between Port Chicago and Point Buckler can vary each day based on factors which themselves vary such as wind speed and direction and Delta outflow. Lastly, the Dischargers rejection of the levee overtopping evidence in the Technical Assessment suggests inadequate expertise at identifying evidence of overtopping, which means they could have missed such evidence on July 3, 2016. The high spring tide occurred near midnight on July 3, 2016, so it is very unlikely that the Discharger directly observed water atop the levee had overtopping occurred.

Evidence of Spot Levee Repairs Observed during March 2, 2016 Site Inspection

Some photos on the north shore levee (Photo 3) show recent tracked vehicle impressions and unvegetated mud without seedlings or previous year's weeds or marsh vegetation – consistent with recent levee capping or spot repair. Drift-lines are visible right up to equipment tracks. Also visible in Photo 3A and Photo 3C are what looks like a recent lift of dried mud placed over consolidated (erosion-smoothed) older levee mud.

Photo 3. Spot Levee Repair Evidence during March 2, 2016 Site Inspection
Photos: Peter Baye

Potential Overtopping Depths Shallow and Relatively Low in Erosional Potential since Construction of New Levees

The Opposition Brief (pages 15-18) asserts that because the levee had low spots below HTL, it would have had large water flows overtopping it and erosion would have been observable. However, the levee had very few low sections when surveyed March 2, 2016 (Figure 10). A total of 324 topographic data points were surveyed along the levee crest centerline during the March 2, 2016 Site inspection, at fairly uniform intervals of between 10 to 40 feet (Figure F-8 of the May 2016 Technical Report).

The Opposition Brief assertion appears to based on the occurrence of tides at HTL heights, namely 8.2 ft NAVD88, flowing over the lowest surveyed levee centerline elevation, 6.7ft NAVD88, following levee construction. However, no such extreme high tides have occurred since the levee was constructed, the highest recorded tide at Port Chicago being 7.3 ft NAVD88. Shallow low-energy overtopping for a brief period has modest erosion potential, and we found evidence during the March 2, 2016 Site inspection of recent 2016 levee spot repair consistent with moderate overtopping erosion (see Photo 3).

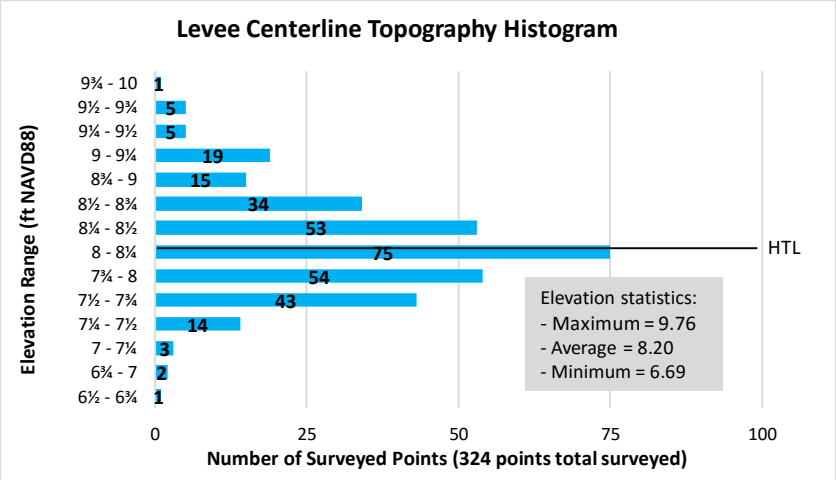


Figure 10. Levee Centerline Elevation Histogram, March 2, 2016 Topographic Survey

Figure 11 shows the Port Chicago high tides from August 7, 2014 to July 3, 2016 and surveyed levee centerline elevations, representing (a) average levee centerline elevation, (b) range of the lower levee centerline elevation points, and (c) the lowest surveyed levee centerline elevation (Appendix I of the May 2016 Technical Assessment). The range in (b) allows consideration of tide height variation between Port Chicago and Point Buckler.

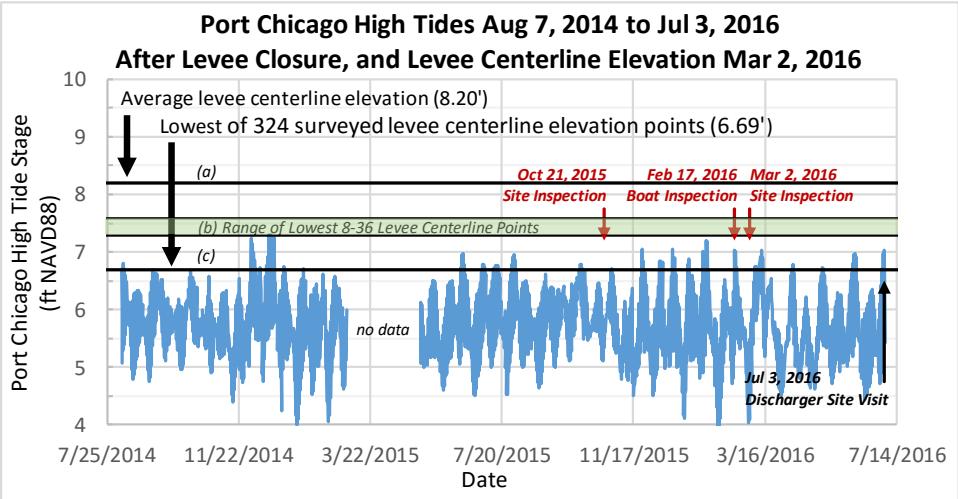


Figure 11. Average Levee Centerline Surveyed Elevations and Port Chicago High Tides After Levee Construction

Note: Port Chicago station data has gap from 2/29/2016 to 5/6/2016

These data show that the average and maximum water depths that could have overtopped the levee for short periods of time are 0.18 and 0.60 ft (0.48 and 0.9 ft if making the adjustment used for estimating HTL), with the cumulative length of levee that was within overtopping heights ranging from 2.5% to 11% depending on whether or not make the 0.3 ft tide height adjustment used for estimating HTL (Table 2).

Thus, even when tide levels rise above the lowest points of the levee, the length of levee that might be overtopped is short and the depths would be shallow. Overtopping itself may never occur, as it is the lowest elevation of the levee cross section at any given point that determines whether overtopping occurs. The levee crest is by no means a perfectly flat surface. Undulations of half a foot were observed during the March 2, 2016 site inspection, so it is entirely possible that no overtopping conditions have arisen since the unauthorized levee was completed, and field evidence from the March 2, 2016 Site inspection indicates that spot levee repairs were made.

Table 2. Attributes of Levee Centerline Low Points and High Tides Since New Levee Enclosed the Site Aug 6, 2014 and Since March 2, 2016 Site Inspection

Feature	Value
Date levee enclosed Site (see Figure K-4 of May 2016 Technical Assessment)	Aug 6, 2014
Levee Centerline Survey Points	
Number of levee centerline points surveyed March 2, 2016	324
Lowest surveyed levee centerline elevation	6.69 ft NAVD88
Number of levee centerline points below highest Port Chicago high tide since levee enclosure (7.29 ft NAVD88), and percent of total levee centerline survey points	8 (2.5%)
Number of levee centerline points below 0.3 feet above highest Port Chicago high tide since levee enclosure (adjustment used to estimate HTL in Technical Assessment, Appendix I), and percent of total levee centerline survey points	36 (11%)
Water Depths of Possible Levee Overtopping Since Enclosure Completed (8/6/2014)	
Average tide depth exceeding 6.69'	0.18 ft
Maximum tide depth exceeding 6.69'	0.60 ft
Water Depths of Possible Levee Overtopping Since Site Inspection (3/2/2016)	
Average tide depth exceeding 6.69'	0.17 ft
Maximum tide depth exceeding 6.69'	0.34 ft
High Tides Frequency, Depths, and Elevations	
Number of days from Site enclosure to July 3, 2016	733 days
Number of high tides from Site enclosure to July 3, 2016	1217
Number of high tides exceeding 6.69' since enclosure	77
Percent of high tides exceeding 6.69' since enclosure	6.3%
Number of high tides current full 18.6-year tidal epoch	12,991
Number of high tides exceeding 6.69' over full tidal epoch	757
Percent of high tides exceeding 6.69' over full tidal epoch	5.8%
Highest tide since March 2, 2016 Site inspection	7.03 ft NAVD88
Average tide height exceeding 6.69' since March 2, 2016 Site inspection	6.86 ft NAVD88
Number of high tides exceeding 6.69' since March 2, 2016 Site inspection	21

False assertion about absence of levee overtopping field evidence. Mr. Bazel and Mr. Huffman misrepresent the rise and fall of the tides and the associated drift line processes. Below, we have provided a primer. They have stated that if tide heights had overtopped the levee, evidence of significant erosion would have been observable and should have been seen during the February 17, 2016 boat inspection by Water Board staff and Dr. Siegel (Huffman Declaration, page 1 lines 25 to 26;

Opposition Brief page 1 lines 22-24). However, they omit recognition that the very high tides if they overtopped the levee would be at shallow depths and for short periods of time (up to 2-3 hours at most), as the highest water levels occur only briefly near slack high tide. Further, recent levee overtopping evidence was observed on the March 2, 2016 site visit in the form of buoyant vegetation debris (mostly air-filled spongy hollow shoots of tule) on the levee crest (photos R-3b, R-4b in May 2016 Technical Assessment). Third, as described above, (a) the low spots on the levee are very few, (b) the low spots occur at a few short distances along the levee, (c) there have at 75 tides since late 2014 that rose as high as the 8 of 324 lowest levee centerline elevations, and (d) that to flood into the Site interior, the entire levee surface must flood (and since the levee is not perfectly flat, a single centerline elevation point does not mean the entire width exhibits the same low elevation). Lastly, because of the brief period of time of high tide, the inability of the field team to circle the entire island on February 17, 2016 due to shallow Bay waters, and the very short distances of levee low spots, there is no basis to assert that the technical team on board the boat on February 17, 2016 should or would have observed the low spots on the levee during the brief time of levee overtopping.

Absence of East Shoreline Wrack Line Not an Oversight (Huffman Declaration Item 5)
During the March 2, 2016 Site inspection, we searched for drift lines (debris/wrack lines) around the entire island perimeter. None were observed on the eastern shoreline, which is a steep bank to the upland levee crest lacking depositional settings for wrack to accumulate. The Technical Report and Opposition Brief agree that the vertical scarp of the east shore is not receptive to drift line deposition. The Technical Report identified high drift-lines on all receptive shorelines of Point Buckler Island on the north, west, and south shores.

6. Sweeney Site Management Actions Are Inconsistent with Suisun Marsh Duck Club Management Strategies

The management of Point Buckler Island since unauthorized levees were constructed does not comply with the Individual Management Plan (IMP; Club Plan) prescriptions or objectives for water or habitat management. The Suisun Marsh Preservation Act places no <u>requirement or obligation</u> on any landowner to maintain their properties as diked, managed marsh. Instead, it provides for an efficient approach to regulatory compliance for carrying out <u>voluntary</u> maintenance actions.

The Opposition Brief and declarants misrepresent the 1984 Individual Club Management Plan (IMP; Club Plan) for Point Buckler with respect to what it allows, prescribes, or requires**.**

Following the construction of unauthorized levees in 2014, the newly diked wetlands were permanently drained rather than being flooded periodically according to the water management recommendations in the IMP for late fall flood up, winter flooding, and spring draw down. None of the aerial photographs (Appendix D of the May 2016 Technical Assessment) nor observations from Site visits in October 2015, February 2016, and March 2016 provide any evidence for IMP-prescribed flood-up water management activities following the IMP, and Technical Report Appendix L presents evidence that flooding could not have occurred in the winter of 2015-2016. Flood-up in fall, winter, and spring is essential to waterfowl

habitat and soil salinity management in Suisun Marsh, and is expressly prescribed in the Club Plan. The failure to flood Point Buckler Island after the unauthorized levees were constructed was demonstrated by the growth and start of reproduction of obligate upland weeds in the diked island interior (Technical Report Appendix L and Appendix R-15) and deliberate planting of ornamental trees intolerant of soil waterlogging and salinity (Appendix R-17). As documented in the Technical Report (Appendix L), the persistent drainage and lack of flooding of the Club degraded rather than improved waterfowl habitat, wetland soils, and wetland vegetation.

The Suisun Marsh IMPs were developed to allow duck clubs to conduct maintenance of existing levees and water control structures with a minimum of regulatory compliance. They do not authorize new work. They place no obligation upon any duck club to conduct any maintenance nor to manage wetland hydrology. A basic objective of all IMPs is to maintain or improve the quality of managed waterfowl habitat, including basic waterfowl plant food productions, balanced cover/shelter and shallow open water habitat, water and soil quality.

The 1984 Point Buckler IMP describes water management infrastructure (levee and water control structures), needed maintenance of that infrastructure at that time, and operations of that infrastructure to optimize waterfowl habitat. As documented in Appendix G of the May 2016 Technical Assessment, aerial photographic evidence on April 30, 1985 indicates the levee repair work recommended in the 1984 IMP had been completed by that date. Aerial photographic evidence subsequently shows that by 1993, five large tidal breaches in the levee had occurred, allowing daily tidal exchange between the extensive channels and ditches within the interior of Point Buckler and the surrounding Bay waters. These breaches would also allow higher spring tides to flood the marsh plain via water transport through the Site's tidal channel and ditch network. The March 2, 2016 topographic survey (Table F-1 of the May 2106 Technical Assessment) also determined that the remnant sections of the 1985 levee had degraded to high tidal marsh elevations that allowed about 20 percent of all high tides to flow over them (Figure I-2C of the May 2016 Technical Assessment).

Aerial photographic evidence also shows that no further levee repairs took place prior to Mr. Sweeney acquiring the property in 2011. Over the 21-year period from levee breaches until levee construction 2014, Point Buckler did not have operational water management infrastructure in place to manage Point Buckler as a duck club according to the prescription in the 1984 IMP or in any other manner. The January 2016 memorandum by the Department of Water Resources (Exhibit 28 of the July 21, 2016 Water Board Response), reviewing why DWR never provided a pump to Point Buckler as part of its 1984 mitigation package, confirmed the absence of a functional levee system at Point Buckler across the years following the 1985 levee repair through to its most recent review in 2014.

Analysis of aerial photographs from 2014 during the time period of levee construction shows that 17 percent of the new levee footprint was atop the remnants of the 1985 levee, and that the remaining 83 percent was outside the old 1985 levee and filled tidal marsh and tidal channels and ditches (Table K-2 of the May 2016 Technical Assessment). Building new levees outside the footprint of the pre-existing

levee requires individual permits from BCDC, USACE, and RWQCB as such work is not authorized under the IMP or USACE RGP3.

All the Suisun Marsh IMPs including that for Point Buckler provide strategies for managing water and vegetation to optimize waterfowl habitat. The Point Buckler IMP recommended multiple cycles of flooding and draining from fall to spring. Flood-drain cycles are a standard method for managing Suisun Marsh non-tidal seasonal wetland soil and water salinity to support productive waterfowl wetland plant foods. There is no IMP prescription for perennial drainage and no flooding or no cyclic flooding and drainage. Prolonged periods of flooding (submergence) are essential to all managed waterfowl wetlands in Suisun Marsh. **There is no evidence that Mr. Sweeney has carried out any fall through spring flooding regime, ample evidence that no such water management has taken place, and strong evidence that such flooding was in conflict with new land uses.** For example, the deliberate planting of about a dozen upland ornamental trees in the Site interior – trees now dead and evidently dependent on soil drainage and low soil salinities – is fundamentally incompatible with the IMP prescription for seasonal wetlands flood-drain cycles. Further, the dry conditions observed during the March 2, 2016 site inspection are directly counter to all the managed wetland regimes established for Suisun Marsh duck clubs[3].

The water and vegetation management at Point Buckler Island since levee construction has achieved precisely the opposite of the Club Plan objectives for properly managing waterfowl habitat, as demonstrated in the Technical Report. The excavation of ponds was not an action prescribed in the Club Plan. The extremely degraded nuisance water and sediment quality and waterfowl habitat conditions in the excavated ponds (Appendix R-20) were inconsistent with managed waterfowl pond objectives of the Club Plan and the Suisun Marsh Plan in general.

The management of vegetation on the island is not consistent with the Club Plan, and has failed to produce any more than trivial amounts of the preferred Suisun Marsh waterfowl food plants such as fat-hen, brass-buttons, and alkali-bulrush. In the absence of Club Plan prescribed seasonal flood-up in fall, winter, and spring, any waterfowl food plants present would have no utility for waterfowl habitat.

The failure to manage water according to the IMP is also demonstrated by long-term drained conditions as visible on the banks of the newly constructed borrow ditch (see Appendices Q and R of the May 2016 Technical Assessment). The Technical Report also provided clear evidence that widespread upland weeds (sow-thistle) that do not tolerate prolonged flooding over winter months were actively growing and producing flower buds in early March, indicating a lack of flooding between fall and the late winter time of the site visit (Technical Report Appendix L and R-15).

[3] See the Final EIR-EIS for the Suisun Marsh Habitat Preservation, Management and Restoration Plan (USBER et al. 2011)

Finally, though all field evidence clearly establishes "drainage", the Site management has not dried out the island. Marsh vegetation continues to try to grow, supported by shallow groundwater still present at the island (see Appendix F of the May 2016 Technical Report).

A Primer on Tides of the San Francisco Estuary and Tidal Datums

The San Francisco Estuary experiences "mixed semi-diurnal tides", meaning that each 24.5-hour tidal cycle consists of two high tides and two low tides, with different heights reached for all four of these tides. Each day there is a higher high tide, lower high tide, higher low tide, and lower low tide (Figure 12). Tides follow a 29-day cycle with the moon of greater and lesser ranges, with full and new moon driving the larger "spring" tides and quarter moons driving the smaller "neap" tides. Tides also follow an annual cycle of the earth rotating around the sun, with winter and summer solstices driving the large "king" tides (also known as "perigee tides") and the equinoxes driving smaller tides. Lastly, tides follow an 18.6-year cycle combining a range of gravitational forces acting on Earth. These cycles are called "tidal epochs" and are the basis for tidal datum calculations by the National Oceanic and Atmospheric Administration (NOAA)[4].

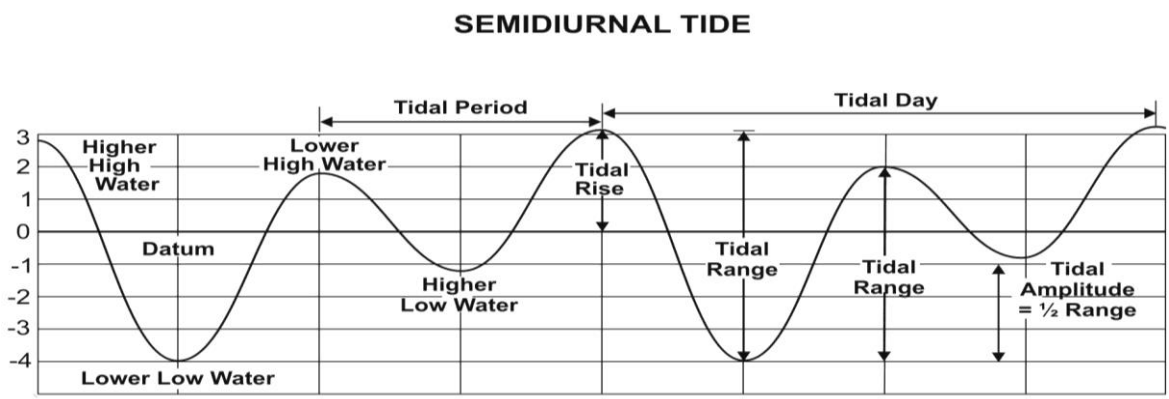


Figure 12. Mixed Semi-Diurnal Tides
Source: National Ocean Service

Tidal flows enter the Golden Gate and move south toward San Jose and north toward the Delta. Because it takes time for the tides to move physically through the bay, locations far from the Golden Gate experience time lags of several hours, a phenomenon that boaters are very familiar with. Tides moving up into the Delta meet the outflows of the Sacramento and San Joaquin rivers at their confluence at the east end of Suisun Bay. These two rivers drain the interior 40% of California. Their combined outflows are very large and have a high degree of variability. Outflows vary seasonally across the dry season, winter storms, and spring snow melt. Outflows are also driven by cycles of wet and dry years which control the amount of watershed runoff that reaches and exits the Delta. Lastly, the amount of Delta

[4] See NOAA: www.tidesandcurrents.noaa.gov.

outflow is controlled importantly by water diversions and operations within the Delta and throughout the entire Central Valley watershed.

The meeting of the highly variable Delta outflow with Golden Gate tides means that Suisun Bay experiences a very wide range of tidal conditions. Delta outflow during major storms can raise Suisun Bay water levels by a foot or more. Conversely, greatly reduced outflows during droughts can drop water levels by perhaps a half-foot or more. Tide stages are also driven by wind, with the downwind reaches of open water with long wind fetch distances experiencing higher tides than the upwind side. Wind fetch at the tip of Grizzly Island where Point Buckler is located can be 3 to 6 miles across Suisun Bay and Grizzly Bay depending on wind direction. Atmospheric pressure also controls water levels, with the high pressure ridge that California has experienced often throughout the current drought lowering water levels and the low pressure of winter storms rising water levels.

Tidal datums are the summary descriptions of tide heights and are used nationally and internationally for a wide range of navigation, commerce, land use planning, and ecological purposes. The United States uses the following definitions of tidal datums[5]:

HOWL	Highest observed water level (spanning time period of observation records that reflects extreme events not representative of High Tide Line, such as major El Nino-related storm flows)
MHHW	Mean higher high water (average of all the once-daily higher high tides)
MHW	Mean high water (average of all the twice-daily high tides)
MTL	Mean tide level (average of MHHW and MLLW)
MSL	Mean sea level (average of all the tides)
MLW	Mean low water (average of all the twice-daily low tides)
MLLW	Mean lower low water (average of all the once-daily lower low tides)
LOWL	Lowest observed water level (spanning time period of observation records)

Tidal datums are calculated over a full 18.6-year National Tidal Datum Epoch in order to include all the gravitational forces that influence tide heights. NOAA also updates tidal datums nationwide about every 25 years, to account for ongoing sea level rise. Datums around the San Francisco Estuary were last updated over several years from about 2005-2010 and cover the tidal epoch of 1983 to 2001.

Other Errors and Misrepresentations in Opposition Brief and Declarations

Three-Parameter Wetland Delineation Methodology

The 3-parameter general <u>wetland</u> jurisdictional delineation method does not establish the upper jurisdictional boundary of <u>Waters</u> of the United States or Waters of the State in geographic areas

[5] NOAA. 2000. Tide and Current Glossary.

subject to ebb and flow of tides. In the Opposition Brief Section III-B-7 (pages 27-28), it asserts that the "3-parameter" (wetland vegetation, soils, and hydrology) wetland jurisdictional method was not used by the Technical Report to analyze the boundary of jurisdiction under the CWA and thus cannot claim jurisdiction on this basis. The Technical Report authors did not apply this method to establish jurisdictional boundaries of the federal CWA or State Porter-Cologne Act in tidal areas because wetland delineations do not necessarily establish the full boundary of Waters of the U.S. under CWA Section 404 jurisdiction in tidelands. In tidal areas, the upper boundary of Waters of the United States is established by the High Tide Line, which cannot be lower than the highest periodic predicted (astronomic) tides reached over the most recently available 18.6-year tidal epoch. Jurisdictional wetlands in tidal areas (areas subject to ebb and flow of the tides, including all the highest winter and summer spring higher high tides) are a subset of Waters of the United States and Waters of the State. Jurisdictional wetlands in tidal areas usually occur below this upper tidal boundary unless other hydrological influences than tides influence them. Jurisdictional wetlands are one of multiple types of "Special Aquatic Sites" with distinctive regulatory status under Section 404 of the CWA. "Wetlands" are not generally identical with "Waters of the United States" or "Waters of the State", but a special case of them. Moreover, the artificially disturbed conditions caused by unauthorized diking, ditching, drainage, mowing, and vehicle tracks trigger a special case "atypical situation" wetland determination requiring special assessment procedures in the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual (Part IV, Section F Atypical Situations) in contrast with "normal circumstances" of wetlands presumed by the routine three-parameter wetland determination method. The Technical Report wetland assessment was consistent with the USACE 2006 Arid West Supplemental Manual guidance for wetland determinations in atypical situations, using evidence from adjacent reference sites, aerial photography, vegetation maps, and soils.

Prevalence of Obligate Wetland Plants Refutes "High and Dry" Conclusion of Opposition Brief and Sweeney Declaration

Prevalence of obligate wetland freshwater marsh plant species at Point Buckler is biologically and physically inconsistent with "High and Dry" conditions. Further, the Dischargers have erroneously equated marsh "drainage" to the marsh being "dried out". In the Opposition Brief, John Sweeney Declaration, Exhibits 3, 4, and 5 include photographs of interior Point Buckler Island before and after dike construction with the assertion that the island was dry during vegetation cutting and bulldozer movement and that the island was "very green" in May 2016 with the assertion that unauthorized levee construction and marsh drainage did not dry out the island. These photographs show areas dominated by "obligate" wetland plants, which are defined as occurring "almost always" in wetlands. This is not merely a matter of CWA jurisdiction (a legal rather than environmental status). The particular "obligate" wetland plant species are widespread perennial freshwater marsh plants that do not tolerate prolonged soil dryness, and require soil saturation for most of the year, and ample near-surface moisture during the dry season, in order to maintain dominance. Tule, cattail and bulrush dominance generally indicates a perennial freshwater marsh, not "high and dry" land.

The wetland vegetation criteria for wetlands (a subset or special case of Waters of the U.S. CWA jurisdiction) are a prevalence of wetland vegetation. Exhibit 4, second photograph, shows a prevalence (dominance) of bulrush and tule vegetation (*Schoenoplectus acutus, S. americanus*), both of which are currently assigned "OBL" (obligate) status under the applicable regional (Arid West) National Wetland Plant list. Similarly, Exhibit 5 shows Point Buckler Island interior vegetation stands from May 2016 confirming a prevalence of "OBL" (obligate) plant species cattail (*Typha* species.; *T. latifolia* or other *Typha* species, all the same wetland status), threesquare bulrush (*Schoenoplectus americanus*; OBL) and hardstem tule (*Schoenoplectus acutus*; OBL). As cited in the Technical Report, the soils classified and mapped at Point Buckler Island by the U.S. Department of Agriculture in the 1970s are all hydric (wetland) soils. The photographs of vegetation dominated by tule, bulrush, or cattail shown in Exhibit 4 is consistent with wetlands, but not "high and dry" uplands.

The photographs in Exhibit 4 of bulldozers on straw-colored dominant vegetation (indicative of seasonal drainage to low soil moisture or dry soil during the growing season) is threesquare bulrush (*Schoenoplectus americanus*, OBL – obligate "almost always occurring in wetlands"), which also consistent with wetland but not "high and dry" upland. As cited in the Technical Report, the soils classified and mapped at Point Buckler Island by the U.S. Department of Agriculture in the 1970s are all hydric (wetland) soils. Threesquare bulrush forms a firm sod in wetland soils, which, especially when drained and consolidated, has substantial shear strength and load-bearing capacity sufficient to support vehicles and equipment.

The photographs in Sweeney Exhibit 3 show a mixture of gumplant (*Grindelia stricta* var. *angustifolia*, including x *paludosa*) with threesquare bulrush (OBL). Gumplant has a National Wetland Plant List regional wetland indicator status of FACW, facultative wetland, meaning "usually but not always occurring in wetlands". The overall vegetation dominated by these species is consistent with wetland, but not upland. As cited in the Technical Report, the soils are also hydric (wetland) soils. The dominant vegetation and soils in the photograph are consistent with wetland, but not "high and dry" upland.

These plant identifications are obvious, and do not require detailed analysis of specimens because they are among the most widespread and abundant Suisun Marsh wetland plants, and were previously confirmed by the Technical Report through on-site March 2016 investigations, and previous plant surveys cited in it that were conducted by the California Department of Water Resources and California Department of Fish and Game. The identification of plants in the Sweeney exhibits was confirmed by wetland plant expert Dr. Peter Baye, who is the co-author of the most current comprehensive published peer-reviewed local flora of Suisun Marsh.

The prevalence of obligate wetland marsh plant species in vegetation that is actively growing in spring months is inconsistent with any reasonable or scientific interpretation of "high and dry" conditions on the island interior before or after diking, since most of the vegetation observed was relict standing litter (left over from pre-levee conditions). The non-scientific "high and dry" term used by the Opposition Brief to describe Point Buckler Island was used in argument that the island was not a tidal marsh and not a wetland. The prevalent wetland plant species shown in the Sweeney Exhibit 5 occur in both tidal and

non-tidal Suisun Marsh wetlands, but they do not occur in Suisun Marsh soils that are "high and dry" during all or most of the potential growing season (late winter, spring, summer, and fall) in Suisun Marsh. "High and dry" (informal, unofficial term) soil conditions correspond with "upland" (UPL) or at most "Facultative Upland" (FACU) official wetland indicator ranks of the 2012 and later National Wetland Plant List. No interior island vegetation dominated by "upland" or "facultative upland" plants was shown in Exhibits 3-5 or any other documents submitted in the Opposition Brief.

Mass Dieback (Mortality) of Wetland Vegetation Is Not the Same as Normal Seasonal Senescence

The Opposition Brief Section III B 5 argues that the Technical Report was incorrect in concluding that the diking and drainage of the island caused it to drain and "dry up", claiming that the "mass dieback" of marsh occurred prior to diking. The Opposition Brief (page 25 lines 22-23) and Sweeney Declaration (Item 20, page 4 lines 7-11) mistakenly equate seasonally "brown" foliage in May 2012 when tidal marsh plants are in their early stages of new annual growth and not actually "apparently dead", as the Dischargers state, with the mass dieback of emergent vegetation observed in the March 2, 2016 Site inspection. In other words, they are trying to claim dead vegetation was present before and after the unauthorized levee was built. That claim is invalid, as evidenced for example by the June 2013 aerial photograph (Figure K-13 in the May 2013 Technical Assessment).

The Technical Report described mass dieback of perennial marsh vegetation throughout the diked interior of the island: actual mortality of the perennial plants' regenerative parts below ground resulting in stunted, growth-inhibited sparse marsh vegetation relative to tidally flushed or seasonally flooded marsh. This is not the same as natural seasonal senescence (withering of leaves and shoots above ground only; survival of below-ground perennial buds, roots, and stems). All tidal marsh tules, cattails, and bulrushes turn to straw colored shoots in fall. This is called "seasonal senescence" – the orderly biologically programmed process of seasonal leaf physiological shut-down process, leading to leaf death, in order to increase survival of perennial, regenerative parts. Both conditions, senescence and dieback, may result in straw-colored above-ground vegetation in the dry summer-fall and early winter months. But normal seasonal senescence of marsh vegetation does not result in mass mortality. The death of marsh plant leaves in fall and early winter is no more a sign of mortality than a deciduous tree undergoing leaf color change and leaf drop in autumn. The confusion between them in the Opposition Brief is profoundly misleading.

The marsh dieback reported in the Technical Report was based on observation of very sparse, short, stunted shoots of cattail and bulrush marsh plants on the island interior at the same time the same species were growing green and up to several feet tall, and at high density, in the adjacent tidal marsh.

Extreme or prolonged physiological stress can initially induce senescence, but proceed to actual mortality of populations – progressing from senescence to thinning (decline in density of live individuals) to death in large patches with stunted survivors (mass dieback). Plant populations in some cases can recover from mass dieback by population growth when favorable environmental conditions return.

Mr. Sweeney's observations of brown vegetation prior to levee reconstruction and exclusion of tidal flows were likely natural, seasonal senescence of marsh vegetation following dry, hot summer months and made during a period of drought that exacerbates growth stress on tidal marsh vegetation.

Soils of Upper Tidal Marsh Zones Are Generally Capable of Supporting Track-Mounted Equipment Especially on Former Diked Marshes

High and middle tidal marsh soils with perennial sods normally have cohesive, load-bearing soils that support tracked vehicles and equipment. When these soils conditions are atop a former diked marsh, soil load bearing capacity can be even higher, due to soil consolidation during the period of diking. The Opposition Brief erroneously argues that tidal marsh would be unable to support vehicles or heavy equipment such as bulldozers shown in the Sweeney Declaration Exhibit 4, and therefore the Site could not have been tidal marsh prior to constructing the unauthorized levee. This argument is false, and contradicts the use of heavy excavation equipment in upper tidal marsh vegetation zones – high marsh plains – by mosquito abatement agencies throughout the Bay Area to modify or construct tidal drainage ditches. Mr. Sweeney stated in an email to Stuart Siegel on May 14, 2015 (see Siegel Declaration Attachment 2) that his father-in-law, Mike Frost, "can attest to the quality and practices I used in restoring Buckler as he explained to me how to do it". W. Mike Frost Construction is the "oldest dirt working contractor in the Suisun Marsh area" according to its web site. Given that Mr. Frost explained how to do all the earthwork at Point Buckler, one can reasonably expect this advice to Mr. Sweeney to include an understanding of suitability of site soils to support the weight of construction equipment.

Tidal marshes consist of different zones of vegetation and soil in relation to tidal elevations, and the upper intertidal zones of mature tidal marshes (middle marsh, high marsh, and marsh-upland transition zone) generally have soils with sod-forming perennial wetland plant roots and relatively high shear strength. Middle and high tidal marsh plains, which occur at elevations close to or above Mean Higher High Water in the San Francisco Estuary, generally have soils with ample shear strength during spring, summer and fall season neap tide series (or at least prior to summer spring tide series of June-July), sufficient to bear loads such as vehicles and equipment with wide tires or tracks that spread loads to moderate ground pressure and reduce marsh soil shear, compression and compaction. Mats are usually required to minimize damage to marsh soil caused by compaction resulting from operation of vehicles and heavy equipment in marshes. The Technical Report documented apparent denudation and compaction of soils in interior Point Buckler Island where repeated vehicle tracks created barrens (Technical Report Appendix R-13, R-19).

Furthermore, after middle to high intertidal marshes are diked and drained, their soils may shrink and become higher in shear strength. Point Buckler Island was diked for at least several decades and its remnant vegetation documented in the Technical Report corresponds to middle intertidal (above MHW) tidal marsh zones in Suisun Marsh. The tidal or diked marshes at Point Buckler, before and after diking, would be expected to support tracked vehicles or equipment, although with soil compaction damage.

In contrast, low intertidal marshes, those formed on saturated mud at all tides all year, have low shear strength and generally do not bear the weight of any vehicles or heavy equipment except for highly specialized amphibious equipment (relatively buoyant or very low ground pressure equipment).

The failure to distinguish between the low-strength low tidal marsh soils, and the relatively higher strength marsh soils of the upper intertidal zones, supports a misleading and false conclusion that operation of heavy tracked equipment such as bulldozers necessarily indicates "high and dry" upland or non-wetland conditions. The shear strength and load-bearing capacity in middle or high tidal marsh, and in diked non-tidal seasonal marsh during drained, dry drawdown phases, is expected to support operation of vehicles and equipment.

Interpretation of Drift-Lines as Indicators of High Tide Lines

Not all of the multiple natural tidal marsh drift-lines indicate the High Tide Line, and the outer drift-lines behind eroding edges of tidal marsh with tall vegetation almost never do. The Opposition Brief argues that the bright "white" lines on aerial photographs near the outer tidal marsh edge are the singular High Tide Line. This argument is false on many grounds. First, there are almost always multiple drift-lines (debris or wrack-lines) in tidal marshes and various elevations that correspond with various deposition events and tides, all during falling tide stages. Drift-lines deposit where there are barriers to trap them in place. Tall, strong above-ground vegetation or standing dead litter, such as bulrush or tule and cattail at the outer tidal marsh edge bordering the Bay or slough, is generally the first barrier that intercepts and traps floating tide-deposited or wave-deposited debris that composes drift-lines.

The relatively coarse litter deposits of tule shoots and drift-wood are usually concentrated along the <u>outer marsh tidal marsh edge</u>, at the junction between wave-scoured marsh peat without tall vegetation, and the outer edge of tallest vegetation. This outer marsh drift-line is usually the most influence by wave deposition because open bay waves are rapidly damped (energy and wave height reduced by friction) of dense, tall tidal marsh vegetation, which causes the weakened "sapped" waves to drop their loads of debris against the permeable barrier of vegetation at the marsh edge. These wave-sheltered settings trap a range of particle sizes that include concentrations of small floating debris, such as marsh plant seeds and fine plant fibers or fragments (marsh litter hash).

The thick, "bright" (reflective, high-albedo drift-line in aerial photographs) outermost marsh edge drift-line composed of coarse tule litter and driftwood is generally <u>not</u> the High Tide Line that corresponds to the highest tidal elevations of the tidal epoch. The coarse outer marsh drift-line litter is originally deposited during high tides at elevations where the vegetation canopy that traps it is partially submerged, above the marsh surface that is also submerged at the time of deposition. As the tide ebbs, the drift-litter mat at the marsh edge lodges (depresses, lodges, or mats down) the marsh vegetation that trapped it originally, and comes to rest later near or on the marsh surface below the original elevation of trapping and deposition. A series of drift-lines, not just one most conspicuous large single drift-line of the outer marsh, are often deposited in the lee (landward) of the thickest marsh edge drift-lines. The tall tidal marsh vegetation intercepts most drifted floating tidal litter within meters of the

marsh edge, depending on wind-wave heights and tide elevations at the time of deposition, and the height and density of tidal marsh vegetation.

Where wide marshes with tall vegetation are absent, waves are not damped by vegetation roughness, and there is no seaward trap for floating debris. Such receptive shorelines, such as beaches and levees or armored (rock-covered) shores, trap the thickest wave-deposited drift-lines where no marshes receive, intercept, and trap litter seaward of the landward shoreline. In contrast with the drift-lines deposited on the flexible above-ground tule, cattail, reed, and bulrush marsh vegetation of the outer marsh, artificial levees form a firm, relatively stable surface with high roughness - rich in pockets, cracks, indentations, or crevices. Drift-lines on this firm barrier surface during the highest tides contact the original stable surfaces elevations where they were originally deposited.

It is only in relatively wave-sheltered settings in the lee (shoreward) of dense, tall, marsh vegetation, or along shorelines with relatively low incident wave energy, that high tide lines can be confidently distinguished from wave-deposited drift-line elevation ranges above still-water heights of highest tides. This was in fact the basis of the Technical Report's High Tide Line sampling methodology in the Technical Report: drift-line elevations were sampled and compared in both wave-sheltered and wave-exposed settings: in the lee of tall wide wave-damping tule and reed marsh, and in the lee of narrower marshes, and near old breaches lacking marsh. The elevation ranges of drift-lines, and the types of material in wave-sheltered, wave-damped levee shorelines guide the interpretation of drift-line elevations in wave-exposed settings where wave run-up (swash, uprush of breaking waves) is potentially significant. Data collection for high tide debris specifically included fine debris such as concentrations of bulrush seeds in wave-sheltered north-facing Point Buckler shorelines in the lee of dense, tall tules and reeds (Photo 4).

Field survey crews (March 2, 2016) specifically targeted elevation data on north shore Buckler Island drift-line deposits of fine debris composed of fine fibrous plant litter, bulrush seeds, and polystyrene, in sheltered positions behind dense, tall tule and reed vegetation that attenuates wave energy.
Photo 4. Debris Wrack Line Examples from March 2, 2016 Site Inspection
Photos: Peter Baye

Significant Transport and Deposition of Floating Tidal Debris Would Not Be Expected in the Diked Island Interior in the Period Since Levees Were Constructed.

Opposition Brief Section III A 1 and Huffman Declaration Item 6 predict that overtopping of levees would necessarily result in deposition of drift-lines in the interior of Point Buckler Island, so a lack of conspicuous drift-lines there must imply that the High Tide Line estimate of 8.2 ft NAVD88 is incorrect. This argument fails because the highest tides that establish the High Tide Line are very infrequent, and because the levee and fringing tidal marsh (especially marsh vegetation taller than levees) filter and trap most floating tidal litter even during highest tides that overtop levees.

The exterior (seaward of levees) tidal marshes and the levees themselves are efficient "filters" of floating tidal debris, and intercept and trap drift-lines in rough vegetation or levee barriers. When levees overtop during extreme high tides, tidal litter deposition in diked interiors is constrained by the interception of litter by tidal marsh, especially vegetation canopies taller than the levees themselves. During low-wind, low-wave overtopping high tides, tidal litter deposition from overtopping may transport minimal loads off floating debris to diked interior baylands. Only during coinciding high wind-wave and high levee-overtopping tides are significant floating tidal debris loads transported to diked bayland interiors, primarily where fringing tidal marsh is either absent, very narrow, or lacking tall vegetation. Point Buckler Island is fringed with tall bulrush, cattail, and tule tidal marsh, and has only a few wave-exposed dammed breaches where energetic overtopping is likely to occur without significant "filtering" of debris by fringing tidal marsh. The period since the Point Buckler Island levees were constructed occurred during an extreme historical drought with relatively low frequency and intensity of winter storms. Therefore, there is low probability of significant transport of tidal debris to the island interior since it was diked. Any interior drift-lines would not comprise a "High Tide Line" since continuous levees would obstruct tidal ebb; such drift-lines would comprise an atypical non-tidal "High Water Line". Because the diking was unauthorized, and the condition is "atypical" rather than "normal circumstances" (corresponding to standard federal wetland delineation manual procedures for evaluating wetland jurisdiction when unauthorized fill occurs), any interior high water lines would not be "Ordinary High Water Lines" of Section 404 jurisdiction. The High Tide Line projected across the entire island is the upper boundary of Section 404 jurisdiction at all of Point Buckler Island.

Ecology

Balancing the Diversity of Beneficial Uses of Brackish Tidal Marsh

The Opposition Brief argues (at Section IV) that the Tentative Order would violate the Suisun Marsh Preservation Act because it conflicts with the implementation of the Club Plan and its effects on waterfowl habitat. This argument is unsound for several fundamental reasons.

First, the unauthorized diking and drainage of Point Buckler Island did not implement the most essential waterfowl management actions of the Club Plan, which is the seasonal flood-up of the managed wetland to provide shallow water low-salinity wetland habitat for waterfowl, and to produce abundant

vegetation composed of preferred waterfowl food plants. The diked wetlands were permanently drained, but not repeatedly flooded in winter, and not even flooded once over the winter of 2015-2016. Flood-up in fall, winter, and spring essential to waterfowl habitat and soil salinity management in Suisun Marsh, and is expressly required by the Club Plan. The failure to flood up Point Buckler Island after dikes were constructed was demonstrated by the growth and start of reproduction of obligate upland weeds in the diked island interior (Technical Report Appendix R-15) and deliberate planting of ornamental trees intolerant of soil waterlogging and salinity (Appendix R-17). The unilateral imbalance between drainage and flooding of the Club degraded rather than improved waterfowl habitat.

Second, the unauthorized activities achieved precisely the opposite of the Club Plan objectives for properly managing waterfowl habitat, as demonstrated in the Technical Report: the excavation of ponds was not an action prescribed in the Club Plan. The extremely degraded nuisance water and sediment quality and waterfowl habitat conditions in the excavated ponds (Appendix R-20) were inconsistent with managed waterfowl pond objectives of the Club Plan and the Suisun Marsh Protection Plan in general.

Third, the management of vegetation on the island is not compliant with the Club Plan, and has failed to produce any more than trivial amounts of the preferred Suisun Marsh preferred waterfowl food plants such as fat-hen, brass-buttons, and alkali-bulrush – and in the absence of Club Plan prescribed seasonal flood-up in fall, winter, and spring, any waterfowl food plants present would have no utility for waterfowl habitat.

Corrective actions that restore tidal marsh to pre-project conditions are not incompatible with enhanced waterfowl habitat objectives of the Suisun Marsh Preservation Act under current environmental conditions, which include accelerated sea level rise and declining suspended estuarine sediment transport. The undrained excavated ponds would predictably be colonized by high-value aquatic waterfowl food plants such as sago pondweed (*Stuckenia pectinata*) if the island were restored to tidal flows. These interior ponds could be expanded to embed submerged aquatic vegetation waterfowl habitat compatibly within a restored tidal marsh, thus reconciling potential conflicts between narrow adherence to the Club Plan, and restoration of antecedent beneficial uses of tidal marsh.

Salmon

Chinook Salmon are likely the most estuarine-dependent of the salmon species (Healey 1982). Studies of west coast salmonids broadly demonstrate the use of shallow water habitat by juvenile salmon (Levy and Northcote 1981, 1982; Healey 1991, 1980; Miller and Simenstad 1997; Miller and Sadro 2003; Bottom 2005, Bottom et al. 2011), and shallow water habitat has historically supported salmon food webs (Bottom et al. 2012).

The consensus conclusions of the estuarine fisheries experts do not agree with claims in the declaration of David Mayer that the role of estuarine tidal slough marshes for native fish is not known to be "good or bad" for fish, or is merely a "subjective" or "hardly more than a lightly researched theory". These apparently contrived claims of ambivalent ecological roles, subjectivity about the relationship between

estuarine fish and tidal wetlands, is itself not supported by citation or review of the relevant current scientific literature or David Mayer's own expertise. His claim that "For salmon, there is no real conclusion what is good or bad" about habitat is false, and his assessment of "generalized and embarrassingly poor understanding of the listed species' habitat requirements" appears to reflect outdated knowledge of the current scientific literature, and is a scientifically unsound opinion.

In a symposium held at the University of California, Davis, on June 10, 2013, *Tidal Marshes and Native Fishes in the Delta: Will Restoration Make a Difference?*, leading Pacific Coast regional scientific authorities on estuarine ecology of anadromous salmonids developed and published consensus conclusions regarding the role of tidal marsh restoration on conservation of Central Valley salmonids. Restoration of tidal marshes in the San Francisco Estuary/Sacramento-San Joaquin Delta benefits many fish species. These benefits can be extremely important for growth and survival of individuals of desirable species on site. Site location of restored marshes determines which species will use them. Tidal wetland loss appears to mediate the effect of density on salmon foraging performance. Current peer-reviewed scientific research suggests that tidal wetland loss may interact with salmonid density to constrain the foraging performance of juvenile Chinook salmon, and ultimately their growth, which is critically important to (and correlated with) survival of juveniles.

A July 2016 peer-reviewed publication regarding salmon growth and survival in the Delta and San Francisco Estuary (Perry et al. 2016) stated that "They were also able to detect evidence of prolonged rearing in brackish waters among approximately 25% of the parr migrants, 55% of fry migrants, and 3% of smolt migrants (total of 18 individuals), suggesting that estuary rearing (the Delta and San Francisco Bay) was more important to overall success than previously thought."

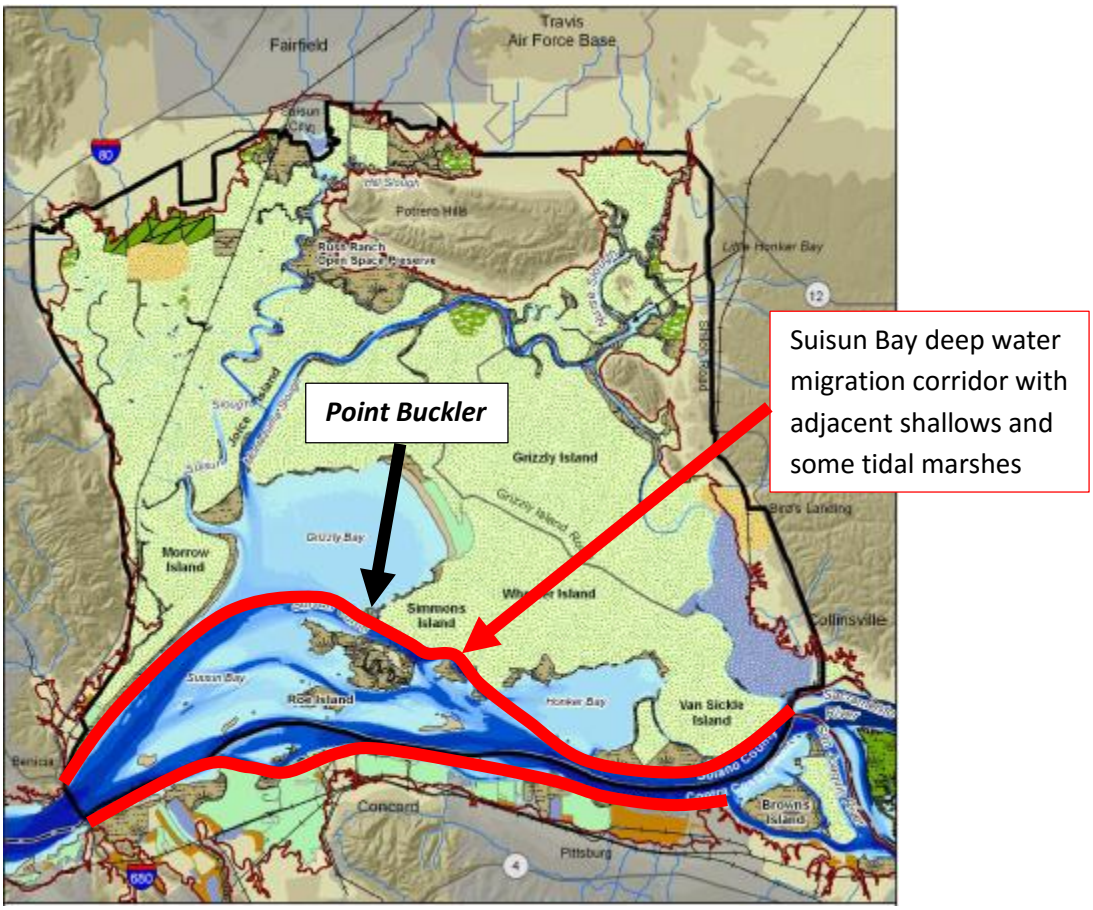


Figure 13. Primary Suisun Bay Salmon Migration Corridor
Source: adapted from Siegel et al. (2010).

Habitat Values for Smelt

Both the Endangered Delta Smelt and State-listed Longfin Smelt are likely affected by changes at Point Buckler, but through likely different pathways. Recent work found newly hatched larvae in tidal marshes and open water shoals throughout Suisun Bay, especially in Ryer Island and Wheeler Island. In 2013, over 10,000 longfin smelt larvae were collected in the shallow waters of Suisun Bay. Previous research has suggested that Longfin Smelt spawning was concentrated in upstream areas of the Delta (Hobbs et al. 2006, 2007). Dr. Grimaldo's work shows that Longfin Smelt are actually spawning in tidal marshes in the vicinity of Point Buckler. The abundance of very young smelt larvae at a particular site appears to be affected by salinity, with San Pablo channels yielding larvae only in years of high outflow. Point Buckler (like the adjacent Ryer Island sampled by Dr. Grimaldo) would provide appropriate physical and salinity conditions in most years, since it is frequently of suitable salinity during the late winter spawning time of Longfin Smelt.

First feeding is often critical to larval survival (Hjort 1914, Leggett and DeBlois, 1994). Rainbow Smelt (*Osmerus mordaxa*) showed larva mortality rates controlled by success at first feeding (Sirois and Dodson 2000a, 2000b). Dr. Grimaldo's work suggests that high food availability in the channels and

adjacent shallow water provide support survival of the young Longfin Smelt spawned in the area. Such productivity export is a central goal of many Delta Smelt management actions.

Percent Loss of Tidal Marsh Channels in Suisun Bay

Given the established function of tidal marsh channels with vegetated banks providing important outmigrating habitat for juvenile salmonids, in this Experts' Response we have prepared a new analysis, of the length of such channels in Suisun and the percent of that channel length lost with the diking of Point Buckler.

Analytical Method

For this analysis, we first established some definition criteria for what to include and exclude and how to classify channels we have included in the analysis. These criteria contain subjective measures, based on best professional judgment necessary to complete what we consider a "preliminary" analysis:

1) Channels must be in tidal marshes with at least 50 feet of vegetated marsh adjacent to the channels. The purpose of this criterion is to include channels that are flanked by a sufficiently substantial marsh plain on both channel banks, which is intended to identify areas where the food web productivity of the marsh plain is of sufficient magnitude to offer meaningful forage resources to juvenile salmonids. This criterion aims to exclude channels that run along a levee or other hardened edge on one or both channel banks.
2) Marshes have to be along the general migratory corridor of Suisun Bay connecting the Delta to Carquinez Straits (see Figure 13).
3) Channels are divided into two size classes. Small channels are defined as less than 40 feet in width, and large channels are defined as larger than 40 feet in width. Alternative width values could be used, but this value provides a reasonable differentiation between the numerous small tidal marsh channels and the few large channels.

Findings

Figure 14 shows the resulting channels identified following the above criteria. Prior to diking of Point Buckler in 2014, the site had about 9,500 feet of small tidal marsh channels connected to the surrounding tidal waters of Grizzly Bay and Suisun Cutoff. As noted in Appendix P of the May 2016 Technical Assessment, Point Buckler is located in a heavily utilized fish migratory corridor. This length of tidal marsh channel at Point Buckler represented approximately 5% of all the smaller tidal marsh channels in Suisun Marsh along the margins of Suisun, Grizzly, and Honker bays (Table 3). The Contra Costa shoreline of Suisun Bay has extensive tidal marsh channels and may also be used by migratory fish, although many of those marshes are in relatively altered states with hardened edges, extensive linear mosquito abatement ditches, and relatively close proximity to industrial land uses that in some instances have caused extensive tidal channel contamination. As illustrated in Figure P-2 in the May 2016 Technical Assessment, most of the Delta Smelt captures are not along the Contra Costa shoreline and instead are in Honker and Grizzly bays.

Table 3. Length of Tidal Marsh Channels in Suisun Bay

Marsh Location	Length of Tidal Marsh Channels (ft)		
	Large Channels (> 40 ft avg width)	Small Channels (< 40 ft avg width)	Total
Browns and Winter Islands	26,128	27,207	53,335
Contra Costa Shore	29,130	400,377	429,507
Suisun/Grizzly/Honker Bay	45,593	195,822	241,415
Pt Buckler	-	9,558	9,558
Total	**100,851**	**632,964**	**733,815**

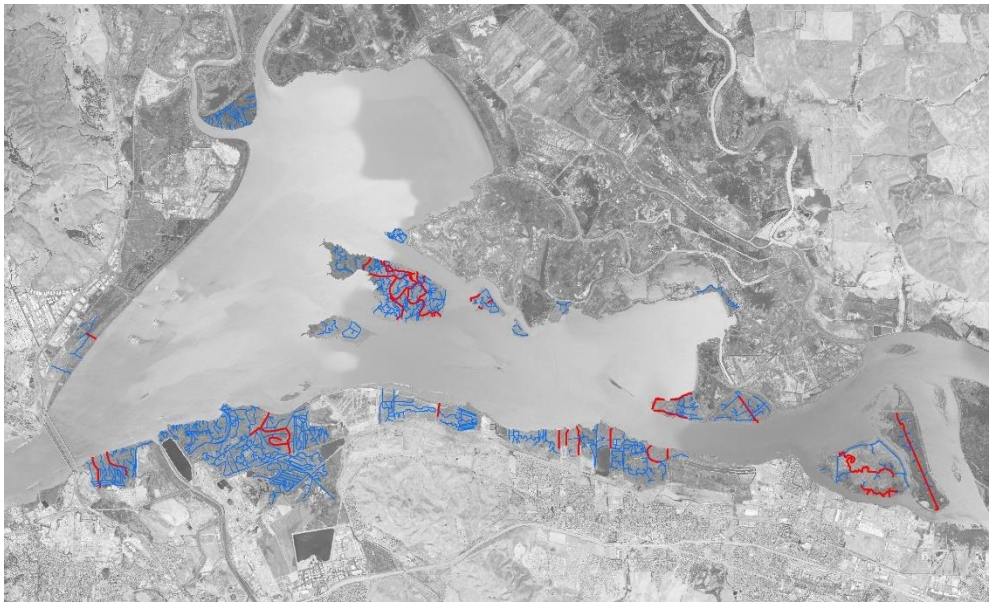


Figure 14. Extent of Small and Large Tidal Marsh Channels, Suisun Bay

Sedimentation Cannot Reach Above the Tides and Wind-Wave Run-Up on a Tidal Island

The Objection Brief (page 28, lines 7-9) states that "It [the pond seen in 1981 photograph] must have silted up and become elevated above the high tide line, thereby moving it beyond Corps jurisdiction". This scenario is not possible physically on a tidal island. For siltation to occur on a tidal island far removed from any wind-transported sand, the only mechanism to introduce sediments is the tides. As discussed above, the Site interior is protected from wind-wave run-up by the perimeter tidal marsh vegetation, so the submergence on the island interior can be from the regular action of the tides not affected by wave run-up. Therefore, there is no physical sediment transport mechanism to lift sediments above HTL in the island interior.

Fill Volume Calculations

The Objection Brief (Section III-B-4 page 25) relies on its invalid assertion that State and federal jurisdiction is not present across the Site to conclude that the acreage of tidal marsh fill established in the May 2016 Technical Assessment is wrong. That Objection Brief section also refers back to the erroneous calculations in October 2015 AWR Site Condition Report for fill volumes. In fact, the full tidal marsh fill acreage and cut and fill volumes presented in the May 2016 Technical Report are accurate.

The fill acreage and cut and fill volume calculations presented in the May 2016 Technical Assessment are valid and were developed based on the following parameters:

1) Established presence of State and federal jurisdiction across all but the eastern 0.528 acres of the remnant terrestrial lowland levee.
2) Analysis of aerial photographs in Geographical Information System computer software utilizing rectified aerial photographs and ground-truthed for spatial accuracy during the March 2, 2016 Site Inspection, to establish the spatial extent of all unauthorized activities and pre-existing site conditions.
3) Application of topographic data collected during the March 2, 2016 Site Inspection to develop a Digital Elevation Model (DEM) of the post-construction site to calculate "in-place" earthwork volumes. Those calculations did not account for fill compaction and consolidation.
4) Industry standard practices utilized throughout. Topographic surveying and DEM development were carried out by a State of California-licensed Professional Engineer.

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quantum SPATIAL

Invoice

Quantum Spatial Inc.
1030 Railroad Ave, Suite B
Novato, CA 94945

Accounting
523 Wellington Way
Lexington KY 40503

Invoice # 15294

Bill To:
Siegel Environmental
Attn: Stuart Siegel
637 Lindaro St #201
San Rafael, CA 94901

Ordered by: Dan Gillwater
Date: 02-17-16
Terms: Due Upon Receipt

Project: Suisun Bay – Flight

Product Code	Description	Qty	Price	Extended Price
Flight	Custom - Vertical Color / CIR			
	Pinpoint and Stereo pairs	1	$4,400.00	$4,400.00
Geo	Georectification	1	$800.00	$800.00
CCP	Color Contact Prints	1	$220.00	$220.00
	Sub Total:			$5,420.00
	Shipping:		FedEx	$21.50
	Tax:		9.25%	$20.35
	Total Due:			$5,461.85

Stuart Siegel

From: Stuart Siegel
Sent: Friday, June 24, 2016 2:27 PM
To: Jared Lewis Gmail (jaredalewis@gmail.com)
Subject: Polygon for Terravion
Attachments: Terravion Polygons Buckler_2016-0624.kml

Jared,

Here are the three polygons. I actually want three sites for reference comparisons.

Billing info:

Stuart Siegel
Siegel Environmental
637 Lindaro Street, Suite 201
San Rafael, CA 94901
stuart@swampthing.org
(415) 299-8746

Thanks!
Stuart

Stuart W. Siegel, PhD, PWS
Principal Environmental Scientist, Siegel Environmental
415.823.3746
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stuart@swampthing.org

Tentative Cleanup and Abatement Order

John D. Sweeny and
Point Buckler Club, LLC

Description of Exhibit Provided by Hard Copy and Electronically

Exhibit 23

Declaration of Dr. Stuart Siegel (includes attachments)

JULIE MACEDO, Senior Staff Counsel (SBN 211375)
LAURA DRABANDT, Senior Staff Counsel (SBN 235119)
TAMARIN AUSTIN, Senior Staff Counsel (SBN 207903)
State Water Resources Control Board
1001 I Street, 16th Floor
Sacramento, California 95814
Telephone: 916-323-6847
Fax: 916-341-5896
E-mail: julie.macedo@waterboards.ca.gov

Attorneys for San Francisco Bay Regional Water Quality Control Board Prosecution Team

BEFORE THE CALIFORNIA WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

In the Matter of: TENTATIVE ORDER ADOPTION OF CLEANUP AND ABATEMENT ORDER for: POINT BUCKLER ISLAND, Solano County	EVIDENTIARY DECLARATION OF DR. STUART SIEGEL

I, Stuart W. Siegel, Ph.D., P.W.S., declare as follows:

1. I am President of Siegel Environmental, LLC, Coastal Resilience Specialist for the San Francisco Bay National Estuarine Research Reserve, and Adjunct Professor of Earth and Climate Sciences at San Francisco State University. Formerly, I was President of Wetlands and Water Resources, Inc. and Vice President of Environmental Science Associates, Inc.. I have been so employed in these and prior positions in San Francisco Bay wetlands for over 30 years. I am a Professional Wetland Scientist, certified since 1994 by the Society of Wetland Scientists. My experience and expertise are outlined in Attachment 1.

2. I have been contracted to provide expert analysis on the Pt. Buckler Island related matters for a Cleanup and Abatement Order (CAO) and Administrative Civil Liability Complaint (ACLC). As part of my analysis, I received and reviewed "Opposition to Issuance of Cleanup and Abatement Order" and the related materials from John D. Sweeney and Point Buckler Club, LLC on or about July 11, 2016.

3. Attached hereto as Attachment 2 is a true and correct copy of the complete email exchanged between myself and John Sweeney during May and June 2015. Two excerpts of this email exchange were provided in Pt. Buckler's evidentiary materials as Sweeney Exhibit 6 and Sweeney Exhibit 7.

4. Attached hereto as Attachment 3 is a true and correct copy of the complete email exchanged on June 18 and 19, 2015 between myself and Joshua Collins of the San Francisco Estuary Institute (SFEI).

5. The Opposition to Issuance of Cleanup and Abatement Order prepared by Attorneys for Point Buckler Club, LLC and John D. Sweeney ("Opposition Brief") asserts that the May 12, 2016 Technical Assessment prepared by me and others has a strong bias against the Club. I declare that I have no bias against the Club.

6. The Opposition Brief asserts that because John Sweeney has publicly accused me of scientific misconduct, I was in no position to provide a dispassionate assessment of Mr. Sweeney and the Club. I agree that Mr. Sweeney has made such public accusations. These accusations are without factual merit, as Mr. Sweeney's own Declaration Exhibit 10 establishes, and consequently bear no relevance to my capacity to provide dispassionate assessment of Mr. Sweeney and the Club.

7. The Opposition Brief also asserts that I tried to work for the Club but was rejected. On May 5, 2015, I was contacted by Mr. Ben Wells, a mutual acquaintance of Mr. Sweeney and mine, seeking to determine whether I was interested in submitting a proposal to assist Mr. Sweeney respond to early enforcement actions against Mr. Sweeney by the San Francisco Bay Conservation and Development Commission (BCDC). On May 6, 2015, I submitted a brief scope of work and budget to Mr. Wells to conduct an historic hydrologic connectivity assessment of Point Buckler. The first response to the submitted scope of work was an email from Mr. Sweeney on May 13, 2015, presented in Attachment 2. This first of five emails from Mr. Sweeney to me initiated the discussion about the Suisun Marsh Restoration Projects map I had prepared in several iterations beginning in 2003. In none of these five emails did Mr. Sweeney state any rejection of or decline to accept the scope of work. However, the accusatory tone of most of the emails concluding with a threat from Mr. Sweeney to take legal action against me made it clear that Mr. Sweeney was not intending to execute a contract for the work proposed.

8. The Opposition Brief also asserts that I committed scientific fraud via the production of a map, first in 2003 and refined over the years to the present, showing the location of restored tidal marshes in Suisun Marsh. It is my position that the original and all subsequent iterations of the maps in question are accurate to the best of my knowledge, and as clarified

herein.

These maps show the location of formerly diked lands now subject to the regular ebb and flow of the tides. The original map was one of several prepared for site selection for a large CALFED Science Program-funded research project examining the ecological effects of tidal marsh restoration from the Delta through San Pablo Bay. I was the Lead Principal Investigator for this project, which included another ten Principal Investigators and five Collaborators representing academic, non-profit and public agency organizations. The original map series compiled information from an array of sources carefully analyzed and reviewed and the maps were prepared to assist the team of Principal Investigators in locating and assessing suitable study sites representing natural and restored tidal marshes.

As Mr. Sweeney correctly points out, the early versions of these maps (the February 2004 version is included as Exhibit 8 to Mr. Sweeney's Declaration) used one category for all restored properties, "completed project". Later versions of this map divided these restored properties into two groups, "constructed" restoration projects meaning those done intentionally to restore tidal marsh, and "natural" or "unintentional" restoration projects meaning those areas restored to tidal action through natural levee failures left unrepaired for extensive periods of time. At present, Suisun Marsh has 14 properties comprising over 2,000 acres of "naturally" restored tidal marshes and tidal open water. The Delta, also mapped, has well over 10,000 acres of such lands across several properties. For the purposes of the CALFED study, the reason why a property had become restored to tidal marsh was not relevant and thus was not investigated to any great degree. Later applications of this map to support development of the Suisun Marsh Habitat Management, Preservation, and Restoration Plan ("Suisun Marsh Plan") and Suisun Marsh Conservation Strategy did include research into site histories as the information benefited preparing those documents.

The method to determine whether a site was subject to tidal action or not included review of maps prepared by other entities, review of the 1998 EcoAtlas map prepared and distributed by SFEI, review of the 1996 Bay Area-wide aerial photograph library prepared by the National Oceanic and Atmospheric Administration, review of Department of Water Resources (DWR) aerial photographs of the entirety of Suisun Marsh flown in 1999, 2000, 2003, 2006, and 2009 during Suisun Marsh Plan and Suisun Marsh Conservation Strategy preparation, and outreach to individuals knowledgeable in each study region of the Estuary. These DWR high resolution natural color aerial photographs are flown at three-year intervals specifically for the Department of Fish and Wildlife (DFW) to prepare its tri-ennial Suisun Marsh Vegetation Map, the data from which are included for Point Buckler as Figure H-2 in the May 2016 Technical Assessment.

For the original map being questioned by Mr. Sweeney, we had reviewed the 1999 DWR aerial photograph for Point Buckler which clearly showed tidal connectivity. This aerial photograph is included as Figure A-14 in the May 2016 Technical Assessment. We reviewed the 1998 EcoAtlas, which identified the property as high elevation tidal marsh. We reviewed the 1999 Baylands Ecosystem Habitat Goals Project report, which used the 1998 EcoAtlas map information and showed Point Buckler as tidal marsh. To confirm these preliminary determinations of tidal connectivity at Point Buckler and the several other prospective study sites, several members of the CALFED research project team conducted a boat tour of several Delta, Suisun Marsh, and San Pablo Bay sites over several days in May 2003. The team boated to Point Buckler on May 28, 2003. During that visit, the team photographed the tidal marsh on the interior of Point Buckler visible through the levee breach we visited (see Photo 1 and Appendix S in the May 2016 Technical Assessment). The team did not enter the tidal sloughs at Point Buckler because the one breach we boated to was blocked to interior boat access by several large wooden pilings in the bay waters at the breach entrance. The team did not disembark onto the island or attempt to enter via the other levee breaches.

For later iterations of the Suisun Restoration Projects map, I obtained additional information from DFW (then called the Department of Fish and Game), the Suisun Resource Conservation District (SRCD), and BCDC to help determine whether the restored properties were constructed intentional restoration projects or natural unintentional tidally restored lands. Based on the findings of these efforts, Point Buckler was mapped as a natural unintended restoration property. That designation has remained to the most current version of this map, Figure 1 of the May 2016 Technical Assessment.

9. The Opposition Brief states that “many agencies relied on this map”. I am not in a position to affirm or reject that statement, as I am not and have not been an agency employee since development of the original map in 2003. I can state that this map is not a map of wetlands to satisfy the jurisdictional determination of any party including private or public land owners or regulatory agencies, nor has it ever been intended to be used for such purpose.

10. The Opposition Brief asserts that SFEI incorporated information from this map into its EcoAtlas wetland map and database and that the database indicated reference to a U.S. Army Corps of Engineers (USACE) 404 permit for Point Buckler. As I have never reviewed the EcoAtlas database project designation for Point Buckler, I cannot confirm or reject this assertion. The Opposition Brief further asserts that SFEI reviewed its files and determined there were no records to support the conclusions on the Suisun Restoration Projects map I had produced, and it removed the incorrect information from its database. The Opposition Brief cites Exhibit 10 of Mr.

Sweeney's Declaration, which is an incomplete record of email exchanged between Mr. Sweeney and Cristina Grosso of SFEI.

The Opposition Brief statements are in conflict with Exhibit 10 of Mr. Sweeney's Declaration. What that email exchange actually states is the following, from the June 17, 2015 email from Cristina Grosso to John Sweeney: "The Project Tracker database was initially populated in 2006 with information received from the US Army of Engineers (USACE) and a mapping effort by Dr. Siegel. The projects in question, Point Buckler and Chipps Island East, were added during this time. We reviewed the documentation for the two projects, and the project information being displayed on EcoAtlas was not substantiated by the USACE permit records. Therefore, we've removed the projects from the database and EcoAtlas." Emphasis added. In other words, the original EcoAtlas project tracker information regarding designation of Point Buckler as a permitted and constructed restoration project originated from USACE, not from my map.

This email Mr. Sweeney received on June 17, 2015 from SFEI (Exhibit 10 of Mr. Sweeney's Declaration) establishes that the source of the EcoAtlas project tracker designation for Point Buckler as a permitted, constructed wetland restoration project originated from USACE. Notwithstanding, Mr. Sweeney has publicly and falsely accused me of committing fraud in this specific regard, even though he has possessed, since June 17, 2015, accurate knowledge of this information source as being other than me. Mr. Sweeney continued to make this false accusation in his July 11, 2016 Declaration. In that Declaration, he also stated he is making these accusations against me public, even though he knows and has known for over one year that his accusations are false.

The Opposition Brief and Mr. Sweeney's Declaration including its Exhibit 10 fail to differentiate between designation of habitat type and designation of restoration project status. I have never mapped Point Buckler as a permitted, constructed restoration project. The SFEI "Project Tracker" database allegedly contained inaccurate information about restoration project status. In Mr. Sweeney's Exhibit 10, SFEI stated that it obtained project status information from the USACE. SFEI further stated it has corrected this error of project status, as indicated by the email quoted above. The EcoAtlas continues to this day to map Point Buckler as the habitat type of tidal marsh (web site accessed July 18, 2016).

The emails exchanged between me and Dr. Collins at SFEI (Attachment 3 to this Declaration) do include the following statement from Dr. Collins: "2. Classifications of these same two areas [Point Buckler and Chipps Island East] as tidal marsh. As part of the process to review project status, staff also review habitat classification. In each of these two cases there are

areas classified as tidal that are not, based on our own aerial image interpretation. We are fixing these classification errors. Again, there have been many classification sources over the years and we probably can't be sure of the source of these miss classifications. Also, as the resolution of imagery has increased, the need to differentiate between smaller and smaller areas has also increased. We have been reviewing and reclassification on an as-needed basis. However, we have also developed a new online tool to enable qualified experts to edit the maps themselves, which we will then periodically review. We hope this helps to improve and maintain the maps." Emphasis added. This statement from Dr. Collins indicates they are fixing classification errors for Point Buckler. The absence of changed habitat type classification on the EcoAtlas, accessed July 18, 2016, indicates either no change was needed, or that changes have not yet been made. I have no knowledge regarding revision status. Based on data presented in the May 2016 Technical Report, only the small area (0.538 acre) of eastern lowland terrestrial remnant levee should be subject to reclassification. This statement from Dr. Collins further illustrates the apparent conflation of project status with habitat type by Mr. Sweeney and his advisors.

11. The Opposition Brief asserts that "Mr. Sweeney believes that the errors in the 2004 map were intentional, and has made that belief known publicly". Not only are there no errors in the map, I did not intentionally misrepresent any information on the map. Further, Mr. Sweeney introduced in his July 11, 2016 Declaration, Exhibit 10, that the source of the incorrect information in a third party database over which I have no control, the EcoAtlas developed and maintained by SFEI, originated with the USACE and not from me. By Mr. Sweeney's own Declaration, he has known for over one year that I am not the source of the erroneous information in the EcoAtlas Project Tracker about Point Buckler being a permitted and constructed tidal marsh restoration project, yet he continues to publicly accuse me of this error.

12. The Opposition Brief asserts the Club warned the Regional Water Quality Control Board (RWQCB) staff not to use my services because of alleged bias. In particular, the Opposition Brief refers to an email I sent identifying Mr. Sweeney as "high risk". I did make that statement, in an email to a former employee to which Mr. Sweeney was also sending threatening emails regarding the Suisun Restoration Projects map.

The basis for my statement of Mr. Sweeney as "high risk" is that in the emails exchanged between he and I (Attachment 2 to this Declaration), Mr. Sweeney in his June 18, 2015 email to me threatened me with a lawsuit and monetary damages if I did not write a letter to the Army Corps, BCDC, State Lands, DWR, CFG (CDFW), SRCD, etc. admitting my alleged mapping error, that I have no data to support the map claims, that I apologize for the damage the alleged mapping error may have caused, and that I state Point Buckler and Chipps Island East are today

managed wetlands. Mr. Sweeney further demanded that I write or email BCDC to tell them that both Chipps and Buckler are managed wetlands and that BCDC drop its claims that these two properties are no longer managed wetlands. Mr. Sweeney stated in that email that legal proceedings against me would be initiated that week. To date, I am not aware of any such legal proceedings. In other words, Mr. Sweeney threatened me with legal action and monetary damages if I did not commit perjury. I never acted upon any of Mr. Sweeney's demands and have had no email correspondence with Mr. Sweeney since receiving this June 18, 2015 email from him.

13. The Opposition Brief asserts in conclusion regarding me that "a scientist accused of scientific fraud is not in the best position to provide a cool-headed and impartial assessment of his accuser". It asserts that evidence favorable to the Club was ignored and cites findings regarding the High Tide Line and the debris wrack line and aerial photographs showing no signs of Point Buckler being subject to daily tidal inundation as evidence of this bias. As explained in the Experts' Response to the July 11, 2016 Evidence Package, these and the many other challenges to the May 2016 Technical Assessment findings are factually incorrect. I considered all appropriate evidence and data cited in the May and July 2016 technical reports, and am able to defend my conclusions and analyses. Such conclusions and analyses are consistent with my more than 30 years' experience, and were not pre-determined based on the identity of the dischargers.

14. The Opposition Brief also asserts in conclusion that the "scientific quality of the Technical Report is simply not up to any standards that should be acceptable to the Regional Board". This assertion has no basis in fact.

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

Dr. Stuart Siegel

ATTACHMENT 1

CURRICULUM VITAE

Stuart W. Siegel, Ph.D., P.W.S.

stuart@swampthing.org, siegel@sfsu.edu

CURRENT POSITIONS

Coastal Resilience Specialist, San Francisco Bay National Estuarine Research Reserve
Adjunct Professor, San Francisco State University Department of Earth and Climate Sciences
3152 Paradise Drive, Tiburon, CA 94920 USA
415.299.8746 • www.sfbaynerr.org • tornado.sfsu.edu

Owner, Siegel Environmental LLC
2 Belle Avenue, San Rafael, CA 94901 USA
415.299.8746 • www.siegelenvironmental.com

EDUCATION

Ph.D., Geography, 2002. University of California at Berkeley
Dissertation: "Slough Channel Network and Marsh Plain Morphodynamics in a Rapidly Accreting Tidal Marsh Restoration on Diked, Subsided Baylands, San Francisco Estuary, California, USA." *Supervisor*: David R. Stoddart. *Committee*: William E. Dietrich, N. Maggi Kelly

M.A., Geography, 1993. University of California at Berkeley
Thesis: "Tidal Marsh Restoration and Dredge Disposal in the San Francisco Estuary, California: Selected Scientific and Policy Principles for Implementation of the Montezuma Wetlands Project." *Supervisor*: David R. Stoddart. *Committee*: Lisa E. Wells, Alex J. Horne

B.A., Environmental Science, 1986. University of California at Berkeley
Thesis: "Rising of the tide – study of a salt marsh restoration." *Supervisor*: Doris Sloan

B.S., Chemistry, 1986. University of California at Berkeley

SUMMARY OF INTERESTS

I focus on the science and policy intersections of climate change, ecosystem restoration, resilience, and regional planning. Responding to climate change requires leadership, integrated and innovative systems thinking, breadth of knowledge and experience to move ideas to implementation, and collaboration. My accomplishments across these essential elements are many, some of which in the San Francisco Bay-Delta include:

- Led the design teams for highly innovative wetland restoration projects resilient to climate change, including Sears Point, Aramburu Island and Sonoma Creek.
- Thought leader for regional ecosystem planning including co-lead scientist for the Delta Regional Ecosystem Restoration and Implementation Plan (DRERIP), technical lead for Governor Schwarzenegger's Delta Vision Ecosystem Workgroup, and Science Advisor for the interagency Suisun Marsh Plan.
- Led several multi-disciplinary research teams investigating wetland functions and services, funded by grants totaling over $9 million.

- Wrote "Drivers of Change" chapter in 2014 *Suisun Marsh Futures* book, examining climate change effects on large-scale wetland management and restoration.
- Co-wrote The Nature Conservancy's Wetland Carbon Sequestration Road Map to Implementation for the Sacramento Delta.
- Regular public speaker on integrated environmental and climate change issues at conferences, public meetings, government agencies, and universities, having given many dozens of talks over my career.

RESEARCH INTERESTS

My applied or "management relevant" research focus is the intersection of climate change, restoring ecosystem services and functions, coupled natural-human systems resiliency, and mitigation and adaptation. The complexity of these topics is tremendous, so I often work within collaborations. My work is primarily in estuarine and coastal tidal wetlands and lagoons, their associated ecosystem complexes, and the adjacent human landscapes protected by these natural systems. My geographic focus is mostly the San Francisco Estuary, with international collaborations including comparative geographic studies.

My research interests are twofold. First is around wetlands function and outcomes of restoration in the contexts of climate change effects, mitigation, adaptation, and within estuarine ecosystem gradients or "living shorelines". Wetland functions are intimately linked to hydrology and salinity, both of which climate change will alter, and they are linked to land use practices and their human influences. Long-term studies are effective in elucidating functional changes which in turn can help proscribe restoration and conservation efforts. Wetlands also have tremendous potential to sequester atmospheric carbon. Complexities arise with issues such a methane release, high spatial variability, variation in annual productivity with salinity, economic incentives for land use conversion, limited regulatory-based carbon markets, absence of verification protocols, and more. Wetlands also can be components of living shorelines, integrating ecological functions and ecosystem services across subtidal eelgrass and oyster reefs to sand and gravel "beaches", across wetlands, and into wetland/upland transition zones and associated sea level rise accommodation space. My interests are to work at the intersection of the physical sciences, economics, and policy, in collaboration with researchers across these and related biological resource fields, with the aim to support bringing these concepts to "market".

Second is to advance ecosystem restoration design efficiency, planning, and outcomes assessment, folded within a strong adaptive management framework. I have worked for years with the former CALFED and current Delta Science Program to help develop many related concepts. My research interests would be in how to guide the adaptive management process meaningfully and cost effectively. These efforts can include bringing "lessons learned" to bear, cost-effective assessment methodologies, systematic integrative synthesis, and the incorporation of outcomes into effective governance structures.

TEACHING INTERESTS

My teaching interests include: restoration ecology principles and practice integrating physical, biological, regulatory, economic, and policy considerations; ecosystem restoration, ecosystem services, and climate change; and a wetlands science field course. I am interested in developing student expertise in developing and articulating problem

statements, interdisciplinary approaches, quantitative analysis including uncertainty analysis, and effective written, visual, and oral communication of scientific information.

PROFESSIONAL EXPERIENCE

Department of Earth and Climate Sciences, San Francisco State University. 2016-present. Adjunct Professor. Tiburon, CA

San Francisco Bay National Estuarine Research Reserve. 2015-present. Coastal Resilience Specialist. Tiburon, CA

Siegel Environmental, LLC. 2015-present. Owner. San Rafael, CA

Environmental Science Associates, Inc., 2014. Vice President. San Francisco, CA

Wetlands and Water Resources, Inc., 1996-2014. President. San Rafael, CA

San Francisco Estuary Institute, 1999-2000. Research Associate. Oakland, CA

Regional Water Quality Control Board, San Francisco Bay Region, 1996-1998. Wetlands Group intern. Oakland, CA

Levine-Fricke, Inc., 1989-1996. Senior Environmental Scientist; Technical Discipline Leader for Ecological Restoration Group. Emeryville, CA

University of California at Berkeley, 1992. Graduate Student Instructor, Moorea, French Polynesia field course

ICF, 1987-1989. Community Relations, Emergency Preparedness. San Francisco, CA

Marine Ecological Institute, 1987. Ichthyology Instructor. Redwood City, CA

San Francisco Bay Conservation and Development Commission, 1985-1987. Permit Analyst, Environmental Planner Intern. San Francisco, CA

CERTIFICATIONS

Professional Wetland Scientist #000196, Society of Wetland Scientists, 1994

Scientific Scuba Diver #749, University of California at Berkeley, 1994

EXPERT PANELS AND COMMITTEES

Climate Adaptation for Decision Support: Developing a Spatially Explicit Climate Adaptation Framework for Estuarine Ecosystems of the San Francisco Bay, Invited Contributor. San Francisco Bay Joint Venture. 2014-2015.

IPCC Expert Meeting on Scoping Additional Guidance on Wetlands, Geneva, Switzerland, Invited Participant. Intergovernmental Panel on Climate Change, Task Force on National Greenhouse Gas Inventories. 2011

Climate Ready Estuaries Expert Elicitation Panel, San Francisco Estuary. U.S. Environmental Protection Agency. 2010

Cache Slough Complex Technical Team. Department of Water Resources. 2009-2014

Suisun Marsh Technical Team. Department of Water Resources. 2009-2010

Bay-Delta Conservation Plan Habitat Restoration Technical Team, Conservation Measure Technical Evaluation Team, Conservation Measure Technical Synthesis Team. California Resources Agency. 2007-2008

Delta Vision Blue Ribbon Task Force, Ecosystem Workgroup Technical Lead. Governor Schwarzenegger's Task Force. 2007-2008

Delta Risk Management Strategy Ecological Resources Committee. Department of Water Resources. 2006-2008

San Francisco Bay Subtidal Goals Project Restoration Committee. National Marine Fisheries Service and State Coastal Conservancy. 2006-2010

Suisun Marsh Plan Science Advisor and Chair of the Suisun Marsh Science and Technical Advisory Panel. Suisun Marsh Charter Principal Agencies. 2005-2010

Napa Plant Site Restoration Technical Advisory Team. Department of Fish and Game. 2005-2008

Hamilton Airfield Restoration Design Review Team. U.S. Army Corps of Engineers. 2005

Delta Ecosystem Restoration Implementation Plan (DRERIP), Adaptive Management Project Team co-lead scientist, Action Team co-chair. California Bay-Delta Authority Ecosystem Restoration Program. 2003-2008

Blacklock Restoration Project Advisory Team. Department of Water Resources. 2003-2014

Dutch Slough Restoration Project Adaptive Management Working Group. State Coastal Conservancy. 2003-present

California Bay-Delta Authority Science Program Wetlands Advisor. 2002-2008

San Francisco Bay Wetland Restoration Program Design Review Group, Wetland Monitoring Group, Wetland Tracker Advisory Team, Physical Processes Team. Regional Water Quality Control Board San Francisco Bay Region. 1999-2007

San Francisco Airport Runway Expansion National Science Panel, wetlands representative. National Oceanic and Atmospheric Administration. 1999

Middle Harbor Habitat Enhancement Project Technical Advisory Committee. Port of Oakland. 1997-2000

Hamilton Army Airfield Wetland Restoration Technical Advisor. State Coastal Conservancy. 1997-2001

San Francisco Estuary Habitat Goals Project Hydrogeomorphic Advisory Team. San Francisco Estuary Project. 1996-1999

UC Berkeley Diving Control Board student representative. 1994-1998

REFEREED PUBLICATIONS AND CONFERENCE PROCEEDINGS

Siegel, S.W. 2014. Suisun Marsh Today: Agents of Change. Pp.185-208 in: P.B. Moyle, A.D. Manfree, P.L. Fiedler, eds., *Suisun Marsh: Ecological History and Possible Futures.* UC Press, Berkeley.

DiGennaro, B., D. Reed, C. Swanson, L. Hastings, Z. Hymanson, M. Healey, **S. Siegel**, S. Cantrell, and B. Herbold. 2012. Using Conceptual Models and Decision-Support Tools to Guide Ecosystem Restoration Planning and Adaptive Management: An Example from the Sacramento–San Joaquin Delta, California. *San Francisco Estuary and Watershed Science* 10(**3**): Article 1. http://www.escholarship.org/uc/item/3j95x7vt

Tuxen, K., L. Schile, D. Stralberg, **S. Siegel**, T. Parker, M. Vasey, J. Callaway, and M. Kelly. 2011. Mapping changes in tidal wetland vegetation composition and pattern across a salinity gradient using high spatial resolution imagery. *Wetlands Ecology and Management* 19(**2**): 141-157

Tuxen, K., N.M. Kelly, L. Schile, and **S.W. Siegel**. 2008. Vegetation colonization in a restoring tidal marsh: A remote sensing approach. *Restoration Ecology* 16(**2**): 313-323

Siegel, S.W. 2004. Tidal marsh restoration in Suisun Marsh. Pp. 91-94 in*:* R.L. Brown, ed., *Summary of 2004 Workshop Making Science Work for Suisun Marsh.* Bay-Delta Science Consortium, Sacramento, CA

Siegel, S.W. 2002. Slough Channel Network and Marsh Plain Morphodynamics in a Rapidly Accreting Tidal Marsh Restoration on Diked, Subsided Baylands, San Francisco Estuary, California, USA. Ph.D. Dissertation, University of California at Berkeley. 360 pp.

Malamud-Roam, K., **S. Siegel,** M. Goman, and L. Wells. 1995. Tidal Marshes: the Marginal Landscapes of San Francisco Bay. Pp. 251-269 in: E.M. Sangines, and D.W. Anderson, eds., *Recent Geologic Studies in the San Francisco Bay Area*. Pacific Section SEPM, Oakland, CA

Siegel, S.W. 1993. *Tidal Marsh Restoration and Dredge Disposal in the San Francisco Estuary, California: Selected Scientific and Policy Principles for Implementation of the Montezuma Wetlands Project*. Master's thesis, University of California at Berkeley

SELECTED TECHNICAL LITERATURE

Siegel, S., P. Bachand, D. Gillenwater, S. Chappell, B. Wickland, O. Rocha, M. Stephenson, W. Heim, C. Enright, P. Moyle, P. Crain, B. Downing, and B. Bergamaschi. 2011. Final Evaluation Memorandum, Strategies for Resolving Low Dissolved Oxygen and Methylmercury Events in Northern Suisun Marsh. Prepared for the State Water Resources Control Board, Sacramento, California. SWRCB Project Number 06-283-552-0. May.

Siegel, S.W., C. Enright. 2011. Suisun Marsh Conservation Strategy. Prepared for The Nature Conservancy, Sacramento, CA. February.

A. Merrill, **S.W. Siegel**, B. Morris, A. Ferguson, G. Young, C. Ingram, P. Bachand, H. Shepley, M. Singer, and N. Hume. 2011. Greenhouse Gas Reduction and Environmental Benefits in the Sacramento-San Joaquin Delta: Advancing Carbon Capture Wetland Farms and Exploring Potential for Low Carbon Agriculture. 292pp. Prepared for The Nature Conservancy, Sacramento, California. January.

Siegel, S.W., N. Nikirk, and D. Christophel. 2010. Delta Ecosystem White Paper. Prepared for the Delta Stewardship Council, Sacramento, California. October.

Siegel, S.W., C. Enright, C. Toms, C. Enos, and J. Sutherland. 2010. Physical Processes. Chapter 1 in: S. Siegel, ed., *Suisun Marsh Tidal Marsh and Aquatic Habitats Conceptual Model*. 239pp. Suisun Marsh Charter Principal Agencies.

Engle, J., C. Enos, K. McGourty, T. Porter, B. Reed, J. Scammell-Tinling, K. Schaeffer, **S.W. Siegel**, E. Crumb. 2010. Aquatic Environment. Chapter 2 in: S. Siegel, ed., *Suisun Marsh Tidal Marsh and Aquatic Habitats Conceptual Model*. 239pp. Suisun Marsh Charter Principal Agencies.

Siegel, S.W., C. Toms, D. Gillenwater, C. Enright. 2010. Tidal Marsh. Chapter 3 in: S. Siegel, ed., *Suisun Marsh Tidal Marsh and Aquatic Habitats Conceptual Model*. 239pp. Suisun Marsh Charter Principal Agencies.

Isenberg, P., M. Florian, R.M. Frank. T. McKernan, S.W. McPeak, W.K. Reilly, R. Seed. 2008. Delta Vision Strategic Plan. Governor Schwarzenegger's Blue Ribbon Task Force,

Sacramento, CA. (**S.W. Siegel** was the lead author for the ecosystem restoration sections.). http://deltavision.ca.gov/.

Siegel, S.W. and P.A.M. Bachand. 2002. Feasibility Analysis: South Bay Salt Pond Restoration, San Francisco Estuary, California. Wetlands and Water Resources, San Rafael, CA. 228 pp. http://www.swampthing.org/Downloads/South-Bay_Salt_Ponds/South_Bay_Salt-Ponds_Full_Report.pdf.

AWARDS AND FELLOWSHIPS

Switzer Environmental Leadership Fellow, 2001

California Sea Grant Fellow, 1997-1999

Carl O. Sauer Memorial Fellow, 1994

Switzer Environmental Fellow, 1992-1993

California Environmental Internship Program Fellow, 1985-1986

GRANTS

U.S. Environmental Protection Agency San Francisco Bay Water Quality Improvement Fund. *Suisun Marsh Managed Wetlands Best Management Practices Water Quality Improvement Pilot Project.* Grant No. W9-99T25701-0. 2015-2019. $1,715,564.

Lead Principal Investigators: **Stuart Siegel**; Philip Bachand (Bachand Associates), Steve Chappell (Suisun Resource Conservation District)

Description: Field test and assess a suite of water quality improvement BMPs across multiple managed wetlands, develop modeling tool for evaluating future BMP actions, and develop organizational relationships to improve long-term water quality conditions.

California Department of Fish and Game Ecosystem Restoration Program. *Lower Putah Creek Restoration from Toe Drain to Putah Diversion Dam: Project Description Development, CEQA Compliance, Permits, Selected Final Design.* 2012-2014. Grant No. E1183015. $2,260,313.

Lead Principal Investigators: Robin Kulakow and Ann Brice, Yolo Basin Foundation; **Stuart Siegel**

Description: Plan and design the Lower Putah Creek Channel and Tidal Marsh Restoration, which will restore 300-700 acres of tidal freshwater wetlands, create four miles of a new creek channel, improve anadromous fish access to 25 miles of stream, and restore in-stream salmon habitat.

U.S Department of Agriculture, Agriculture and Food Research Initiative. *Rice culture in the Sacramento-San Joaquin Delta to mitigate past agricultural impacts, improve water quality and sequester carbon.* 2011-present. Award No. 2011-67003-30371. $4,877,051.

Lead Principal Investigator: William Horwath (UC Davis)

Collaborating Principal Investigators: Bruce Lundquist (UC Davis), Phillip Bachand (Bachand Associates), Sandra Bachand (Bachand Associates), Dennis Baldocchi (UC Berkeley), Leslie Butler (UC Davis), Steven Deverel (Hydrofocus), **Stuart Siegel**, Amy Merrill (Stillwater Sciences), Jacob Fleck (U.S. Geological Survey)

Description: Demonstrate rice-based cropping systems are one solution to the Sacramento-San Joaquin Delta's linked problems of ongoing agriculture in the face of

subsidence, fragile levee systems, soil oxidation, greenhouse gas emissions, and water quality concerns. Study utilizes plot, field and farm-scale studies to 1) build off current UC/USDA efforts to develop agronomic practices for Delta rice; 2) assess/quantify mitigation to subsidence, GHG emission, soil carbon dynamics and storage, water quality effects, and rice economics; 3) quantify aforementioned environmental effects of this changing land use practice in comparison to current predominant Delta crops, and 4) scale up findings to the entire Delta to examine sustainable strategies for regionalizing rice throughout the Delta at a scale that will have significant environmental and economic benefits to the State. (**Siegel** role is within item #4, scaling up to the Delta.)

Metropolitan Water District of Southern California, The Nature Conservancy, Pacific Gas and Electric, Sacramento Municipal Utility District, CQuest. *Greenhouse Gas Reduction and Environmental Benefits in the Sacramento-San Joaquin Delta: What Next for Managed Wetlands and What Potential Exists for Conservation Tillage Agriculture?* 2009-2011. $185,000.

Lead Principal Investigator: Campbell Ingram, The Nature Conservancy

Collaborating Principal Investigators: **Stuart Siegel**, Amy Merrill (Stillwater Sciences), Belinda Morris (Solutions for a Green Economy), Greg Young (Basic3), Philip Bachand (Bachand Associates), Terri Gaines (California Department of Water Resources), Brian Bergamaschi (U.S. Geological Survey), Peter Miller (Natural Resources Defense Council), and Ann Hayden (Environmental Defense Fund)

Description: White paper examining the science needs to support development of a carbon credits wetlands protocol for exchange markets, the socio-economic and policy considerations in large-scale conversion of Delta agriculture to wetlands carbon sequestration, and a review of the potential for conservation tillage to reduce greenhouse gas emissions from agriculture on the Delta peat soils.

California State Water Resources Control Board. *Strategy for Resolving Methyl Mercury and Low Dissolved Oxygen Events in Northern Suisun Marsh.* 2007-2011. Grant No. 06-283-552-0. $800,000.

Lead Principal Investigator: **Stuart Siegel**

Collaborating Principal Investigators: Philip Bachand (Bachand Associates), Chris Enright (California Department of Water Resources), Jon Burau (U.S. Geological Survey), Brian Bergamaschi (U.S. Geological Survey), Mark Stephenson (California Department of Fish and Game), Peter Moyle (University of California at Davis), Steve Chappell (Suisun Resource Conservation District)

Description: Field studies to determine mechanisms leading to MeHg and low DO generation in diked, managed waterfowl hunting marshes and development of best management practices to reduce their occurrences and impacts to wildlife resources.

CALFED Bay-Delta Program Science Program and Ecosystem Restoration Program. *Integrated Regional Wetland Monitoring Pilot Project.* 2003-2014. Grant Nos. 4600002970 (2003), P0685516 (2006), E1083005 (2011). www.irwm.org. $4.38 million.

Lead Principal Investigator: **Stuart Siegel**

Collaborating Principal Investigators: Larry Brown (U.S. Geological Survey), Risa Cohen (Georgia Southern University), Alex Parker (San Francisco State University), Maggi Kelly (University of California at Berkeley), Diana Stralberg (PRBO Conservation

Science), Nadav Nur (PRBO Conservation Science), V. Tom Parker (SFSU), Mike Vasey (SFSU), John Callaway (University of San Francisco), Steve Bollens (Washington State University), Charles Simenstad (University of Washington), Frances Wilkerson (SFSU), Richard Dugdale (SFSU), Josh Collins (San Francisco Estuary Institute), Philip Bachand (Bachand Associates), Jeremy Lowe (Philip Williams Associates)

Description: Field studies to determine the role of tidal marsh restoration on restoring ecosystem functions at multiple scales; emphasis on plant communities, birds, and fish in landscape ecology context.

National Sea Grant College Program, National Oceanic and Atmospheric Administration, U.S. Department of Commerce. *Geomorphic processes in restoring tidal marshes of the San Francisco Estuary.* 1996-2000. Grant No. NA66RG0477, project number R/CZ-139, California Sea Grant Program. $250,000.

Lead Principal Investigator: David Stoddart (UC Berkeley)

Collaborating Principal Investigators: William Dietrich (UC Berkeley)

Description: Field studies to examine geomorphic processes (transport, hydrodynamics, and sedimentation) and their role influencing geomorphic and ecological outcomes of tidal marsh restoration. Dissertation research funding, originated with and pursued by **Stuart Siegel**.

CONFERENCE PRESENTATIONS

Large-Scale Ecosystem Restoration Science and Policy

2015 *Climate Change: Policy Challenges for Restoration.* State of the San Francisco Estuary Conference, Oakland, California. San Francisco Estuary Project. September. Invited presentation.

2014 *Exploring Emergent Tidal Marsh Restoration in Suisun and the Delta for Fishes.* Ten-talk session co-organizer and co-chair with Chris Enright, Delta Science Program. Bay-Delta Science Conference, Sacramento, California. Delta Science Program. October.

2014 *Conundrum: Understanding Native Fish Functions of Emergent Tidal Marsh Restoration in a Highly Altered Landscape Largely Devoid of Tidal Marsh.* Bay-Delta Science Conference, Sacramento, California. Delta Science Program. October.

2013 *Applying Modeling Results to Tidal Restoration Project Alternatives Development and Selection: Prospect Island.* Interagency Ecological Program-California Water and Environmental Modeling Forum Joint Annual Workshop, Folsom, CA. May.

2012 *Restoring Prospect Island: Science, Adaptive Management and Design Alternatives.* California Society for Ecological Restoration (SERCAL) Annual Conference. Davis, California. May.

2011 *A Vision for Landscape Scale Tidal Restoration in Suisun Marsh.* State of the San Francisco Estuary Conference, Oakland, California. San Francisco Estuary Project. September. Invited presentation.

2010 *Landscape-Scale Considerations in Restoring Ecosystem Functions in Suisun Marsh and Bay.* Bay-Delta Science Conference, Sacramento, California. Delta Science Program. September.

2008 *Delta Vision Ecosystem Workgroup Recommendations.* CALFED Science Conference, Sacramento, California. October.

2007 *Determinism, Chaos and Randomness: Delta Ecosystem Restoration.* State of the Estuary Conference, Oakland, California. San Francisco Estuary Project. October. Invited presentation.

2003 *Status of Wetland Restoration Efforts in the San Francisco Estuary.* State of the Estuary Conference, Oakland, California. San Francisco Estuary Project. October. Invited presentation.

2001 *Inventory and Status of North Bay Wetland Restoration Projects.* State of the Estuary Conference, San Francisco, California. San Francisco Estuary Project. October. Invited presentation.

Methylmercury, Other Water Quality and Land Use

2012 *Strategies for Reducing Low Dissolved Oxygen and Methylmercury Events Originating in Diked Managed Seasonal Wetlands of Suisun Marsh, California.* Bay Delta Science Conference, Sacramento, California. Delta Science Program. October.

Large-Scale Ecosystem Monitoring and Assessment

Presentations between 2004 and 2006 on the Integrated Regional Wetland Monitoring Pilot Project at two CALFED Science Conferences, State of the Estuary Conference, and a Joint Conference of the Western Chapter of the Society of Wetland Scientists and the Western Section of the Wildlife Society

Site-Specific Applied Restoration Science and Projects

Presentations at numerous conferences since 1989 on a number of projects in which I had been involved, including dissertation research. Conferences included: Bay-Delta Science Conference, San Francisco State of the Estuary Conference, AGU Chapman Salt Marsh Conference, Society of Wetland Scientists Annual Conference, American Geophysical Union Fall Meeting, Association of American Geographers Annual Conference, Association of Pacific Coast Geographers Annual Conference, and Coastal Zone Conference.

WORKSHOP, PUBLIC MEETING, AND STAKEHOLDER GROUP PRESENTATIONS

Large-Scale Ecosystem Restoration and Climate Change Science and Policy

2016 *Estuarine Ecosystem Restoration 2.0: Adapting to and for Climate Change.* Presented to the Department of Earth and Climate Sciences Distinguished Speaker Series, San Francisco State University, California. March.

2016 *Even the Best Ideas Have a Hard Time Getting to Implementation.* Presented to the Environmental Forum of Marin public lecture series, San Rafael, California. February.

2015 *Climate Change: Policy Challenges for Restoration.* Presented to the San Francisco Bay Conservation and Development Commission staff. October.

2014 *Linking Water Supply Reliability, Flood Risk Management, and Ecosystem Health in a Complex Sociopolitical Setting: California's Sacramento-San Joaquin Delta.* Visiting Chinese Scholars Program, UC Berkeley, California. November.

2014 *Science and Ecosystem Reconciliation of the Delta and Suisun Ecosystem – Thoughts from the Restoration Trenches.* California Water Policy Seminar Series: Reconciling Ecosystem and Economy, UC Davis, California. March.

2011 *Suisun Marsh Today: A Reflection on Drivers of Change.* Suisun Marsh in the 21st Century: A Landscape of Change and Opportunity, Davis, California. University of California at Davis. May.

2010 *Highlights from the Delta and Suisun Ecosystem White Paper.* Delta Stewardship Council Meeting, West Sacramento, California. Delta Stewardship Council. October.

2009 *What Should We Do? Are We Doing it?* Ecosystem Restoration at the Landscape Scale: the North Delta and Suisun Marsh, Sacramento, California. CALFED Science Program. November.

2008 *Ecosystem Work Group Progress Reports.* Delta Vision Blue Ribbon Task Force monthly public meetings. California Resources Agency. January-August.

2008 *What Does a Healthy Estuary Mean?* Presented jointly with Robert Twiss (UC Berkeley). Water Education Foundation Delta Vision Workshop, Sacramento, California. March.

2007 *Working Toward Resiliency with Ecosystem Restoration.* Water Education Foundation Delta Vision Workshop, San Jose, California. December.

2007 *Tidal Restoration in the Delta and Suisun: Geography and Concepts from May 4th 2007 Ecological Geography Workshop.* Delta Vision Stakeholder Coordination Group, Monthly Public Meeting, Sacramento. California Resources Agency. May.

2004 *Tidal Marsh Restoration in Suisun Marsh.* 1) Suisun Marsh Landowners Annual Meeting, Suisun Marsh, California. Suisun Resource Conservation District. April. 2) Making Science Work for Suisun Marsh, Sacramento, California. CALFED Bay-Delta Authority. March.

Methylmercury, Other Water Quality and Land Use

BMPs for Reducing Low Dissolved Oxygen and Methylmercury Production and Export from Diked Managed Seasonal Wetlands in Suisun Marsh. Presented current findings and recommendations over duration of research project. Presented at:

2012 Restoring Water Quality and Aquatic Ecosystems, Sacramento, California. State Water Resources Control Board and U.S. Environmental Protection Agency. February.

2011 Delta Tributaries Mercury Council Meeting. Davis, California. Sacramento River Watershed Program. December.

2010 Suisun Marsh Landowners Annual Meeting. Suisun Marsh, California. Suisun Resource Conservation District. April.

2009 San Francisco Bay Regional Monitoring Program Annual Mercury Meeting, Oakland, California. February

Land Use and Climate Change: Natural Resources and Agriculture in California

2009 *Carbon Capture Wetland Farming: a New Future for Subsided Delta Lands?* Presented with Brian Bergamaschi and Roger Fujii (U.S. Geological Survey). Kyoto USA, Berkeley, California. May.

2008 *Suisun Marsh and the Delta: Climate Change and the Upper Estuary.* Climate Ready Estuaries Kickoff Meeting, San Francisco. U.S. EPA. October.

2008 *Suisun Marsh: Many Things to Many People —Possible Ecological Futures with Sea Level Rise, Climate Change, and Delta Planning, a Science Perspective.* San Francisco

Bay Conservation and Development Commission, Commission Public Meeting, San Francisco. Bay Conservation and Development Commission. September.

CONFERENCE POSTERS

Large-Scale Ecosystem Restoration Science and Policy

2014 *A Proposed Methodology for Assessing Regional Digital Elevation Model Suitability for Tidal Wetland Restoration Planning in Suisun Marsh.* Co-author with Department of Water Resources. Bay Delta Science Conference, Sacramento, California. Delta Science Program. October.

2012 *Current and Planned Restoration in the Delta and Suisun Marsh.* Co-author with U.S. Geological Survey; Delta Conservancy and Department of Water Resources. Bay Delta Science Conference, Sacramento, California. Delta Science Program. October.

2007 *Science Integration Strategy for the Suisun Marsh Plan.* State of the Estuary Conference, Oakland, California. San Francisco Estuary Project. October.

2006 *Science Integration Strategy for the Suisun Marsh Plan.* CALFED Science Conference, Sacramento, California. October.

2001 *Inventory and Status of North Bay Wetland Restoration Projects.* State of the Estuary Conference, San Francisco, California. San Francisco Estuary Project. October.

Methylmercury, Other Water Quality and Land Use

2011 *Strategy for Resolving Low Dissolved Oxygen and Methylmercury Events in Northern Suisun Marsh.* State of the San Francisco Estuary Conference, Oakland, CA. San Francisco Estuary Project. September. Collaboration with Bachand and Associates, Suisun Resource Conservation District, U.S. Geological Survey, Delta Stewardship Council, California Department of Fish and Game, and University of California at Davis.

Land Use and Climate Change: Natural Resources and Agriculture in California

2011 *Roadmap for Advancing Wetland Carbon Sequestration and Low Carbon Agriculture in the Sacramento-San Joaquin Delta.* State of the San Francisco Estuary Conference, Oakland, CA. San Francisco Estuary Project. September. Collaboration with Stillwater Sciences, Bachand and Associates, The Nature Conservancy, Environmental Defense Fund, Tully and Young.

Large-Scale Ecosystem Monitoring and Assessment

Integrated Regional Wetland Monitoring Pilot Project: Overview and *IRWM Physical Processes Monitoring in Restored and Reference Tidal Marshes*. Presented at:

2012 Bay Delta Science Conference, Sacramento, California. Delta Science Program. October.

2007 State of the Estuary Conference, Oakland, California. San Francisco Estuary Project. October.

2006 CALFED Science Conference, Sacramento, California. October.

2003 State of the Estuary Conference, Oakland, California. San Francisco Estuary Project. October.

Site-Specific Applied Restoration Science and Projects

2011 and 2012. *Managed Shoreline Retreat by Reconstruction of an Estuarine Beach at Aramburu Island, Richardson Bay.* State of the San Francisco Estuary Conference, Oakland, CA. San Francisco Estuary Project. September. Bay Delta Science Conference, Sacramento, California. Delta Science Program. October. Co-author with Annapolis Field Station and Marin County.

2011 and 2012. *The Lower Yolo Bypass Restoration Project: Large-Scale Restoration of Ecosystem Services in the Delta.* State of the San Francisco Estuary Conference, Oakland, CA. San Francisco Estuary Project. September. Bay Delta Science Conference, Sacramento, California. Delta Science Program. October. Co-author with cbec ecoengineering and State and Federal Contractors Water Agency.

2003 *Role of Initial Conditions in Channel Network Evolution on a Restored Tidal Marsh.* CALFED Science Conference 2003, Sacramento, California. January.

2001 *Tidal Channel Network Evolution at the Restored Petaluma River Marsh, Sonoma County, California.* State of the Estuary Conference, San Francisco, California. San Francisco Estuary Project. October.

1999 *Using High Resolution Digital Elevation Models for Wetland Restoration Monitoring.* San Francisco Estuary Project State of the Estuary Conference, San Francisco, California.

TEACHING EXPERIENCE

2014 *Science and Ecosystem Reconciliation of the Delta and Suisun Ecosystem – Thoughts from the Restoration Trenches.* Reconciling Ecosystem and Economy: Winter 2014 California Water Policy Seminar Series, UC Davis Center for Watershed Sciences and California Environmental Law and Policy Center.

2012 *Ecosystem Restoration in the Sacramento-San Joaquin Delta: Views from 30,000 Feet and the Project Scale.* Fall 2012 Ecology and Geology Colloquium, Sacramento, California. California State University Sacramento. October.

2011 Guest Lecturer, "Foundations of Ecosystem Restoration" (Environmental Studies 128), Professor D'Antonio, University of California at Santa Barbara

1993-1999. Guest Lecturer, "Islands and Oceans" (Geography 131), Professors Nietschmann and Stoddart, University of California at Berkeley

1992 Graduate teaching assistant. "Biology and Geomorphology of Tropical Islands" (Integrative Biology C158/Environmental Science, Policy and Management C107), University of California at Berkeley, Berkeley, California. http://ib.berkeley.edu/moorea/UC_Berkeley_Moorea_Class.html

1987 Ichthyology instructor. Operated 4-hour marine educational tours on South San Francisco Bay for primary, secondary, and college students, with tow nets and on-board tanks for sampling and studying bay fishes. Marine Sciences Institute, Redwood City, California. http://www.sfbaymsi.org/

MAJOR ACTIVITES IN ECOSYSTEM RESTORATION, CLIMATE CHANGE MITIGATION, AND ECOSYSTEM SERVICES

Climate Adaptation for Decision Support: Developing a Spatially Explicit Climate Adaptation Framework for Estuarine Ecosystems of the San Francisco Bay, Invited

Contributor. CADS developed a pragmatic framework for decision-making by local, state and federal agencies in allocating fiscal resources to promote ecosystem functions in light of a range of climate change-induced changes to natural processes in the San Francisco Estuary. Dr. Siegel developed the Suisun Marsh components in collaboration with the Suisun Resource Conservation District and Central Valley Joint Venture.

IPCC Expert Meeting on Scoping Additional Guidance on Wetlands, Geneva, Switzerland, Invited Participant. The IPCC Task Force on National Greenhouse Gas Inventories invited Dr. Siegel and about 35 other scientists from around the world to assist them in preparing the Work Plan for inventorying global wetlands carbon storage, filling a gap in the IPCC 2006 Guidelines for National Greenhouse Gas Inventories. 2011.

Resilient Shorelines Wetland Restoration Project Design: Sears Point, Aramburu Island, Sonoma Creek. One strategy to yield resilient shorelines with sea level rise is the "horizontal levee" – a gently sloping ecological transition from tidal wetlands to uplands. Shoreline erosion is reduced, levee heights are reduced, and ecological functions are enhanced. Dr. Siegel lead the design of the first three such projects in the San Francisco Estuary: Aramburu Island, constructed in 2011 and 2012, and Sonoma Creek and Sears Point, being constructed in 2015.

Science Advisor for the Suisun Marsh Plan, a 30-year habitat management and conservation plan prepared by the Bureau of Reclamation, USFWS, NMFS, DWR, DFG, CALFED, and Suisun Resource Conservation District. As the Science Advisor, Dr. Siegel guided agency staff development of numerous conceptual models; led preparation of the tidal marsh and aquatic ecosystems conceptual model; formed and chaired the Science and Technical Advisory Panel (members from University of California at Davis, University of California at Davis, U.S. Geological Survey, and private sector); and review plan development and environmental impact assessment for effective integration of science into planning process. 2005-2010.
http://www.delta.dfg.ca.gov/suisunmarsh/charter/smip.asp

Wetlands Project Manager and Restoration Scientist for the Carbon Capture Wetland Farm. DWR and USGS constructed a 15-acre pilot wetland on Twitchell Island in the California Delta in 1997 to study the effectiveness of utilizing diked, managed wetlands to reverse subsidence and sequester carbon through wetland plant biomass accretion. Positive results led to planning a 600-acre Demonstration Project to study biogeochemical processes underlying carbon sequestration as a climate change mitigation measure; supporting development of wetland carbon sequestration protocols for trading carbon credits on carbon exchange markets; and developing design, regulatory compliance, and operations and maintenance templates for future large-scale implementation. Dr. Siegel led wetland engineering design, oversaw regulatory compliance, and collaborated with developing an applied research program. 2008. Project halted by 2008 bond freeze. http://ca.water.usgs.gov/Carbon_Farm/

Lead Ecosystem Restoration Scientist for the Delta Vision Blue Ribbon Task Force. Established by Executive Order of Governor Arnold Schwarzenegger in 2006, the Delta Vision Blue Ribbon Task Force developed a *Vision for the California Delta* and a *Strategic Plan* to set the stage for moving forward to resolve the decades-long conflict between water supply and ecosystem function in the Sacramento-San Joaquin Delta. Delta Vision recommended a mixture of very large scale ecosystem restoration, reconfiguration of the State and federal water conveyance system through the Delta, increased water supply for the ecosystem, and alleviation of a wide range of ecosystem stressors. Dr. Siegel served

as the Ecosystem Work Group Technical Lead. The group comprised more than 20 representatives of resource agencies, water suppliers, and non-governmental organizations and produced materials incorporated into the 2008 *Strategic Plan* and 2009 Delta Reform legislation. 2007-2008. http://deltavision.ca.gov/

Co-lead scientist, CALFED Delta Regional Ecosystem Restoration Implementation Plan (DRERIP). DRERIP consisted of developing a comprehensive scientific methodology to review the efficacy of proposed ecosystem restoration activities for the Delta, make recommendations on implementation suitability, and prioritize restoration efforts. The foundations for this methodology were a broad suite of conceptual models and an evaluation tool that applied these conceptual models. DRERIP was designed originally for reviewing the 2,400+ individuals restoration actions contained in the CALFED Record of Decision. As one of three science co-leads, Dr. Siegel guided preparation of several conceptual models authored by science teams from academia, government, and the private sector. The science co-leads also sat on the DRERIP Adaptive Management Planning Team that provided policy direction for the program. 2002-2008. http://www.delta.dfg.ca.gov/erpdeltaplan/default.asp

REPRESENTATIVE PROJECT EXPERIENCES

Integrated Climate Change and Restoration Projects: Aramburu Island, Sears Point, Sonoma Creek, Rush Ranch, Twitchell Island, Peters Pocket, Corte Madera Ecological Reserve

Climate Change Projects: Delta Rice Conversion, Wetlands Greenhouse Gas Road Map, Climate Ready Estuaries, Climate Adaptation Decision Support, IPCC Global Wetlands Inventory Workplan

Ecological Restoration Projects: Blacklock Marsh, Chelsea Marsh, Color Spot Marsh, Deer Creek, Pilarcitos Lagoon, Lower Tubbs Marsh, Montezuma Wetlands, North Parcel Wetlands, Prospect Island Wetlands, San Carlos Airport Wetlands, Spinnaker Lagoon, Triangle Marsh, Laguna Creek Lagoon

Regional Planning and Policy Projects: Suisun Marsh Plan Science Advisor, Suisun Marsh Conservation Strategy, Delta Vision Ecosystem Workgroup, Delta Plan Ecosystem White Paper, South Bay Salt Pond Restoration Feasibility, Wetland Inventories, Delta Ecosystem Restoration Implementation Plan (DRERIP)

Applied Science Projects: Integrated Regional Wetland Monitoring Pilot Project, Suisun Low Dissolved Oxygen/Methylmercury, Petaluma River Marsh Restoration

REVIEWS, Refereed Journals

San Francisco Estuary and Watershed Science

Wetlands

REVIEWS, Research Grant Applications

CALFED Bay-Delta Program Science Program. Scientific Research Proposal Solicitation, 2006.

GRADUATE STUDENT ADVISING

Committee member for Mary Snow, Master's student with Dr. Leonard Sklar, Geosciences Department, San Francisco State University, San Francisco, California, USA. 2006. http://funnel.sfsu.edu/faculty/sklar/

PROFESSIONAL MEMBERSHIPS

American Geophysical Union

Coastal Education and Research Federation

Estuarine Research Federation

Society for Ecological Restoration

Society of Wetland Scientists

MANAGEMENT EXPERIENCE

Through 19 years as founder and owner of Wetlands and Water Resources and Siegel Environmental, and through another four years as a senior scientist at Levine-Fricke, I have developed a wide range of expertise in project management, in managing collaboration teams, personnel, and subcontractors, and in developing and applying quality assurance and quality control programs. Projects range from $5,000 to $13 million. WWR annual revenue reached $2 million.

COMMUNITY ACTIVITIES

Youth Perspectives on Climate Change, San Francisco State of the Estuary Conference, September 2015. Developed and organized this Plenary session element.

LEAD Project Volunteer Support, Marin School of Environmental Leadership. High school program at Terra Linda High School. 2014-2015 and 2015-2016 school years.

See *Presentations* above

See *Expert Panels and Committees* above

Technical support to non-profit environmental organizations

Member, planning committee for CALFED Science Program November 2009 workshop, "*Ecosystem Restoration at the Landscape Scale: the Delta and Suisun Marsh*"

TECHNICAL SKILLS

Autonomous and operated field instrument systems development and deployment including physical and water quality parameters; topographic surveying with optical and laser levels and Global Positioning System (GPS) receivers; data management; statistical analysis; Windows and Apple computer systems; U.S. Coast Guard Auxiliary small boat operator; UC Berkeley-certified scientific SCUBA diver.

Stuart Siegel

From: John Sweeney <john@spinnerisland.com>
Sent: Wednesday, May 13, 2015 5:47 AM
To: Stuart Siegel
Subject: Suisun Tidal Restoration Map
Attachments: image1.JPG; ATT00001.txt

Stuart

As you know I own a number of clubs in Suisun Marsh. A map your firm created and has continually used in agency planning and presentations falsely depicts several of my properties as restored tidal wetlands. The map has been used by many agencies as fact. This has caused a lot of confusion. I have requested all agencies remove this map from their websites and planning docs and most have in the last month.

While I know your work in the Marsh is well documented. Can you please explain why you have knowingly used this map and promoted it as factual when only two properties are actually either restored (blacklock) or in planning (San Souci Wildlands). Ryer, Taylor, Mastelottos and Murphy have never been tidally completed restorations. No permits have been granted for any of these properties to be changed from a managed wetland to tidal restoration site and all have valid club plans certified by BCDC stating they are managed wetlands. As you know BCDC every 5 years can with notice change a clubs designation. To date this has never occurred.

As you may also know I have your emails between Steve Chappell, BCDC and other agencies regarding my properties. In an effort to clear the record I wanted to give you an opportunity to explain why this map was created. Why it's still be referenced by your firm as fact and why you haven't alerted agencies to its incorrectness after discovering it's use.

I trust that you can see the issues it has caused and I would hope you can clarify your position on why it's still in circulation.

Second after reading your emails I had to ask have you ever been on Annie Mason/Buckler or are you simply looking at Google earth? Your expert opinion I would assume requires you to physically view and walk a site to accurately document your findings especially in a potential litigation matter?

John D. Sweeney
(415)686-0907

Stuart Siegel

From: Stuart Siegel
Sent: Wednesday, May 13, 2015 10:25 PM
To: 'John Sweeney'
Cc: Ben Wells (bwells@environmentalrg.com)
Subject: RE: Suisun Tidal Restoration Map

John,

I really appreciate you contacting me directly and I'm glad to have the opportunity to provide some background on the past work I've done on this matter.

Broadly speaking, there are two kinds of "tidal restoration" that have taken place in the Bay, Suisun and Delta on diked lands where elevations are at or below high tide levels. One type are the intentional restoration projects, in which land owners designed restoration actions, obtained regulatory authorizations, and constructed the restoration project including breaching levees. Blacklock in northeast Suisun is an example. The second type are the unintended or "natural" restorations, where levees failed either gradually or catastrophically with a resulting introduction of tidal influence and land owners opted not to repair them or gave up after unsuccessful repair efforts. There are perhaps 20 or so of this second type around the bay-delta. As no entity planned or carried out these natural restorations, no permits were ever sought or issued. Club 901 (San Souci) in Suisun is an example. The Delta has several well known and studied natural restorations (e.g., Franks Tract, Big Break, Sherman Lake, Liberty Island).

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Based on the SFEI EcoAtlas, air photo review, boating around the property, and checking with the Suisun Resource Conservation District (SRCD) for knowledge of BCDC and Corps of Engineers restoration permit issuance (SRCD knew of none), we mapped the property, along with others, as "natural restoration".

I hope you find this background information helpful.

Yours,
Stuart

-----Original Message-----
From: John Sweeney [mailto:john@spinnerisland.com]
Sent: Wednesday, May 13, 2015 5:47 AM

Siegel Response to Sweeney Email 1 of 5_2015-0513

To: Stuart Siegel
Subject: Suisun Tidal Restoration Map

Stuart

As you know I own a number of clubs in Suisun Marsh. A map your firm created and has continually used in agency planning and presentations falsely depicts several of my properties as restored tidal wetlands. The map has been used by many agencies as fact. This has caused a lot of confusion. I have requested all agencies remove this map from their websites and planning docs and most have in the last month.

While I know your work in the Marsh is well documented. Can you please explain why you have knowingly used this map and promoted it as factual when only two properties are actually either restored (blacklock) or in planning (San Souci Wildlands). Ryer, Taylor, Mastelottos and Murphy have never been tidally completed restorations. No permits have been granted for any of these properties to be changed from a managed wetland to tidal restoration site and all have valid club plans certified by BCDC stating they are managed wetlands. As you know BCDC every 5 years can with notice change a clubs designation. To date this has never occurred.

As you may also know I have your emails between Steve Chappell, BCDC and other agencies regarding my properties. In an effort to clear the record I wanted to give you an opportunity to explain why this map was created. Why it's still be referenced by your firm as fact and why you haven't alerted agencies to its incorrectness after discovering it's use.

I trust that you can see the issues it has caused and I would hope you can clarify your position on why it's still in circulation.

Second after reading your emails I had to ask have you ever been on Annie Mason/Buckler or are you simply looking at Google earth? Your expert opinion I would assume requires you to physically view and walk a site to accurately document your findings especially in a potential litigation matter?

John D. Sweeney
(415)686-0907

Stuart Siegel

From: John Sweeney <john@spinnerisland.com>
Sent: Thursday, May 14, 2015 8:37 AM
To: Stuart Siegel
Cc: Ben Wells (bwells@environmentalrg.com)
Subject: Re: Suisun Tidal Restoration Map

Stuart

Thanks for your response. As you may know in 2004 a new owner bought Buckler to add to their hunting clubs. The family also owned Nine Lands near concord farms. They actively hunted the property until 2011 when the owner passed away.

No ones arguing the different levee maintenance issues over the years. When the club plan was certified in 1984 the property was lacking water control too as it states. If you haven't read the club plan and its recommended levee and flood gate plans and recommendations it's spot on. Simply put the family who bought it in 2004 was never aware of any change in managed wetland status nor was I when I purchased it. I also spoke to Jim Taylor who owned and hunted it until 2003 he has never heard of this either he bought it in 1972.

I hired an expert to walk the property with me to evaluate flood gates which there were three and review all the levees and ditches at purchase. The three small inlets to ponds had wood riser boards to trap water in. I simply drove my excavator around old levees and used the inside dredger ditch to rebuild the small levee system. As they sit today they are 3 feet in elevation. They are not there to keep water out but keep it in. The pump DWR put there in 92 is still on site. Jim Taylor rebuilt the entire levee system in 1992 as shown by SRCD permits. New flood gates and upon completion he received a diesel powered pump to help flood up island from DWR. It's elevation makes it impossible to hold water all winter without it. As maybe only you can understand you cannot drive an excavator across a tidal wetland. Buckler is high and dry.

I've hunted an managed the property since I bought it in 2011. The assertion that the property stopped being managed is completely false. The levee system may not have always been like the days when Seeno owned it but that has no bearing on if it was still hunted and the water managed. It might have been managed poorly but managed never the less.

Assuming it has always been managed my work is exactly as the club plan suggests. As a new buyer of any property the only thing that goes with each club and carries on to the new owner is the most current club plan. Maybe someone intended on contacting the two previous owners but no one ever has. Nothing's recorded or written in any file stating the clubs status was changed. I can assure you neither myself or the family before would by a duck club that couldn't be managed. Nor would I risk all this hassle when I have plenty of clubs.

So that's the simple issue did someone stop managing water. I have letters from both previous owners stating they hunted and managed the property. As the club plan shown the levees historically have been hard to maintain. A property does not simply lose its managed status due to a levee failure. Maybe in San Souci case since the property is such a low elevation. There is no aerial photo showing any water on buckler. At least since Google earth. The 1948, 1958 and 1972 usgs shows ponds full and same levees.

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If you looked at my work under the club plan guidelines and under the best practices for waterfowl hunting stated by yourself and SRCD the club is now fully restored as per your guidelines. Actually I've read several of your studies which shows how to circulate and best management practices. My father in law Mike Frost can attest to the quality and practices I used in restoring buckler as he explained to me how to do it. I don't think many would argue aside from you he's the most knowledgeable person in the marsh on all things levee and flood gate based.

In any event the entire thing seems to be blown way out of proportion and I simply want to resolve it. Again I wouldn't have bought a property that was not manageable for hunting. Could you state with 100 percent certainty having never been on the island that it stopped being managed? I'm not talking about levees but water management for duck hunting? The island can retain water with flood gates and the many riser boards on each small pond inlet. Would you argue the past owners are lying ? I doubt anyone ever knew accept you and SRCD this tidal idea existed.

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Stuart Siegel

From: Stuart Siegel
Sent: Thursday, May 14, 2015 1:52 PM
To: John Sweeney
Cc: Ben Wells (bwells@environmentalrg.com)
Subject: Re: Suisun Tidal Restoration Map

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As I presented in my work proposal to Ben, I am able to develop a more rigorous historical hydrologic and geomorphic characterization for you. It has its limitations of available air photo timing and resolution but can be very informative. BCDC will accept my work whatever its findings are. Overlaying management history resides with you and information you gather from prior owners.

Thanks
Stuart

Stuart Siegel
Siegel Environmental LLC
stuart@swampthing.org
www.swampthing.org
415.299.8746 office
415.823.3746 cell
Sent from mobile

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Siegel Response to Sweeney Email 2 of 5_2015-0514

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Stuart Siegel

From: john sweeney <john@spinnerisland.com>
Sent: Thursday, May 14, 2015 3:44 PM
To: Stuart Siegel
Subject: Re: Suisun Tidal Restoration Map

Stuart

You are in a very sticky situation actually because of Steve Chappell. Now you have caused BCDC to come after me as their expert claiming my Islands are no longer managed wetlands (via powerpoints and other presentations you prepared) . If I do receive a fine or for some crazy reason are required to mitigate I will simply come after you and Steve individually with the full force of my legal team to recover every dime of my legal and whatever BCDC fines throws at me. Your map which caused all of this is factually incorrect or at the very least misleading. While there may be many reasons behind it is simply is wrong and its still being used by many agencies to evaluate my properties. It's affecting the sales price of Chipps Island which is in escrow now and those partners are already looking at the damage aspect of it on that property at this very moment. Its affecting my partners in Buckler who want to hunt and have money sitting in escrow waiting on a bcdc resolution. Both have significant possibilities for damages to be recovered which are based on your expert opinion.

My suggestions is you clarify in writing to BCDC and copy me that your map was not based on any knowledge of club management and simply documented general observations none taken on land and with no owners input or knowledge. You could not know if the island was managed or not. And by no means could you accurately know tidal conditions without an onsite survey or topo on any property. Unless you feel you can prove it wasn't managed I think this is your only option to avoid me getting all your map partners together and letting my lawyers have at them.

While a levee may break that certainly does not mean an entire island goes tidal nor does it lose its managed status. We rent Chipps Island both sides to the Pittsburg Police dept for hunting. It's got a nice levee break but is easily managed to dam ponds and dike wetlands. The same one you claim is a restored tidal wetland. Its more accurately a partially muted tidal managed wetland.

I think you can get out of this by clarifying your map was not to be used to define managed wetlands and that in your expert opinion you have no idea if Point Buckler or Chipps was or wasn't managed nor could you provide any guess. It's currently managed extremely well by the way.

I have written letters from the past owners and will present them to BCDC which clearly show its always been hunted and managed. So the ball is in your court. I suggest you think wisely about how to proceed and realize you are in the middle of this and will not escape without damaged unless you fix the mess you helped to create. If I have to hire expensive consultants to prove your claims wrong via BCDC it will still come back to me and you in court.

So as you said this is a highly dangerous situation one that if not addressed ASAP will mean your name and reputation will be put on the line. At this point Steve has done enough damage to my name I don't care who I take down next. My guess is you have better things to do that spend a year or two in court.

I have great respect and love for the marsh thats why I own several thousand acres of it. Steve's personal issues have clouded his judgement and caused good people to get dragged into this for no reason. BCDC sure doesnt want to deal with it and now its thrown in your lap. Unless Steve is covering your legal bills it seems like a very bad deal for you.

John

On May 14, 2015, at 1:51 PM, Stuart Siegel wrote:

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>> If you looked at my work under the club plan guidelines and under the best practices for waterfowl hunting stated by yourself and SRCD the club is now fully restored as per your guidelines. Actually I've read several of your studies which shows how to circulate and best management practices. My father in law Mike Frost can attest to the quality and practices I used in restoring buckler as he explained to me how to do it. I don't think many would argue aside from you he's the most knowledgeable person in the marsh on all things levee and flood gate based.
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>> In any event the entire thing seems to be blown way out of proportion and I simply want to resolve it. Again I wouldn't have bought a property that was not manageable for hunting. Could you state with 100 percent certainty having never been on the island that it stopped being managed? I'm not talking about levees but water management for duck hunting? The island can retain water with flood gates and the many riser boards on each small pond inlet. Would you argue the past owners are lying ? I doubt anyone ever knew accept you and SRCD this tidal idea existed.
>>
>> I've managed it since 2011 so maybe what your actually saying is the levee system since the late 90s wasn't well maintained. That's true. But to say no one hunted or managed water is not correct. Why would a family buy it in 2004 who owns clubs and then me in 2011 who owns many clubs?
>>
>> John D. Sweeney
>> (415)686-0907
>>
>> www.PointBucklerIsland.com
>> www.SpinnerIsland.com
>> www.DeltaLandingCraft.com
>>

>>
>>
>>
>>> On May 13, 2015, at 10:24 PM, Stuart Siegel <stuart@swampthing.org> wrote:
>>>
>>> John,
>>>
>>> I really appreciate you contacting me directly and I'm glad to have the opportunity to provide some background on the past work I've done on this matter.
>>>
>>> Broadly speaking, there are two kinds of "tidal restoration" that have taken place in the Bay, Suisun and Delta on diked lands where elevations are at or below high tide levels. One type are the intentional restoration projects, in which land owners designed restoration actions, obtained regulatory authorizations, and constructed the restoration project including breaching levees. Blacklock in northeast Suisun is an example. The second type are the unintended or "natural" restorations, where levees failed either gradually or catastrophically with a resulting introduction of tidal influence and land owners opted not to repair them or gave up after unsuccessful repair efforts. There are perhaps 20 or so of this second type around the bay-delta. As no entity planned or carried out these natural restorations, no permits were ever sought or issued. Club 901 (San Souci) in Suisun is an example. The Delta has several well known and studied natural restorations (e.g., Franks Tract, Big Break, Sherman Lake, Liberty Island).
>>>
>>> The past mapping work I've done has always been centered around understanding ecological conditions and effects of tidal restoration, in the context of science support to public policy and planning efforts. That work was never regulatory in nature.
>>>
>>> The Suisun work started back in 2003 with a research project funded by CALFED to look at restoration effects on bay ecology. For that effort, we identified all the tidal wetland sites from San Pablo Bay to the Delta, to consider as possible study sites. To locate all tidal wetlands in San Pablo Bay and Suisun Marsh, we started with the 1998 first public version of the EcoAtlas (http://ecoatlas.org/), completed by the San Francisco Estuary Institute (SFEI), that mapped all "baylands" up to the western edge of the Delta. Any property identified in the EcoAtlas as tidal marsh we cross-checked with recent air photos to validate or reject the EcoAtlas designation. (All that work preceded Google Earth.) Club 801 (known variously as Taylor, Pt. Buckler and Andy Mason) was mapped in the EcoAtlas as "fully tidal bayland, high elevation tidal marsh" and the air photo review validated this designation. We boated around the property in May 2003, along with four other nearby tidally restored properties, to see if our research group was interested in pursuing landowner permission to carry out studies on it (the group opted for other properties).
>>>
>>> Based on the SFEI EcoAtlas, air photo review, boating around the property, and checking with the Suisun Resource Conservation District (SRCD) for knowledge of BCDC and Corps of Engineers restoration permit issuance (SRCD knew of none), we mapped the property, along with others, as "natural restoration".
>>>
>>> I hope you find this background information helpful.
>>>
>>> Yours,
>>> Stuart
>>>
>>> -----Original Message-----
>>> From: John Sweeney [mailto:john@spinnerisland.com]
>>> Sent: Wednesday, May 13, 2015 5:47 AM
>>> To: Stuart Siegel
>>> Subject: Suisun Tidal Restoration Map
>>>
>>> Stuart
>>>

Sweeney Email to Siegel 3 of 5_2015-0514

>>> As you know I own a number of clubs in Suisun Marsh. A map your firm created and has continually used in agency planning and presentations falsely depicts several of my properties as restored tidal wetlands. The map has been used by many agencies as fact. This has caused a lot of confusion. I have requested all agencies remove this map from their websites and planning docs and most have in the last month.
>>>
>>> While I know your work in the Marsh is well documented. Can you please explain why you have knowingly used this map and promoted it as factual when only two properties are actually either restored (blacklock) or in planning (San Souci Wildlands). Ryer, Taylor, Mastelottos and Murphy have never been tidally completed restorations. No permits have been granted for any of these properties to be changed from a managed wetland to tidal restoration site and all have valid club plans certified by BCDC stating they are managed wetlands. As you know BCDC every 5 years can with notice change a clubs designation. To date this has never occurred.
>>>
>>> As you may also know I have your emails between Steve Chappell, BCDC and other agencies regarding my properties. In an effort to clear the record I wanted to give you an opportunity to explain why this map was created. Why it's still be referenced by your firm as fact and why you haven't alerted agencies to its incorrectness after discovering it's use.
>>>
>>> I trust that you can see the issues it has caused and I would hope you can clarify your position on why it's still in circulation.
>>>
>>> Second after reading your emails I had to ask have you ever been on Annie Mason/Buckler or are you simply looking at Google earth? Your expert opinion I would assume requires you to physically view and walk a site to accurately document your findings especially in a potential litigation matter?
>>>
>>> John D. Sweeney
>>> (415)686-0907
>>>
>>>
>

Stuart Siegel

From: Stuart Siegel
Sent: Thursday, May 14, 2015 4:31 PM
To: john sweeney
Subject: Re: Suisun Tidal Restoration Map

John,

I am happy to help you out by conducting technical analysis. All the work I've conducted to date is straightforward compilation of existing external publicly available information, without any interpretive effort applied, following industry standard methods. I understand you are not happy and I hope that the additional information you can bring to bear will aid you in your discussions with the regulatory agencies.

Yours,
Stuart

Stuart Siegel
Siegel Environmental LLC
stuart@swampthing.org
www.swampthing.org
415.299.8746 office
415.823.3746 cell
Sent from mobile

> On May 14, 2015, at 5:44 PM, john sweeney <john@spinnerisland.com> wrote:
>
> Stuart
>
> You are in a very sticky situation actually because of Steve Chappell. Now you have caused BCDC to come after me as their expert claiming my Islands are no longer managed wetlands (via powerpoints and other presentations you prepared) . If I do receive a fine or for some crazy reason are required to mitigate I will simply come after you and Steve individually with the full force of my legal team to recover every dime of my legal and whatever BCDC fines throws at me. Your map which caused all of this is factually incorrect or at the very least misleading. While there may be many reasons behind it is simply is wrong and its still being used by many agencies to evaluate my properties. It's affecting the sales price of Chipps Island which is in escrow now and those partners are already looking at the damage aspect of it on that property at this very moment. Its affecting my partners in Buckler who want to hunt and have money sitting in escrow waiting on a bcdc resolution. Both have significant possibilities for damages to be recovered which are based on your expert opinion.
>
> My suggestions is you clarify in writing to BCDC and copy me that your map was not based on any knowledge of club management and simply documented general observations none taken on land and with no owners input or knowledge. You could not know if the island was managed or not. And by no means could you accurately know tidal conditions without an onsite survey or topo on any property. Unless you feel you can prove it wasn't managed I think this is your only option to avoid me getting all your map partners together and letting my lawyers have at them.
>
> While a levee may break that certainly does not mean an entire island goes tidal nor does it lose its managed status. We rent Chipps Island both sides to the Pittsburg Police dept for hunting. It's got a nice levee break but is easily managed to dam ponds and dike wetlands. The same one you claim is a restored tidal wetland. Its more accurately a partially muted tidal managed wetland.

>
> I think you can get out of this by clarifying your map was not to be used to define managed wetlands and that in your expert opinion you have no idea if Point Buckler or Chipps was or wasn't managed nor could you provide any guess. It's currently managed extremely well by the way.
>
> I have written letters from the past owners and will present them to BCDC which clearly show its always been hunted and managed. So the ball is in your court. I suggest you think wisely about how to proceed and realize you are in the middle of this and will not escape without damaged unless you fix the mess you helped to create. If I have to hire expensive consultants to prove your claims wrong via BCDC it will still come back to me and you in court.
>
> So as you said this is a highly dangerous situation one that if not addressed ASAP will mean your name and reputation will be put on the line. At this point Steve has done enough damage to my name I don't care who I take down next. My guess is you have better things to do that spend a year or two in court.
>
> I have great respect and love for the marsh thats why I own several thousand acres of it. Steve's personal issues have clouded his judgement and caused good people to get dragged into this for no reason. BCDC sure doesnt want to deal with it and now its thrown in your lap. Unless Steve is covering your legal bills it seems like a very bad deal for you.
>
>
> John
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>
>> On May 14, 2015, at 1:51 PM, Stuart Siegel wrote:
>>
>> John
>>
>> It is not my position to make judgements on what levels of management or lack thereof took place or not. All I can do is describe the hydrology and geomorphology of the property at various points in time relative to industry standard methods. The ball resides in your court to present information about management to the regulatory agencies and negotiate their implications. My former GIS staff, Jake Schweitzer, developed maps at my direction following methods I described in my email last night. The fact that we did not make the determination but used that developed by SFEI that we reviewed from air photos and a boat visit plays large.
>>
>> As I presented in my work proposal to Ben, I am able to develop a more rigorous historical hydrologic and geomorphic characterization for you. It has its limitations of available air photo timing and resolution but can be very informative. BCDC will accept my work whatever its findings are. Overlaying management history resides with you and information you gather from prior owners.
>>
>> Thanks
>> Stuart
>>
>> Stuart Siegel
>> Siegel Environmental LLC
>> stuart@swampthing.org
>> www.swampthing.org

>> 415.299.8746 office
>> 415.823.3746 cell
>> Sent from mobile
>>
>>> On May 14, 2015, at 10:36 AM, John Sweeney <john@spinnerisland.com> wrote:
>>>
>>> Stuart
>>>
>>> Thanks for your response. As you may know in 2004 a new owner bought Buckler to add to their hunting clubs. The family also owned Nine Lands near concord farms. They actively hunted the property until 2011 when the owner passed away.
>>>
>>> No ones arguing the different levee maintenance issues over the years. When the club plan was certified in 1984 the property was lacking water control too as it states. If you haven't read the club plan and its recommended levee and flood gate plans and recommendations it's spot on. Simply put the family who bought it in 2004 was never aware of any change in managed wetland status nor was I when I purchased it. I also spoke to Jim Taylor who owned and hunted it until 2003 he has never heard of this either he bought it in 1972.
>>>
>>> I hired an expert to walk the property with me to evaluate flood gates which there were three and review all the levees and ditches at purchase. The three small inlets to ponds had wood riser boards to trap water in. I simply drove my excavator around old levees and used the inside dredger ditch to rebuild the small levee system. As they sit today they are 3 feet in elevation. They are not there to keep water out but keep it in. The pump DWR put there in 92 is still on site. Jim Taylor rebuilt the entire levee system in 1992 as shown by SRCD permits. New flood gates and upon completion he received a diesel powered pump to help flood up island from DWR. It's elevation makes it impossible to hold water all winter without it. As maybe only you can understand you cannot drive an excavator across a tidal wetland. Buckler is high and dry.
>>>
>>> I've hunted an managed the property since I bought it in 2011. The assertion that the property stopped being managed is completely false. The levee system may not have always been like the days when Seeno owned it but that has no bearing on if it was still hunted and the water managed. It might have been managed poorly but managed never the less.
>>>
>>> Assuming it has always been managed my work is exactly as the club plan suggests. As a new buyer of any property the only thing that goes with each club and carries on to the new owner is the most current club plan. Maybe someone intended on contacting the two previous owners but no one ever has. Nothing's recorded or written in any file stating the clubs status was changed. I can assure you neither myself or the family before would by a duck club that couldn't be managed. Nor would I risk all this hassle when I have plenty of clubs.
>>>
>>> So that's the simple issue did someone stop managing water. I have letters from both previous owners stating they hunted and managed the property. As the club plan shown the levees historically have been hard to maintain. A property does not simply lose its managed status due to a levee failure. Maybe in San Souci case since the property is such a low elevation. There is no aerial photo showing any water on buckler. At least since Google earth. The 1948, 1958 and 1972 usgs shows ponds full and same levees.
>>>
>>> I think your map created an idea I destroyed a restored tidal wetland. At least that's what Steve stated in his emails and several BCDC folks. Maybe if someone had called owners and asked them or written them they would know it was still being managed. It's a unique place as all my other clubs need levees to not flood. This one just needs then to have excellent water retention.
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practices I used in restoring buckler as he explained to me how to do it. I don't think many would argue aside from you he's the most knowledgeable person in the marsh on all things levee and flood gate based.
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>>>> John,
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along with four other nearby tidally restored properties, to see if our research group was interested in pursuing landowner permission to carry out studies on it (the group opted for other properties).
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>>>>
>>>> I hope you find this background information helpful.
>>>>
>>>> Yours,
>>>> Stuart
>>>>
>>>> -----Original Message-----
>>>> From: John Sweeney [mailto:john@spinnerisland.com]
>>>> Sent: Wednesday, May 13, 2015 5:47 AM
>>>> To: Stuart Siegel
>>>> Subject: Suisun Tidal Restoration Map
>>>>
>>>> Stuart
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>>>> As you know I own a number of clubs in Suisun Marsh. A map your firm created and has continually used in agency planning and presentations falsely depicts several of my properties as restored tidal wetlands. The map has been used by many agencies as fact. This has caused a lot of confusion. I have requested all agencies remove this map from their websites and planning docs and most have in the last month.
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>>>> I trust that you can see the issues it has caused and I would hope you can clarify your position on why it's still in circulation.
>>>>
>>>> Second after reading your emails I had to ask have you ever been on Annie Mason/Buckler or are you simply looking at Google earth? Your expert opinion I would assume requires you to physically view and walk a site to accurately document your findings especially in a potential litigation matter?
>>>>
>>>> John D. Sweeney
>>>> (415)686-0907
>

Stuart Siegel

From: john sweeney <john@spinnerisland.com>
Sent: Friday, May 15, 2015 8:18 AM
To: Stuart Siegel
Cc: bwells@environmentalrg.com
Subject: Map clarification
Attachments: 1958.tiff

Stuart

I want to make absolutely sure I understand your position on the map titled Suisun Tidal Restoration Sites produced by you.

-The map states that Club 801 was a complete and constructed tidal restoration project in your 2004, 2011 and 2014 version which you published via a Calfed grant originally

- Based on the Eco Atlas and SFEI 1999 you used aerial photos of club 801 to in essence do a limited aerial comparison pre google earth.

- No onsite monitoring, scientific or otherwise was conducted at any point on club 801 for your map (topo, levee contour, channel measurements etc)

- No onsite inspection of flood gates, levees, ditches , culverts or ponds were conducted or any water management practices observed or reported at any time.

- A short boat trip around the island with limited aerial photos (pre google earth) created your opinion which was not to be used as a scientific or expert claim of the properties actual site conditions.

- The map was not a regulatory map nor was it intended to be used to change a properties zoning or regulatory agencies definition of properties use since it featured no scientific or onsite specific analysis.

- At no time did you or your staff interview or contact current of previous owners of club 801 for any version of your map to find out water management practices used on club 801. Past and present owners include Seeno, Hewtson, Taylor, Torres and Sweeney. The club sold in 2004 and again in 2011.

- The map versions 2004, 2011, 2014 still shows club 801 as constructed and completed tidal restoration site. Is this an error or do you still consider this a constructed tidal restoration site? and if so what does that mean?

- Have you personally any knowledge of the actual water management practices conducted in the last 30 years on club 801in regards to waterfowl hunting?

- Did you tell BCDC that club 801 has not been a managed wetland in the last 20-30 years based on your research?

- Did you review the club plan for club 801 prior to publishing map in 2004.

Based on all this is there any way you would claim to know club 801's management practices historically or otherwise?

Thats really what I need to know.

John

Seeno 1958 Buckler

Stuart Siegel

From: Stuart Siegel
Sent: Friday, May 15, 2015 12:43 PM
To: 'john sweeney'
Cc: bwells@environmentalrg.com
Subject: RE: Map clarification

John,

I would have to say that you have not interpreted my information correctly in its entirety and, as I have not engaged in property-level research about management history and related state and federal jurisdictional status and regulatory obligations on your property, my suggestion is you consult your environmental attorneys about those matters. SFEI in its EcoAtlas determined whether a wetland is diked or tidal by the nature of the hydrologic connections between the wetland and the surrounding tidal waters. As I mentioned, there are about 20 properties around the bay-delta that were diked in the past and that subsequently have had one or more direct tidal connections form due to natural events and that remained tidally connected over time ("natural restorations" on the maps I made). I have not looked into whether your property had water control structures, but in 2003 I did confirm the SFEI determination of direct tidal connection via air photos and boating around the property. Because our research team did not want to consider Club 801 as a prospective study site after boating around it, no further research into its conditions took place.

Stuart

From: john sweeney [mailto:john@spinnerisland.com]
Sent: Friday, May 15, 2015 8:18 AM
To: Stuart Siegel
Cc: bwells@environmentalrg.com
Subject: Map clarification

Stuart

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Thats really what I need to know.

John

Seeno 1958 Buckler

Stuart Siegel

From: john sweeney <john@spinnerisland.com>
Sent: Thursday, June 18, 2015 11:30 AM
To: Stuart Siegel
Subject: SFEI and Lawsuit against Stuart Siegel

Dear Stuart

After several weeks of work with several agencies I have finally uncovered truth in regard to the Dr Siegel maps. While I have little doubt you made some general observations via aerial photos for your work, aside from that there was no science involved. None.

I have worked with SFEI or EcoAtlas for last three weeks and have now received a letter from them stating you are the sole data source for their maps which depict my two properties as "Constructed and restored tidal wetlands". They have removed your data and apologized. This means that while you reference their maps as your source, they in turn have proven you were the source for their maps. So now the legal target is squarely on your back. In fact every agency said you provided them with their marsh maps which they use today as fact.

As you mentioned in an email CC to me by accident this is a very dangerous situation. It in fact is now fully about to take on a life of its own. By now most agencies should have a letter from SFEI regarding their findings. Its less than flattering for a man who claims to be the most respected of all marsh consultants. Not only have you lied about your mapping sources you have caused damage to many property owners without their knowledge. Chipps Island resale attempts have been hammered by this map falsely depicting half our property as "constructed tidal restoration site". Same with Point Buckler but now you have caused BCDC to take a stance based on your expert opinion to try and strip my property of its managed wetland status.

So now that I have the facts, letters from agencies and testimonials from your fellow map cohorts and I will offer you a simple remedy before you will be exposed and sued.

First you must write a letter to every agency you have ever given that map to and show them a revised map with both Chipps Island and Point Buckler and Managed Wetlands. No different than all Suisun Marsh Clubs. In that letter you must admit your error, that you have no data to back up the previous claims and that you apologize for the damage it may have caused the owners of both properties and the agencies. In that letter it must make 100% clear neither property is restored, tidal or constructed and both are today managed wetlands. Every group you have ever sold or given that map to must get this letter asap.
Army Corp
BCDC
State Lands
DWR
CFG
SRCD
etc

You then must send an email or letter to BCDC to tell them that in your expert opinion both Chipps and Buckler are managed wetlands and any claim that they are no longer managed wetlands be dropped. BCDC already has your letter and SFEI letter. Any damages from BCDC will simply be applied to the lawsuit I will file against you. So fix it now or pay later your choice. You said BCDC will do whatever you say so lets see if this is true.

Sweeney Email to Siegel 5 of 5_2015-0618

Lastly you have caused me damages. On may levels with several partnership groups. To date we have spent over $150,000 on legal fees and consultants associated with your fake maps. We have lost deals on Chipps because certain agencies in writing have referred to your map as fact and referenced you. I cannot estimate those damages but Im sure a judge can fairly assess them at trial but they could be millions. I have now amassed a pile of documents and letters which will show without a doubt you blazingly created less than scientific maps and sold them to agencies as factual.

Wilson Wendt from Miller Starr Regalia my law firm will be sending you a formal letter this week to start the legal process. If you feel you want to come to a resolution before we make this a legal matter I will leave it in your court. There are several writers who are also going to do a story on this mess and I have given them all the documents to write as they please.

I gave you an opportunity a month ago to fix this but your large ego got in the way. Giving me a proposal to charge me $400 per hour to fix your mess was very amusing. You have my phone number if I don't hear from you I will see you in a few short weeks n court.

John Sweeney
(415)686-0907 cell

Stuart Siegel

From: Josh Collins <josh@sfei.org>
Sent: Friday, June 19, 2015 12:19 PM
To: Stuart Siegel
Cc: Robin; Cristina Grosso
Subject: Re: Suisun map

Categories: 2-BusDev

I'll try to be brief.

The Baylands classification system of the original EcoAtlas of the 1999 Baylands Goals Project is no longer used.

It recognized many classes or types of Baylands based on variations in hydrology such as those you reference, including diked managed Baylands, diked fallow Baylands, muted tidal marsh, high tidal marsh, low tidal marsh, and many others.

It was useful for the original Baylands Goals Project to understand the full range of types and their relationship to biodiversity, but proved to have more types than the regulatory or management agencies needed to achieve the goals or to track related activities.

The current Ecoatlas is not a database. It aggregates data and information from any number of databases on a variety of standard base maps.

One database it accesses is the statewide California Aquatic Resource Inventory or CARI. That's the map of wetlands and streams and other state waters.

The SOP for CARI includes CARCS, the Ca Aquatic Resource Classification System. Surface waters are classified using CARCS.

The major classes of wetlands in CARCS correspond to the classes of the Ca Rapid Assessment Method (CRAM). This allows CARI to serve as the sample frame for probabilistic surveys of wetland condition using CRAM.

Each wetland class and subclass of CARCS is defined in writing in the CARI SOP and in the CRAM manual. There is a key to the classes. There are crosswalks between CARCS and other prominent classification systems, such Cowardin of NWI and NHD, HGM of USACE, and the Forest Practice Rules. Classification is part of CRAM training. There is also a process of training people to use the CARI SOP. It is often updated and a new version is in production.

There are regional versions of CARCS that add subclasses. For example, the Tahoe version (TARI) includes Stream Environment Zones (SEZs) that no other region has, but obviously lacks any tidal areas. The Delta version (DARI) identifies ditches apart from other riverine types because of their large size and length and prevalence, and there is a CRAM module for assessing these ditches. Versions of CARCS for the outer coast include Bar-Built Estuaries.

The Bay Area version of CARI (BAARI) includes a number of details of tidal marsh such as pannes that other coastal "ARIES" lack. But it does not distinguish between muted and fully tidal marshes, or high marsh from low marsh. It does not contain many if the subtypes of Baylands that were identified in the original 1999 EcoAtlas.

Best

Josh's cell phone

On Jun 19, 2015, at 10:38 AM, Stuart Siegel <stuart@swampthing.org> wrote:

> Hydrology is a major determinant of baylands wetlands types in the estuary. There are tidal marshes, diked marsh (managed and unmanaged, seasonal and perennial), muted tidal marshes (which are hard to nail down relative to tidal or diked depending on which end of the spectrum they sit), and some places for which the hydrology is not necessarily clear. Places like Tule Red in Suisun is an example of ambiguity or "grey" areas relative to determining applicable hydrology.
>
> So my question is what criteria does SFEI use now and in the past for determining hydrology and, from that, assigning wetland type designations?
>
> Thanks
> Stuart
>
> Stuart Siegel
> Siegel Environmental LLC
> stuart@swampthing.org
> www.swampthing.org
> 415.299.8746 office
> 415.823.3746 cell
> Sent from mobile
>
> On Jun 19, 2015, at 5:09 PM, Josh Collins <josh@sfei.org> wrote:
>
>> Grey areas?
>>
>> Josh's cell phone
>>
>> On Jun 19, 2015, at 7:08 AM, Stuart Siegel <stuart@swampthing.org> wrote:
>>
>>> Thanks, Josh.
>>>
>>> Does SFEI have established criteria it uses now and back in early EcoAtlas days for how it makes determinations in the many grey areas around the estuary?
>>>
>>> Stuart
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Hi Stuart

We have been aware of two concerns.

1. *Classification of East Chipps and Pt Buckler as restoration projects.* Mr Sweeney contacted us with a request to reclassify two parcels designated as constructed restoration projects. Our representation of an area as a project is based on documentation provided by one or more regulatory agencies, or by either the Bay Area or Central Valley Joint Ventures that use the system to track projects as defined by them. Staff followed protocol for these two cases by searching the 404/401 database and Joint Venture database to find any and all records of these two areas being designated as projects. No such evidence was found, and no other regularity or other irrefutable evidence of project status has been provided. We have therefore remove these contested areas from project designation. We have no way of knowing for sure where the error in designation originated. There were many sources of these data in the early stages of their compilation and a few errors in designation have been discovered and fixed over the years.

2. *Classifications of these same two areas as tidal marsh.* As part of the process to review project status, staff also review habitat classification. In each of these two cases there are areas classified as tidal that are not, based on our own aerial image interpretation. We are fixing these classification errors. Again, there have been many classification sources over the years and we probably can't be sure of the source of these miss classifications. Also, as the resolution of imagery has increased, the need to differentiate between smaller and smaller areas has also increased. We have been reviewing and reclassification on an as-needed basis. However, we have also developed a new online tool to enable qualified experts to edit the maps themselves, which

we will then periodically review. We hope this helps to improve and maintain the maps.

Thanks for your interest. It takes lots of input from the growing user community to keep these maps current.

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Josh's cell phone

Stuart Siegel

From: Stuart Siegel
Sent: Thursday, June 18, 2015 11:45 AM
To: Josh Collins; Robin Grossinger
Subject: John Sweeney

Josh and Robin,

I am guessing you've heard of John Sweeney by now and his work on Pt Buckler Club 801 in Suisun. His latest rant to me states that SFEI has denied the content of the 1998 EcoAtlas designation of high tidal marsh for his property and asserted it was my doing.

I'm not taking this guy seriously at this stage even though he's threatening legal action. Question for you two for now is whether you have any knowledge of SFEI disavowing itself of the original EcoAtlas work.

Thanks
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Sent from mobile

Stuart Siegel

From: Josh Collins <josh@sfei.org>
Sent: Friday, June 19, 2015 2:48 PM
To: Stuart Siegel
Cc: Robin; Cristina Grosso
Subject: Re: Suisun map

Categories: 2-BusDev

I didn't see the last paragraph of your message until now. I'm on my phone while traveling.

Check out the wetland classes as defined for CRAM. They're based on the relative importance of different direct hydrological sources - rain, riverine flooding, nod runoff, groundwater, tidal flooding. Determination is based on topography, form, spatial relation to drainage systems, etc., as evidenced in aerial imagery, existing maps, etc., with review sessions by local experts, plus field based qaqc as a percentage of the coverage. The data are field checked on an ongoing basis through CRAM assessments. And as I said before there is an online tool that qualified folks can use to recommend changes in boundaries, alignment, shape, classification.

Muted tidal areas are regarded as tidal because the meaningful thresholds of muting very with ecosystem service in ways not conducive to consistent mapping across regions or the state. Diked former tidelands that are wetted with estuarine or marine waters but not on tidal cycles are regarded as nontidal. They're either depressional wetlands or playas friending in vegetative and edaphic factors.

Josh's cell phone

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Tentative Cleanup and Abatement Order

John D. Sweeny and
Point Buckler Club, LLC

Description of Exhibit Provided by Reference
(State Statue)

Exhibit 24

The Suisun Marsh Preservation Act
http://www.bcdc.ca.gov/plans/suisun_marsh_preservation_act.html

Tentative Cleanup and Abatement Order

John D. Sweeny and
Point Buckler Club, LLC

Description of Exhibit Provided by Reference
(Federal Regulations and Policies)

Exhibit 25

25a. NOAA's National Marine Fisheries Service Biological Opinion – Suisun Marsh Long-Term Habitat Management, Preservation, and Restoration Plan, July 3, 2013
http://www.waterboards.ca.gov/sanfranciscobay/water_issues/hot_topics/PointBuckler/references/NOAA_Biological_Opinion.pdf

25b. Department of the Army Permit - Letter of Permission Procedure for the Suisun Marsh Dredging Program, U.S. Army Corp of Engineers, July 3, 2014
http://www.waterboards.ca.gov/sanfranciscobay/water_issues/hot_topics/PointBuckler/references/USACE_LO_%20Dredging_Permit.pdf

Tentative Cleanup and Abatement Order

John D. Sweeny and
Point Buckler Club, LLC

Description of Exhibit Provided by Hard Copy and Electronically
(BCDC)

Exhibit 26

26a. Annie Mason Point Club Individual Management Plan, 1984

26b. Violation Report/Complaint for the Administrative Imposition of Civil Penalties Enforcement Investigation No. ER2012.038, BCDC, May 23, 2016

26a. Annie Mason Point Club Individual Management Plan, 1984

DATA BASE FILE INFO FOR SUISUN MARSH DUCK CLUBS

Annie Mason Point Club

Club No. 801 Acres: W 30 T 15 Hi 6 Total 51

Avg. Elevation N/A

Primary Contact: James Taylor
700 Parker Avenue
Rodeo, CA 94572
(415) 758-2100
(415) 932-8915 (H)

Secondary Contact: None

Others: None

AB2090?	Y	N	1986	1987	1988	1989
			$	$	$	$

DWR Cost-Share? Y N $ Date:

Maintenance Permit? Y N Date:

SCF Contribution? Y N Date:

30 day leach? Uknown Y N

Early Flood? Y N

CLUB #801 ANNIE MASON POINT CLUB

LAND USE SUMMARY

Managed wetland	30 ac.
Upland area	6 ac.
Tule berm	15 ac.
TOTAL	51 ac.

PRESENT CLUB CONDITIONS

WATER MANAGEMENT

Annie Mason Point Club is a small lone club located on Buckley Island. It is contained within a single levee surrounded by Grizzly Bay to the north and Suisun Cutoff to the south. Structure A on the east side of the club functions as the main flood gate and brings water into the club via a perimeter ditch system. A system of interior ditches running from south to north further distributes water to the pond. Structure B is used to drain the club into Grizzly Bay. Two small check dams (C and D) are located in the perimeter ditch. These structures aid in circulation by putting a head on the inlet water and forcing it to circulate across the club in a south to north direction. Removing the boards in the dam enables the ditch to drain.

VEGETATION

An on-club survey in 1976 found the club to be composed predominantly of olney and hardstem bulrush in the lower areas and saltgrass in the higher areas. The 1978 CA Dept. of Fish and Game aerial survey reported tule growth intermixed with the above vegetation. None of these plants has a relatively high use and selection value for waterfowl.

Olney and hardstem bulrush are both sod forming perennials which grow along sloughs and in ditches containing water most of the year. They will invade ponds which are shallowly flooded year round and are indicative of fairly fresh water conditions. Tules are also common in permanent ponds. Their increase was probably due to the club's lack of water control at the time.

SUMMARY

Prior to 1978, Annie Mason Point Club's vegetation largely consisted of non--waterfowl food plants. This was likely due to the club's lack of water control at the time. Since then, the situation has greatly improved and the club reports that it now has the water control structures and tight levees necessary for proper water management.

FLOOD/DRAIN EVALUATION

Due to limited access, an elevation survey was not done for this club. That being the case, the club's flood and drain capability could not be determined. However, using some assumptions, it is apparent that as the ponded area is very small, gates A and B would likely have to be only 24" in diameter to service this club effectively. Although structure B, the drain gate, must be set low enough to provide subsurface drainage of the pond.

CLUB IMPROVEMENTS

WATER MANAGEMENT

Needed Improvements: It is, first of all, necessary that the club follows a

regular program of water management; in this case the alkali bulrush program is recommended to promote such growth as well as fat hen and brass buttons. Considering the generally poorer quality water in Suisun Bay, effective spring leach cycles performed within 30 days are required to establish and maintain suitable habitat.

Proper water control necessitates inspection and maintenance of levees, ditches, and water control structures. Ditches need to be kept clear of vegetation blockages or silt build-ups to allow circulation and drainage. For effective drainage, ditches should be at least 2.5 ft. deeper than the average pond bottom elevation at the controlling tide gate, sloping to 1.5 ft. deep at the most remote point in the pond. Water control structures should also be kept in working order. Levees require frequent inspection and attention to prevent major breaks from occurring. See the enclosed list of standard recommendations for more information on the maintenance and repair of water control facilities.

VEGETATION MANAGEMENT

Needed Improvements: The dense growth of undesirable vegetation in the pond needs to be reduced by burning and/or discing followed by flooding according to the water management schedule. Removing the old vegetation and turning over the soil provides a seed bed for the establishment of new vegetation which is more preferred by waterfowl.

Emergent pond vegetation should be mowed to create open pond areas which are attractive to over-wintering waterfowl in the Suisun Marsh. The extent and pattern of mowing is left to the desires of the club. Close-cutting of tules and olney bulrush prior to fall flooding is an effective method of setting back their growth.

Levee vegetation should be mowed, as necessary, to facilitate access for maintenance reasons. This should be done after June 1st to lessen disruption of pheasant and waterfowl nesting.

SCS-CONS-59
Rev. 9-76
File Code CN-11

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

RECORD OF COOPERATOR'S DECISIONS AND PROGRESS IN APPLICATION

COOPERATOR James Taylor
ASSISTED BY Larry Norris
DATE 7/29/76

FIELD NUMBER	PLANNED		APPLIED	
	AMOUNT	YEAR	AMOUNT	MONTH AND YEAR
1	52	80		

LAND USE AND TREATMENT

LAND USE SUMMARY

FIELD #	ACRES	LAND USE
1	52	Wildlife (Wetland Habitat)

WILDLIFE MANAGEMENT SYSTEM (WETLAND HABITAT)

The resulting end product of Marsh management is habitat. The type and quality of habitat produced is the result of a number of variables, included among those are Wildlife Management, Soil Management, Water Management, Excess water removal, erosion control and irrigation.

WILDLIFE MANAGEMENT SUBSYSTEM

Wildlife (Wetland Habitat) Management

This club will be managed in an attempt to maximize the carrying capacity of the club for waterfowl. This includes providing high quality food plants such as: alkali bulrush, lambsquarter and brass buttons, and protected resting areas and loafing sites.

SCS-CONS-09
Rev. 9-70
File Code CN-11

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

RECORD OF COOPERATOR'S DECISIONS AND PROGRESS IN APPLICATION

COOPERATOR James Taylor
ASSISTED BY Larry Norris
DATE 7/29/76

FIELD NUMBER	PLANNED		APPLIED		LAND USE AND TREATMENT
	AMOUNT	YEAR	AMOUNT	MONTH AND YEAR	
					WATER MANAGEMENT SUBSYSTEM
1	1000±	Fall 76	4775± prior to 76		Dikes and Levees:
					Existing exterior levees which need work immediately, in order to enable
					complete drainage and control of flushing and irrigation water will be
					repaired. Areas in need of work are scattered, but lie primarily on the
					North side of the island.
1	52	78			Irrigation Water Management:
					Irrigation Water Management as outlined in the enclosed Water Management
					Schedule will be followed after repair of the Dikes and Levees and in-
					stallation of adequate water control structures to do the job (See Ir-
					rigation Subsystem).
					IRRIGATION SUBSYSTEM
1	2	77			Structures for Water Control:
					Two water control structures will be installed to circulate water and
					irrigate the Duck Ponds (for structure sizes and capabilities refer to

GENERAL INFORMATION

This plan covers the Annie Mason Pt. Club located on Buckley Island. The property is managed for Wildlife Habitat (primarily Wetland) and recreation.

A run down of the soil characteristics is given on the enclosed Soil and Capability Map Summary. Generally speaking Joice muck and Tamba mucky clay are strongly saline soils 15-58 mmhos with moderately alkaline layers. These layers become acid if the soil is allowed to dry, and cracks appear. The water table varies but is usually less than 30 inches below the surface in mid-summer. Dominant vegetation consists of perennial sedges and herbs.

Existing vegetation on the club consists predominantly of Olney bulrush and hardstem bulrush, on lower areas, and saltgrass on the higher. All of these plants have a relatively low use and selection value for waterfowl. Olney and hardstem bulrush are both sod forming perennials which grow along sloughs and in ditches which contain water most of the year. They will invade ponds which are shallow flooded year round. The presence of these two hydrophytic plants indicates fairly fresh conditions; therefore, changing the habitat to a highly productive and selective one for waterfowl should be relatively easy.

The main problem hampering proper management of the club is water control. It is important to remember that a marsh is actually an intermediate successional stage between an upland and a lake. Proper marsh management simply accentuates this intermediate state and perpetuates a disturbed site

condition. This allows the high seed producing perennials such as Brass-button and alkali bulrush and the annual such as Lambsquarter to invade and dominate the marsh. Water control is the key.

The existing levee system is in poor condition and needs work including the installation of irrigation structures. If this is done adequate water control will be achieved to properly manage the marsh for waterfowl.

Once the club can be drained effectively the Olney and hardstem bulrush should be set back by first mowing and then disking. Extreme caution should be exercised when using fire around Joice muck soils, this soil tends to catch on fire. After the perennial growth has been set back physically in early spring, alkali bulrush should be seeded at the rate of 30#/AC. Seeding should take place by April thus eliminating the first couple flush cycles in the Water Management schedule the first year, while the club is dried out and disked.

SCS-CON 5-69
Rev. 9-70
File Code CN-11

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

RECORD OF COOPERATOR'S DECISIONS AND PROGRESS IN APPLICATION

COOPERATOR James Taylor
ASSISTED BY Larry Norris
DATE 7/29/76

FIELD NUMBER	PLANNED		APPLIED		LAND USE AND TREATMENT
	AMOUNT	YEAR	AMOUNT	MONTH AND YEAR	
					Engineering specifications). One of these structures should be a screw
					flap type (A) used as an inlet. The other structure should be a flash-
					board riser (B) outlet, exact placement of these structures has not been
					decided upon yet. In addition to these main inlet and outlet structures,
					two small check dams (C,D) will be placed in the drainage ditch going
					around the perimeter of the club. These two structures will put a head
					on the inlet water and force it to circulate across the club, putting
					the boards in the check dam will enable the drain to empty.
			4375 ±	prior to 76	EXCESSIVE WATER REMOVAL SUBSYSTEM Drainage Ditches:
					The existing drainage ditch system will be kept clean to facilitate
					drainage.
	52	79			SOIL MANAGEMENT SUBSYSTEM Toxic Salt Reduction: Water will be circulated during the winter and
					spring to reduce toxic slats in the soil surface.

CP-CONS-3
Rev 8/75

U.S. Department of Agriculture
Soil Conservation Service

SOIL and CAPABILITY MAP SUMMARY

Cooperator: _____ Date: _____

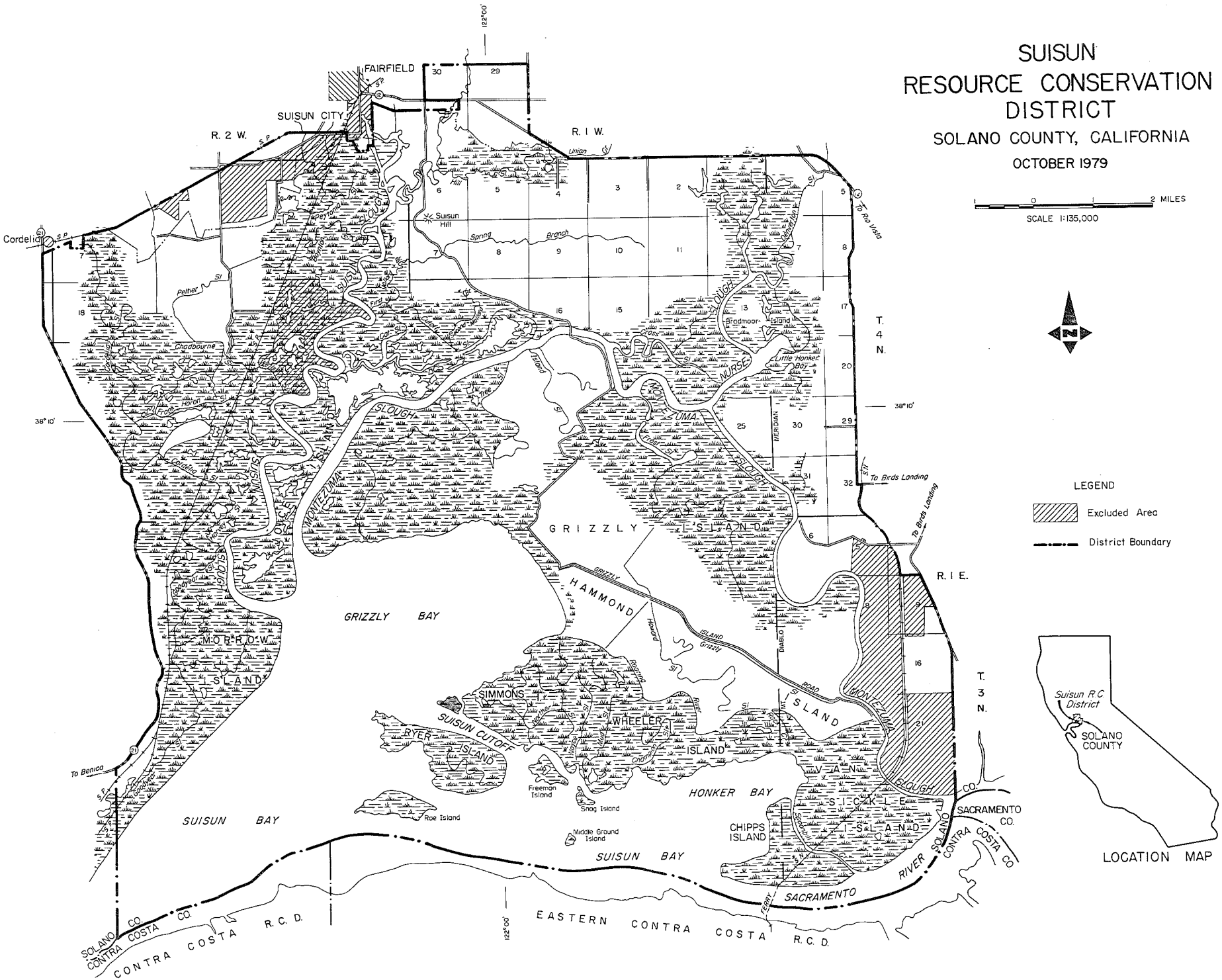
Land Capability Unit	Symbol on Map	Soil Name	Effective Depth	Soil Profile			Average Slope in %	Erosion Status	Suitable Land Uses or Crops	Limiting Factors or Remarks
				Texture		A.W.C.* Inches				
				Surface	Subsoil					
VIw-1	Ja	Joice Muck	+60"	clayey muck	clayey muck	14-15"	0-1%	slight	1) Wildlife, wetland habitat. 2) Recreation.	1) Rooting depth restricted by high water table. 2) Requires drainage and leaching of soil salts for proper management. 3) Levees and tidegates are necessary for water control. 4) Only salt tolerant vegetation should be managed for.
VIIIw-1	Td	Tidal Marsh	----------variable------			1-2"	0-1%	NONE	1) Wildlife wetland habitat.	1) Strongly saline land type. 2) Mud flats, subject to tidal inundation.

*A.W.C. - Available Water Holding Capacity for the entire soil profile

SUISUN RESOURCE CONSERVATION DISTRICT

SOLANO COUNTY, CALIFORNIA

OCTOBER 1979



Source:
Base map prepared by SCS, WTSC Carto Unit from USGS 1:24,000 quads.
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE USDA-SCS-PORTLAND, OR. 1978

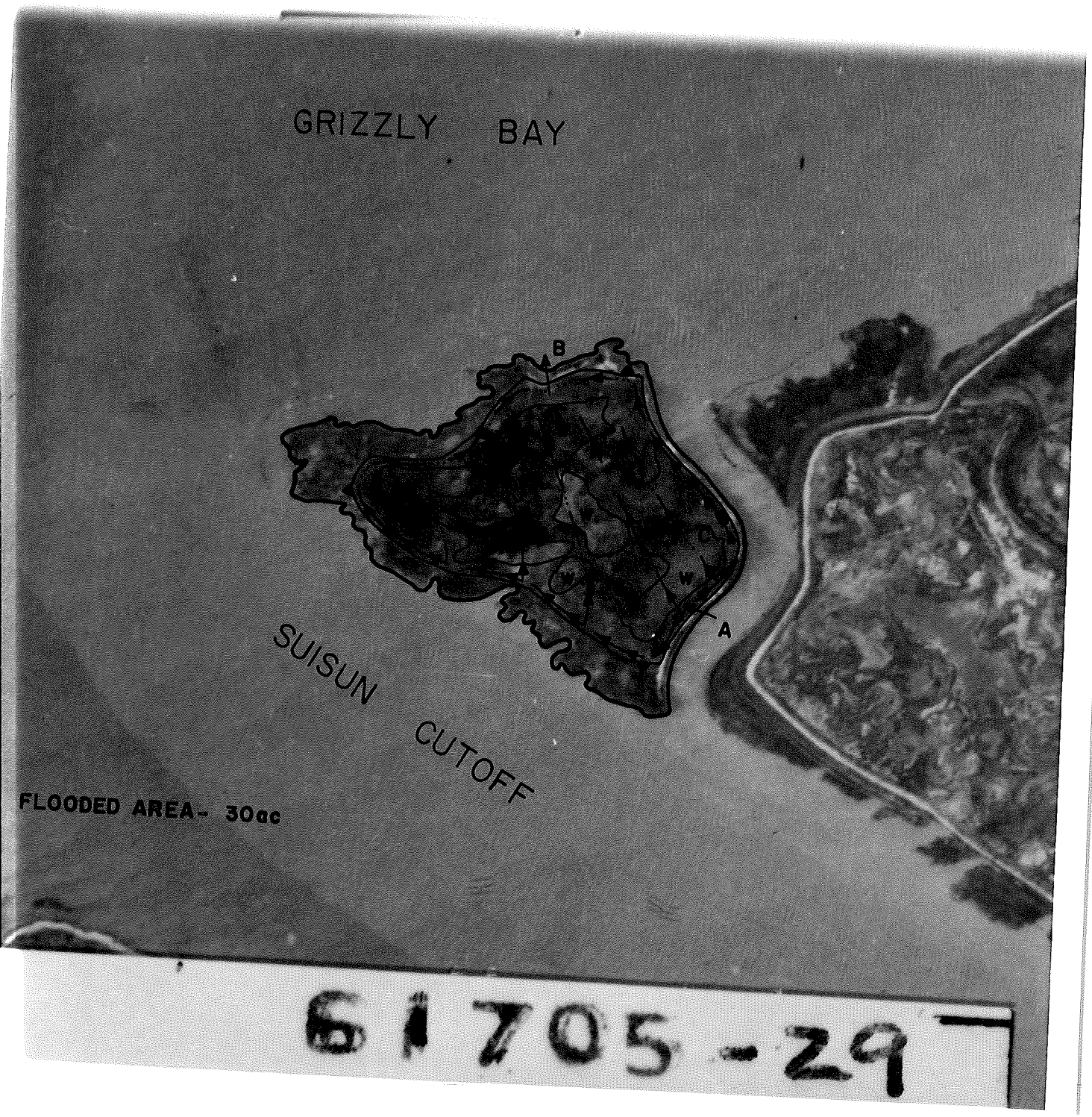
SUISUN R. C. D. (181) CAL. M7-PL- 17659

SCS-CONS-16
OCTOBER 1974

CONSERVATION PLAN MAP

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Owner Taylor, James F. Operator
County Solano State CA Date
Approximate acres 51.51 Approximate scale 1"=660'
Cooperating with Suisun Resource Conservation District
N Plan identification 801 Photo number
Assisted by USDA Soil Conservation Service



61705-29

26b. Violation Report/Complaint for the Administrative Imposition of Civil Penalties
Enforcement Investigation No. ER2012.038, BCDC, May 23, 2016

San Francisco Bay Conservation and Development Commission
455 Golden Gate Avenue, Suite 10600, San Francisco, California 94102 tel 415 352 3600 fax 415 352 3606

File: ER2012.038
Permit: None
Date Mailed: May 23, 2016
35th Day After Mailing: June 27, 2016
Hearing Date: July 21, 2016

VIOLATION REPORT/COMPLAINT
FOR THE ADMINISTRATIVE IMPOSITION OF CIVIL PENALTIES
ENFORCEMENT INVESTIGATION NO. ER2012.038
POINT BUCKLER CLUB, LLC AND JOHN DONNELLY SWEENEY

FAILURE TO RESPOND TO THIS VIOLATION REPORT/COMPLAINT FOR THE ADMINISTRATIVE IMPOSITION OF CIVIL PENALTIES BY COMPLETING THE ENCLOSED STATEMENT OF DEFENSE FORM AND ENCLOSING ALL PERTINENT DECLARATIONS UNDER PENALTY OF PERJURY, PHOTOGRAPHS, LETTERS, AND OTHER WRITTEN DOCUMENTS COULD RESULT IN A CEASE AND DESIST ORDER OR A CIVIL PENALTY ORDER BEING ISSUED TO YOU, OR A SUBSTANTIAL ADMINISTRATIVE CIVIL PENALTY BEING IMPOSED ON YOU WITHOUT YOUR HAVING AN OPPORTUNITY TO CONTEST THEM OR TO INTRODUCE ANY EVIDENCE.

The San Francisco Bay Conservation and Development Commission (Commission or BCDC) is issuing this Violation Report/Complaint for the Administrative Imposition of Civil Penalties (Report/Complaint) and statement of defense form because the Commission's staff believes that you may be responsible for or involved with a possible violation of the Commission's laws and permits issued by the Commission. The Report/Complaint contains a brief summary of all the pertinent information that staff currently has concerning the possible violation and reference to all the pertinent evidence on which the staff currently relies. All the evidence this Report/Complaint refers to is available in the administrative record for this matter located at the Commission's office. You can review these materials at the Commission's office or have copies made at your expense or both by contacting Maggie Weber or Marc Zeppetello of the Commission's staff at telephone number (415) 352-3600. This Report/Complaint also informs you of the nature of the possible violations so that you can fill out the enclosed statement of defense form and otherwise be prepared for Commission enforcement proceedings.

Issuance of this Report/Complaint and the enclosed statement of defense form is the first step in formal Commission enforcement proceedings. Subsequently, the Commission will hold an enforcement hearing and will determine what, if any, enforcement action to take.

Careful reading of and a timely response to these materials is essential to allow you to present your side of the case to the Commission. A copy of the Commission's enforcement regulations is also included so that you can fully understand the Commission's enforcement procedures. If you have any questions concerning either the violation report, the enclosed statement of defense form, the procedures that the Commission and its enforcement committee follow, or anything else pertinent to this matter, you should contact, Maggie Weber or Marc Zeppetello of the Commission's staff at telephone number (415) 352-3600 as quickly as possible. Thank you for your cooperation.

I. Person or persons believed responsible for illegal activity:

Point Buckler Club, LLC
John Donnelly Sweeney, Registered Agent
171 Sandpiper Drive
Pittsburg, CA 94565

John Donnelly Sweeney
171 Sandpiper Drive
Pittsburg, CA 94565

II. Name of owner, lessee (if any), and other person(s) (if any) who controls property on which illegal activity occurred:

Point Buckler Club, LLC is the owner of approximately 39 acres of land at Point Buckler Island, which is located off the western tip of Simmons Island in the Suisun Marsh, Solano County (the Site). John Donnelly Sweeney (Mr. Sweeney) is a principal of Point Buckler Club, LLC and owned the Site from approximately April 19, 2011, to October 27, 2014, when he conveyed the Site to Point Buckler Club, LLC. Point Buckler Club, LLC and Mr. Sweeney are hereafter collectively referred to as SWEENEY.

III. Description of and location of property on which illegal activity occurred:

The violations occurred at Point Buckler Island (Assessor's Parcel No. 0090-020-010), which is located off the western tip of Simmons Island in the Suisun Marsh, Solano County (the Site).

The Site is subject to the jurisdiction of the Commission under the McAteer-Petris Act (MPA) as established by Government Code Section 666610. More specifically, the Site is in the Commission's "San Francisco Bay" jurisdiction as defined in Government Code Section 666610(a).

The Site is also located in the "primary management area" (PMA) of the "Suisun Marsh," as those terms are defined in the Suisun Marsh Preservation Act (SMPA) (Public Resources Code Sections 29102 and 29101, respectively). Therefore, the Site is subject to the jurisdiction of the Commission under the SMPA.

IV. Brief description of the nature of the illegal activity:

A. SWEENEY has violated and continues to violate the McAteer-Petris Act (MPA) by conducting the unpermitted activities at the Site as described herein, including but not limited to:

1. Placing fill in waters of San Francisco Bay, including tidal marsh, by constructing and rebuilding levees, excavating ditches and four crescent shaped ponds, installing a new dock in Anne Mason Slough, constructing roads, and placing numerous containers, trailers, and other structures and two helipads on tidal marsh; and
2. Making substantial changes in the use of water, land, or structures within the area of the Commission's jurisdiction by: (1) closing all the tidal breaches that existed in 2011 when Mr. Sweeney purchased the Site and thereby cutting off all tidal activity to the interior of the Site; (2) installing a new water control structure in the western portion of the Site; (3) draining the Site to further alter the pre-existing tidal marsh hydrology; (4) removing or destroying tidal marsh vegetation by the placement of fill, excavation activities, mowing activities, drainage activities, and bringing goats to the Site and allowing those goats to graze on the tidal marsh vegetation; (5) installing numerous trailers and containers and two mobile helipads at the Site; and (6) developing and operating the Site for intensive water-oriented recreational uses including but not necessarily limited to kite-boarding.

B. SWEENEY has violated and continues to violate the SMPA by conducting unpermitted development at the Site as described herein, including but not limited to: (a) placing fill in waters of San Francisco Bay, including tidal marsh, by constructing levees; (b) excavating ditches and four crescent shaped ponds; (c) installing a new water control structure in the western portion of the Site; (d) installing a new dock in Anne Mason Slough; (e) constructing roads; (f) placing numerous containers, trailers and other structures and two mobile helipads on tidal marsh; (g) removing or destroying tidal marsh vegetation by the excavation activities, mowing activities, and bringing goats to the Site and allowing those goats to graze on the tidal marsh vegetation; and (h) developing and operating the Site for intensive water-oriented recreational uses including but not necessarily limited to kiting.

V. Approximate dates illegal activity occurred:

The violations summarized in Section IV, above, and described more fully in Section VI, below, began by no later than May 2012 and continue to persist through the date of issuance of this Report/Complaint.

VI. Summary of all pertinent information currently known to the staff in the form of proposed findings with references to all pertinent supporting evidence contained in the staff's enforcement file (the file is available at the Commission's office for your review; you should call Ms. Weber to arrange to the review the file):

This Violation Report/Complaint is based on the following proposed findings. The administrative record in support of these proposed findings includes: (1) all documents and other evidence cited herein or attached as exhibits hereto; (2) the attached declaration and the documents cited therein; and (3) all additional documents listed in the Index of Administrative Record attached hereto as Exhibit A. You may review the administrative record at BCDC's office or obtain copies of any or all documents contained in the record at your expense.

A. The Commission has prepared and adopted the "Suisun Marsh Protection Plan," as that term is defined in the SMPA (Public Resources Code Section 29113(a)). In addition, the Commission has certified, the "local protection program" (LPP) as defined in Public Resources Code Section 29111, consisting of a number of components prepared by or submitted to Solano County or prepared by the Suisun Resource Conservation District (SRCD), that meets the requirements of, and implements, the SMPA and the Suisun Marsh Protection Plan at the local level.

B. One component of the certified local protection program is the Suisun Marsh Management Program (SMMP) prepared by SRCD pursuant to the SMPA (Public Resources Code Sections 29401(d) and 29412.5). The SMMP consists of the following principal elements:

   1. a general management program;
   2. individual water management programs for each privately-owned "managed wetland" within the primary management area of the Suisun Marsh;
   3. enforceable Standards Covering Diking, Flooding, Draining, Filling and Dredging of Tidal Waters, Managed Wetlands and Tidal Marsh Within the Primary Management Area; and
   4. regulations adopted by SRCD to ensure effective water management on privately-owned lands within the primary management area.

   In Public Resources Code Section 29105, the SMPA defines the term "managed wetland" to mean "those diked areas in the marsh in which water inflow and outflow is artificially controlled or in which waterfowl food plants are cultivated, or both, to enhance habitat conditions for waterfowl and other water-associated birds, wildlife, or fish...." *See also* Declaration of Steven Chappell (April 21, 2016), attached hereto as Exhibit B, at ¶¶ 7, 9.

C. Nothwithstanding the otherwise applicable provisions of Public Resources Code Section 29500 regarding the need to obtain a Marsh Development Permit (MDP), in Public Resources Code Section 29501.5 the SMPA states that within the PMA of the Suisun Marsh, no MDP is required for any development specified in the component of the LPP prepared by SRCD and certified by the Commission.

D. In or about 1984, individual management programs (commonly referred to as individual management plans or IMPs) were developed for each privately-owned managed wetland in the primary management area of the Suisun Marsh, including the Site, and were reviewed by the California Department of Fish and Game (now California Department of Fish and Wildlife or CDFW) and certified by the Commission. Suisun Marsh Protection Program at 34 and 70-71 (map); Chappell Declaration at ¶ 11.

E. The IMP for the Site, denominated the "Annie Mason Point Club" (Annie Mason IMP), states that the club is contained within a single levee surrounded by Grizzly Bay to the north and Suisun Cutoff to the south, and describes two water control structures: (a) a main flood gate on the east side that functions to bring water into the club via a perimeter ditch system; and (b) a structure on the north side used to drain the club into

Grizzly Bay. The Annie Mason IMP further states, in a subsection addressing Water Management, Needed Improvements, that it is "necessary that the club follows a regular program of water management," and that:

> *Proper water control necessitates inspection and maintenance of levees, ditches, and water control structures....Levees require frequent inspection and attention to prevent major breaks from occurring.*

The Annie Mason IMP also contains a subsection addressing Vegetation Management, Needed Improvements, that discusses removal of undesirable vegetation to provide for the establishment of new vegetation more preferred by waterfowl. *See* Chappell Declaration at ¶ 11.

F. In September 1989, the owner of the Site at that time, John Taylor, submitted an application to the Commission to place approximately 50,000 cubic yards of dredged material from the Port of Oakland on levees at the Site to improve water control. In October 1989, Commission staff determined that the application was incomplete and requested additional information from the applicant. No additional information was provided to staff, the application was never filed as complete, and no permit was issued by the Commission for this proposed work.

G. On or about January 29, 1990, a Wetlands Maintenance Management Report was prepared that proposed the following work at the Site: (a) clearing ditches, 1,000 cubic yards, approximately 1,200 linear feet; (b) interior levee repair, 2,000 cubic yards, 500 linear feet; and (c) exterior levee repair, 2,000 cubic yards, 750 linear feet. There is no record documenting that this work was commenced or completed. Chappell Declaration at ¶ 14.

H. At all times subsequent to certification of the Annie Mason IMP in 1984, all owners of property within the Suisun Marsh, including the Site, have been subject to certain regulatory requirements imposed by the United States Army Corps of Engineers (USACE) under the Clean Water Act and/or the Rivers and Harbors Act of 1899. These requirements are and typically have been set forth in a series of Regional General Permits (RGPs) issued by the USACE for successive five-year terms. The RGP currently in effect, RGP3 dated July 8, 2013, regulates, among other things: "2) ACTIVITIES ON LEVEES: a. Repair of Interior and Exterior Levees...to repair damage from storms and to counteract subsidence of the levees." Under Section 6, "PERMIT ADMINISTRATION," the current RGP requires property owners who intend to perform repair and other work activities that are regulated by the RGP to prepare and submit to the SRCD a report (called a "work request form") that describes the proposed activities. The RGP gives to the SRCD the responsibility to compile and submit to the USACE the reports that the SRCD receives from property owners. Previous versions of the RGP contained regulatory requirements of similar scope and content. The records of the SRCD since 1994 reveal no reports submitted by any owner of the Site for purposes of compliance with an RGP regarding repair or maintenance of the levees at the Site. Chappell Declaration at ¶¶ 15-16.

I. An aerial photograph dated April 30, 1985, shortly after preparation of the Annie Mason IMP, shows that the levees at the Site were intact at that time, precluding tidal action except via the authorized water control structures, and provided the necessary infrastructure to control water levels at the Site for managed wetlands conditions. Notwithstanding the foregoing, in an analysis performed in 1984 by the California Department of Water Resources (CDWR), the CDWR determined that "Levees about Annie Mason Island are not now in good repair." Chappell Declaration at ¶ 12.

J. In contrast, a series of aerial photographs taken from July 1988 to September 2011 show the progressive levee breaches that conveyed tidal waters from Grizzly Bay into and from the interior ditch and channel network, and thus the reversion of the Site to tidal marsh. The first levee breach (in the north) had occurred by August 1988, and two more breaches (one in the southwest and another in the northeast) had occurred by May 1991. Two more levee breaches (one in the south and another in the northeast) had occurred by August 1993, and two more levee breaches (both in the northwest) had occurred by the Summer 2003. Beginning in or about 1988 with the first levee breach, continuing between 1988 to 2003 with the six additional levee breaches that occurred over this period, and continuing from in or about 2003 to 2011 with all seven levee breaches, these breaches provided daily tidal exchange between the Bay waters and the tidal marsh that comprised the Site, and the interior channels and ditch provided internal tidal circulation throughout the Site. Aerial photographs dated: April 30, 1985; July 14, 1988; August 18, 1988; June 13, 1990; May 28, 1991; August 23, 1993; Summer 2003; October 20, 2003; Summer 2006; April 2011; and September 1, 2011. Siegel Environmental, Point Buckler Technical Assessment of Current Conditions and Historic Reconstruction Since 1985 (May 12, 2016) (Point Buckler Technical Assessment Report), Appendix G (Opening of Tidal Connectivity and Establishment of Tidal Marsh, 1985 to 2011), Section G-3.1.

K. Beginning no later than August 1988, with the first levee breach, the areas of the Site formerly consisting of managed wetlands began reverting to "tidal marsh," as that term is defined in Section II, Exhibit C of the SMMP due to: (a) the lack of maintenance of the levees and water control structures at the Site; (b) the constant exposure of the Site to daily tides and the forces of the waves and winds; and (c) the periodic exposure of the Site to storm events. The reversion and persistence of the Site as tidal marsh continued after May 1991 from three levee breaches, after August 1993 from five levee breaches, and after August 2003 from seven levee breaches, which provided daily tidal exchange between the Bay waters and the interior channels and ditch, and provided internal tidal circulation throughout the Site. Point Buckler Technical Assessment Report, Appendix G (Opening of Tidal Connectivity and Establishment of Tidal Marsh, 1985 to 2011).

L. During this same period (1988 –2011), due to the progressive erosion and deterioration of the remnant levees over this period, portions of the Site interior to the levees were subject to the inflow and outflow of tidal waters in the form of "overtopping" of the

levees during "about half of the high tides." This form of tidal influence on the Site is referred to as "'overland' flow of tidal waters to the interior tidal marsh." Pt. Buckler Technical Assessment Report, App. G, Section G-3.2.

M. Mr. Sweeney purchased the Site on or about April 19, 2011. An aerial photograph taken in April 2011, and attached hereto as Exhibit C, shows that at that time the levees at the Site were breached at seven different locations and the entire Site was intersected by countless tidal channels that, together with the remnant interior ditch and combined with overland flow of tidal waters, provided internal tidal circulation throughout the entire Site. These same conditions are shown in an aerial photograph taken on September 1, 2011. Aerial photographs dated: April 2011; and September 1, 2011; Point Buckler Technical Assessment Report, Appendix G (Opening of Tidal Connectivity and Establishment of Tidal Marsh, 1985 to 2011).

N. The status of the Site as constituting, over the overwhelming preponderance of its area, a tidal marsh is also confirmed by CDFW Suisun Marsh vegetation data sets which show virtually the entire Site to be dominated by the growth of vegetation types characteristic of tidal wetland areas. Pt. Buckler Technical Assessment Report, Appendices G (Section G-3.2) and H (Fig. H-2).

O. Over an approximately 20-year period before Mr. Sweeney purchased the Site in April 2011: (a) the levees and water control structures at the site were not maintained; (b) the site was subject to tidal action and consisted of tidal marsh, including in the areas interior to the progressively eroded, deteriorated and breached levees; and (c) the Site did not contain managed wetlands as defined in the SMPA (Public Resources Code Section 29105). For these reasons, when Mr. Sweeney purchased the Site, the Annie Mason IMP no longer applied to the Site and any potential development at the Site was not specified in the SRCD's component of the local protection program. Therefore, at the time Mr. Sweeney purchased the Site, a MDP from the Commission was required pursuant to the SMPA (Public Resources Code Section 29500-29501), to authorize any "development" (as defined in Public Resources Code Section 29114(a)) at the Site, and a permit was required by the Commission, pursuant to Government Code § 66632(a), to authorize the placement of any fill or to make any substantial change in use of any water, land, or structure at the Site. Chappell Declaration at ¶¶ 17-21.

P. Beginning by no later than May 2012, and without applying for or obtaining a permit from BCDC under either the MPA or the SMPA, Mr. Sweeney began excavating trenches and ditches in tidal marsh, rebuilding eroded levees, and placing fill on tidal marsh to construct new levees at the Site. This work included but may not have been limited to constructing new levees by excavating material from the ditch inside the eroded levees and placing such material on (a) the remnants of the eroded levees in locations where the eroded levees remained; and (b) tidal marsh and waters of the State inside former levee locations where the former levees had completely eroded and disappeared and had been replaced by tidal marsh. In addition, without applying for or obtaining a permit from BCDC under either the MPA or the SMPA, Mr. Sweeney removed one of the former water control structures from the Site and, in approximately September 2013,

replaced a sunken dock located in the southeast portion of the Site with a larger dock at the same location. Declaration of John D. Sweeney in Support of Ex Parte Application, Sonoma County Superior Court Case No. FCS046410 (December 28, 2015), at paragraph 4; Email from Mr. Sweeney to Jim Starr, CDFW, dated November 19, 2014. Aerial photographs or Google Earth images dated May 19, 2012, February 3, 2014, March 24, 2014, May 22, 2014, August 6, 2014, October 29, 2014, and January 29, 2015. Point Buckler Technical Assessment Report, Appendix K (Fill and Excavation in Wetlands and Waters Since 2011). Each of these unauthorized activities constituted "development" as defined in Public Resources Code Section 29114, and the construction of new levees, and installation of a replacement dock each constituted both placement of fill and a substantial change of use of land and water under Government Code Section 66632(a).

Q. Even if the Annie Mason IMP still applied to the Site at the time Mr. Sweeney engaged in the above-described activities, which it did not (see ¶ N above), said activities were not described in and thus were not authorized by the Annie Mason IMP. Specifically, as noted above in ¶ E, the Annie Mason IMP authorized the "inspection and maintenance" of existing levees, not the construction of an entirely new levee to replace a previously existing levee that had eroded away to the point that it no longer served any effective water control function. Moreover, the Annie Mason IMP does not authorize any improvements or other work to occur in any portion of the Site that qualifies as a "tidal marsh." See Chappell Declaration at ¶ 19.

R. On March 19, 2014, while two BCDC staff members and Steve Chappell, Executive Director of SRCD, were touring the Suisun Marsh, one of the locations they visited was Simmons Island, located approximately 100 yards east of the Site across Annie Mason Slough. From the western levee on Simmons Island, directly east of the Site, they observed that a significant amount of heavy machinery was on the Site and that substantial landform alteration (*i.e.,* excavation and redeposit of excavated material) had occurred, which appeared to have as its purpose the construction of a new levee. BCDC staff and Mr. Chappell also observed a floating dock and pier at the southeastern portion of the Site. The levee construction work observed at the Site was a surprise to Mr. Chappell because the Site met the SMMP's definition of a "tidal marsh" and he knew that work of this nature was clearly subject to the USACE, Regional Water Quality Control Board, and BCDC permitting requirements. Mr. Chappell knew of his own personal knowledge that: there had been no such permit authorizations; that a "work request form" under the USACE's RGP3 had not been submitted to SRCD or approved by the USACE for the construction activity observed on the Site; and that such a request could not have been authorized by the USACE under the RGP3 for the construction activity observed at the Site. Chappell Declaration at ¶ 17.

S. On or about October 27, 2014, Mr. Sweeney transferred title to the Site to the Point Buckler Club, LCC.

T. Some time in or about 2014, and without applying for and obtaining from the BCDC a permit under the MPA or a MDP under the SMPA, SWEENEY began operating the Site as a "Private Sport and Social Island located in the California Delta. Ideally suited for the

Bay Area / Silicon Valley Executives who want to get away and enjoy kiting in a safe and secluded environment without boarding a plane." www.pointbucklerisland.com. *See also* www.facebook.com/pointbucklerclubVIP. Such activities constituted both a "substantial change of use of land and water" under the MPA (Government Code Section 66632(a)) and "development" (as defined in Public Resources Code Section 29114) under the SMPA.

U. On November 14, 2014, BCDC staff inspected the Site, accompanied by Jim Starr of CDFW, and identified a number of violations of the SMPA and the MPA, including but not limited to:

1. During unpermitted construction of new levees, three major tidal channels were filled, thus removing tidal flow to the interior of the island. Further, it appeared from the extent of the levee construction that SWEENEY was in the process of draining this once tidally active marshland in order to convert the Site to upland.
2. Unpermitted levee construction work had been conducted outside the appropriate work windows for the following protected species: Chinook Salmon, Delta Smelt, Clapper Rail, and Salt Marsh Harvest Mouse.
3. Unauthorized installation of an approximately 288-square-foot dock on the eastern portion of the Site in Anne Mason Slough, which sometime between the Fall of 2013 and Spring of 2014 was enlarged to roughly 1,400 square feet.
4. Unauthorized placement of two mobile army trailers on the northwest side of the Site and one on the southeast side of the Site.
5. Unauthorized placement of two shipping containers on the southeast side of the Site.

During the Site inspection, BCDC staff provided Mr. Sweeney with a copy of the Annie Mason IMP because he had previously informed BCDC staff that he did not have a copy of that document and had requested a copy.

V. The unauthorized work SWEENEY performed at the Site from May 2012 to January 29, 2015 is shown in a series of aerial photographs and Google Earth images. The photographs and images show that SWEENEY:

1. initiated trench excavation and filling activities by no later than May 2012;
2. installed a large dock in Annie Mason Slough and began grading in the southeastern corner of the Site by February 3, 2014;
3. conducted levee construction and ditch excavation activities along the southern and southwestern portion of the Site, closing two of the tidal breaches, by March 24, 2014;
4. conducted levee construction and ditch excavation activities in a clockwise direction around to the northeastern portion of the site, closing off the five remaining tidal breaches and cutting off all tidal channel connectivity to the interior of the Site, by August 6, 2014;

5. completed the final segment of levee construction and ditch excavation activities along the eastern portion of the Site by October 28, 2014; and
6. excavated three crescent ponds in tidal marsh in the interior of the Site by January 29, 2015.

   Aerial photographs or Google Earth images dated: May 19, 2012; February 3, 2014; March 24, 2014; May 22, 2014; August 6, 2014; October 29, 2014; and January 29, 2015. Point Buckler Technical Assessment Report, Appendix K (Fill and Excavation in Wetlands and Waters Since 2011).

W. On January 30, 2015, BCDC sent a letter to SWEENEY regarding the unauthorized work observed during the November 14, 2014 Site inspection. The letter discussed the regulatory framework governing the Suisun Marsh and, in particular, the Site, including the Suisun Marsh Protection Plan and IMPs, and explained that based on available information, the history of the Site, and the recent Site visit, the Site had never been managed in accordance with the Annie Mason IMP and had long ago reverted to a tidal marsh due to neglect, abandonment, and/or the forces of nature. The letter advised SWEENEY that a marsh development permit from BCDC was required prior to performing any development at the Site, and that any work that could not be retroactively approved through such a permit would likely need to be removed, restoring the Site to tidal marsh. BCDC staff recommended that SWEENEY restore the Site, following BCDC approval of a professionally prepared plan, or begin compiling a MDP application. Furthermore, BCDC staff requested that SWEENEY stop work at the Site. Finally, the letter advised SWEENEY of potential future BCDC enforcement options, including an Executive Director Cease and Desist Order (CDO), a Commission CDO, and Civil Penalty Order.

X. On March 25, 2015, counsel for SWEENEY wrote to BCDC questioning the applicability to the Site of the SMPA requirements for a marsh development permit. By letter dated May 7, 2015, BCDC staff once again explained that because conditions at the Site had fundamentally changed as a result of years of neglect, failed attempts at management, and natural forces, the Site had reverted to a tidal marsh and was no longer a managed wetland as defined in the SMPA, and, therefore, the Anne Mason IMP no longer applied to the Site. BCDC staff reaffirmed that given the fundamental change in Site conditions, any future work at the Site requires a MDP. Furthermore, BCDC staff recommended that SWEENEY restore the Site to tidal marsh or begin the MDP application process.

Y. A Google Earth image dated April 1, 2015 shows that SWEENEY continued to perform unauthorized work at the Site after receiving BCDC's letter dated January 30, 2015 directing that SWEENEY stop work. The referenced image shows new work (since an aerial photograph taken on January 29, 2015) including, but not limited to: (a) excavating a fourth crescent pond in tidal marsh in the interior of the Site; (b) placing fill in the ditch for a road to cross the ditch at the west side of the Site; (c) placing fill on tidal marsh for a road to the water's edge at the northwestern corner of the Site; (d) mowing vegetation and grading for a road on tidal marsh across the Site; (e) installing containers and trailers on tidal marsh in the western portion of the Site; and (f)

installing another trailer or container on the east side of the Site. Google Earth image dated April 1, 2015; Point Buckler Technical Assessment Report, Appendix K (Fill and Excavation in Wetlands and Waters Since 2011).

Z. On or about July 21, 2015, San Francisco Bay Regional Water Quality Control Board (Regional Board) staff provided notice to BCDC and other state and federal agencies of potential violations of state and federal laws protecting wetlands and special status species at the Site. Email from Xavier Fernandez, Regional Board, dated July 21, 2015, with attachments.

AA. On July 28, 2015, the Regional Board sent to Point Buckler, LLC a Notice of Violation for Filling Waters of the United States and State at the Site, alleging violations of both the federal Clean Water Act and the California Water Code.

BB. On August 11, 2015, BCDC staff met with Mr. Sweeney and his counsel to discuss the violations of the SMPA and MPA at the Site. At that meeting, SWEENEY's counsel offered to provide additional information to BCDC regarding the historic conditions at the Site and Mr. Sweeney's recent activities there. By letter dated August 18, 2015, BCDC staff provided guidance on what the additional information should focus on in order to be useful to staff in determining whether or not to proceed with an enforcement action. In summary, staff suggested that the additional information include: (a) a historical perspective of the inflow and outflow of tidal water at the Site since 1984; (b) a biological Site assessment; (c) documentation of Mr. Sweeney's cultivation of waterfowl food plants at the Site; and (d) any reports submitted by Mr. Sweeney to the SRCD describing any actions which he had taken to implement the Annie Mason IMP. Staff requested that, as discussed at the August 11, 2015 meeting, SWEENEY's counsel provide any additional information to BCDC by no later than October 10, 2015.

CC. On September 11, 2015, the Executive Officer of the Regional Board issued Cleanup and Abatement Order No. R2-2015-0038 to Point Buckler LLC, as named Discharger, for unauthorized levee construction activities at the Site. Order R2-2015-0038 found that Point Buckler LLC's "levee construction activities included construction of a levee around the perimeter of the Site resulting in the diking off of the tidal channels located on the northeast, northwest, and southwest portions of the Site," and had adversely impacted tidal marsh vegetation and tidal marshlands that constitute waters of the State and the United States.

DD. On October 12, 2015, SWEENEY's newly-retained counsel requested that BCDC provide additional time for SWEENEY to submit information and analysis responsive to BCDC's allegations of unpermitted activities at the Site, which SWEENEY's prior counsel had offered to provide and as discussed in BCDC's August 18, 2015 letter. SWEENEY's counsel indicated that Sweeny would provide BCDC with copies of submissions to the Regional Board required by Order R2-2015-0038, and suggested that those submissions would provide answers to most of the questions raised by BCDC.

EE. On October 21, 2015, representatives of BCDC, the Regional Board, United States Environmental Protection Agency, and USACE inspected the Site, together with Mr. Sweeney and his counsel. The purposes of the inspection were to observe and document Site conditions and obtain a better understanding of: (a) the nature and extent of construction activities performed by SWEENEY; (b) whether the work performed by SWEENEY was within the purview of the USACE RGP3; and (c) the extent of waters of the Bay, the State and the United States and tidal marsh habitat that was adversely impacted by the work performed by SWEENEY. During this Site inspection, BCDC staff observed that SWEENEY had performed additional work since the November 14, 2014 Site inspection including:

1. installed a dirt "land bridge" over culverts by placing fill at two locations across the drainage ditch to provide access to portions of the Site;
2. constructed a road across the interior of the Site;
3. excavated four semi-circular ponds in the interior of the Site;
4. installed a new, unauthorized water-control structure in the western portion of the Site;
5. moved two storage containers from the northwestern portion of the Site, where they were located during the November 14, 2014, Site inspection, to the interior of the Site and added two additional storage containers;
6. installed a goat pen and brought a number of goats to the Site;
7. removed, mowed, grazed, and/or flattened tidal marsh vegetation throughout the interior of the Site; and
8. planted approximately 14 trees on the Site, all of which had died, apparently due to high salinity levels.

FF. On December 17, 2015, BCDC wrote to SWEENEY's counsel and agreed to provide additional time, as requested on October 12, 2015, for SWEENEY to provide information responsive to BCDC's allegations of unpermitted activities at the Site. BCDC extended to February 16, 2016, the deadline for SWEENEY to provide information and analysis responsive to the questions raised in BCDC's letter of August 18, 2015.

GG. On January 5, 2016, the Executive Officer of the Regional Board rescinded Order R2-2015-0038 in order to address procedural due process claims asserted by SWEENEY. The rescission was without prejudice to Regional Board staff's ability to propose, or the Regional Board's ability to issue, a Cleanup and Abatement Order and/or other orders or permits covering the subject matter of Order R2-2015-0038.

HH. An aerial photograph dated February 10, 2016, and attached hereto as Exhibit D, shows that SWEENEY continued to perform unauthorized work at the Site after receiving BCDC's letter dated January 30, 2015 directing that SWEENEY stop work. The referenced image shows new work (since the Google Earth image dated April 1, 2015) including, but not limited to, installation of two helicopter landing pads and placement

of three wind-break platforms, all on tidal marsh. Aerial photograph dated February 10, 2016; Point Buckler Technical Assessment Report, Appendix K (Fill and Excavation in Wetlands and Waters Since 2011).

II. On February 16, 2016, SWEENEY's counsel submitted a letter to BCDC and an enclosed technical report, prepared by Applied Water Resources Corporation, entitled *Conditions at Point Buckler, Response to Cleanup and Abatement Order R2-2015-0038*, dated October 16, 2015 ("Conditions Report"), which, counsel indicated, provided some of the information regarding the Site requested by BCDC in its letter dated August 18, 2015. The Conditions Report establishes that the Site was a tidal marsh before SWEENEY began performing unauthorized work there and provides evidence that SWEENEY violated the MPA and SMPA at the Site. According to the Conditions Report:

1. In 2013, two years after Mr. Sweeney purchased the Site, aerial photographs show that there were eight tidally-influenced channels that bisected the eroded levees and through which tidal water flowed to or toward the interior of the Site. Conditions Report at 9.

2. "Recent activities at the Island has [sic] resulted in the placement of fill material into waters of the State." Conditions Report at 4. This work involved rebuilding and constructing the exterior levees, which placed fill into sections of the former ditch system and tidal channels.

3. SWEENEY constructed over 40% of the existing exterior levee inland of the location of the former eroded levee by placing fill on tidal marsh. Conditions Report at 3.

4. SWEENEY excavated approximately 68% of the existing ditch, interior of the newly constructed and rebuilt levee, inland of the location of the former ditch, which no longer existed due to erosion of the former levees or had become silted in, and SWEENEY used the excavated soil as a source of fill for constructing and rebuilding the exterior levee. Conditions Report at 4.

5. SWEENEY excavated two arc-like shaped ponds in late-2014, and had partially dug two more ponds. *Id.*

6. SWEENEY installed two 24-inch diameter steel pipe culverts in and across the new ditch system, over fill, on the eastern and western sides of the Site to allow passage over the ditch. Conditions Report at 3.

7. "Recent activities at the Island has [sic] resulted in the removal or coverage of vegetation." Conditions Report at 6. SWEENEY removed at least 4.74 acres of tidal marsh vegetation as a result of excavation or filling activities. Conditions Report at 6, 7.

8. SWEENEY disturbed tidal marsh vegetation at the Site by rotary mowing activities that commenced in 2012 and were conducted on the west, north, and southeastern portions of the island. SWEENEY also disturbed tidal marsh vegetation by moving track-mounted machines and rubber tired vehicles across the island. Conditions Report at 4.

JJ. Neither the Conditions Report nor the February 16, 2016 letter from SWEENEY's counsel contain any of the following information requested in BCDC in its August 18, 2015 letter: a biological Site assessment; documentation of cultivation of waterfowl food plants at the Site; and any reports submitted by Mr. Sweeney to the SRCD describing any actions which he had taken to implement the Annie Mason IMP.[1]

KK. On February 17, 2016, representatives of the Regional Board performed a boat survey with the Solano County Sheriff Marine Patrol around the perimeter of the Site and observed, among other things: (a) recent unauthorized grading on the east site of the Site that appeared to be maintenance or repair to the levee; and (b) placement of two mobile helicopter landing pads. In the Matter of the Inspection at Point Buckler Island, Affidavit for Inspection Warrant (of Benjamin Martin, Regional Board), dated February 19, 2016, at 11 (Affidavit for Inspection Warrant).

LL. On March 4, 2016, representatives of the Regional Board, escorted by the Solano County Sheriff's Department, inspected the Site pursuant to an Inspection Warrant issued by Solano County Superior Court. The inspection consisted of conducting: (a) a topographic survey of the Site; (b) a forensic wetland survey designed to identify and characterize the extent of wetlands and other waters of the State and current conditions at the Site; and (c) in situ water quality measurements. Affidavit for Inspection Warrant, at 5. During this Site inspection, Regional Board staff observed that SWEENEY had performed additional work since the October 21, 2015 Site inspection including: (a) three white flat-rack containers were newly installed around two green closed freight containers to create an enclosure; (b) four flat-rack containers (two red and two blue), painted with a yellow "H," were newly installed as two helicopter landing pads, one landing pad on the eastern side and one on the western side of the Site; (c) a green gate and posts were newly installed across the ditch crossing on the eastern side of the Site; and (d) tidal marsh vegetation was mowed throughout an approximately 1.5-acre area on the eastern side of the Site (this area had not been mowed on October 21, 2015). In addition, Regional Board staff observed that the water in the ditch was bright green in color, and notably different in color compared to the water in Suisun Bay, indicative of stagnant and eutrophic conditions, in contrast to observation during the October 21, 2015 Site inspection when the water in the ditch was greenish brown in color and not noticeably different in color in comparison to the water in Suisun Bay. Regional Board, Inspection Report (April 19, 2016), Exhibit A, at A-2 to A-3.

MM. On April 22, 2016, the Executive Director issued a Cease and Desist Order (EDCDO) directing SWEENEY to, among other things, a) cease and desist from i) placing any fill within, or making any substantial change in use of any area subject to tidal action, or

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[1] In his transmittal letter, SWEENEY's counsel asserted that the statutory exemption from the requirement to obtain a marsh development permit (Pub. Resources Code § 29501.5) turns on the existence of a certified IMP and suggested that it was irrelevant whether the Site was a managed wetland or a tidal marsh. However, as a component of SRCD's local protection program, an IMP may be prepared only for a "managed wetland in private ownership within the primary management area." Pub. Resources Code § 29412.5; SMMP at 23.

that was subject to tidal action before SWEENEY performed the unauthorized activities described in the Order, and ii) engaging in any activity on the Site constituting "development," as defined in the SMPA, without applying for and obtaining a permit under both the MPA and the SMPA, and b) apply for and obtain permits for all prior work at the Site for which such permits are required under either the MPA or the SMPA, or both, and c) apply for and obtain any and all permits under both the MPA and the SMPA prior to undertaking any future activities at the Site for which such permits are required, including but not limited to any productive use of the Site in which SWEENEY may wish to engage.

NN. On May 17, 2016, the Regional Board issued to Mr. Sweeney a) a Complaint for Administrative Civil Liability Complaint No. R2-2016-1008 seeking $4,600,000 in civil fines for violating i) San Francisco Bay Basin Water Quality Control Plan Discharge Prohibition No. 9 and Clean Water Act section 301 for unauthorized discharge of fill to waters of the State and United States on the Site, and ii) Clean Water Act Section 401 for failure to obtain a Water Quality Certification, and b) a tentative Clean Up and Abatement Order, which, if issued, would require Mr. Sweeney to restore the Site to its pre-development condition. The Board set a hearing on these actions for August 10, 2016.

OO. On May 23, 2016, counsel for SWEENEY informed BCDC staff that he had filed in Solano County Superior Court a Petition for a Writ of Mandate and Complaint for Injunctive Relief against BCDC and its Executive Director challenging the EDCDO. Although as of the date of issuance of this Violation Report the Petition and Complaint has not been served on the BCDC, the Petition and Complaint has been posted on the facebook page of the Pt. Buckler Club. See www.facebook.com/pt.bucklerclub VIP. The Petition and Complaint alleges, among other things that in issuing the EDCDO the Executive Director acted in excess of his legal authority, and asks for relief in the form of a judicial order invalidating the EDCDO.

VII. Provisions of law or Commission permit that the staff alleges has been violated:

Government Section 66632. Permit for Fill, Extraction of Materials or Substantial Change in Use of Land, Water or Structure; Application for Permits.

Any person wishing to place fill, to extract materials, or to make any substantial change in use of any water, land, or structure, within the area of the Commission's jurisdiction, including at the Site, is required to obtain a permit from the Commission.

Public Resources Code Sections 29500, 29501(a).

Any person wishing to perform or undertake any "development," as that term is broadly defined in Public Resources Code Section 29114(a), in the primary management area of the Suisun Marsh, including at the Site, is required to obtain a marsh development permit from the Commission.

VIII. If the staff is proposing that the Commission impose an administrative penalty as part of this enforcement proceeding, the amount of the proposed penalty:

Staff proposes a penalty of $952,000 under Section 66641.5(e) of the McAteer-Petris Act for the following violations:

Description	Violation(s)	Amount
Place fill in the Bay to close each of seven tidal breaches of remnant levees and cut off tidal action to the Site	Placement of fill; substantial change of use. Seven violations. [$2,000 per day per; duration over 1.5 years]	$210,000
Place fill in Bay to construct new levees around Site	Placement of fill [$2,000 per day per; duration over 1.5 years]	$30,000
Excavate ditch interior to levees around Site	Extraction of materials [$2,000 per day per; duration over 1.5 years]	$30,000
Install replacement dock on eastern portion of Site; install additional, larger dock	Placement of fill. Two violations. [$1,500 per day); duration over 2 years.]	$60,000
Excavate each of four crescent ponds in interior of Site; place excavated fill adjacent to each pond	Excavation of materials; substantial change of use; placement of fill. Four violations. [$1,500 per day; duration over 1 year.]	$120,000
Place fill in Bay to construct road to support vehicles in northwestern portion of Site	Placement of fill; substantial change of use. [$2,000 per day; duration over 1 year.]	$30,000
Place fill in Bay to construct road to support vehicles across the entire Site	Placement of fill; substantial change of use. [$2,000 per day; duration over 1 year.]	$30,000
Placing fill in Bay to construct two land bridges over culverts installed interior ditch on east and west sides of site	Placement of fill; substantial change of use. Two violations. [$1,000 per day; duration over 1 year.]	$60,000
Remove one of the former water control structures at the Site	Substantial change of use. [$2,000 per day; duration over one year.]	$30,000
Install new water control structure in western portion of Site	Placement of fill. [$500 per day; duration over seven months (discovered during 10/21/15 site visit)]	$30,000

Description	Violation(s)	Amount
Removing, mowing, and/or destroying tidal marsh vegetation (for other than agricultural purposes) throughout Site	Substantial change in use. [Occurred at various times; documented on 10/21/15 Site inspection, in Conditions Report; and on 3/4/16/ Site inspection. $500 per day; duration no less than 2-7 months.]	$30,000
Developing and using Site for water-oriented recreational activities including but not limited to kiting	Substantial change in use. [$500 per day; duration approximately two years.]	$30,000
Placing mobile army trailers and storage containers on the Site	Placement of fill; substantial change of use. Five containers documented on 11/14/14 Site inspection. Five violations. [$100 per day; duration over 1.5 years.] Two additional storage containers documented on 10/21/15 Site inspection. Two violations. [$100 per day; duration at least seven months, or 210 days.] Three wind-break platforms documented in 2/10/16 aerial photo. Three violations. [$100 per day; duration at least 100 days.]	$150,000 (for five violations documented 11/14/14). $42,000 (for two additional violations documented 10/21/15). $30,000 (for three additional violations documented 2/10/16).
Installation of four flat-rack containers as two helicopter landing pads	Placement of fill; substantial change of use. Two violations. [$200 per day; duration at least 100 days.]	$40,000
Total Proposed Penalty		$952,000

IX. Any other statement or information that the staff believes is either pertinent to the alleged violation or important to a full understanding of the alleged violations:

- As of the date of issuance of this Report/Complaint, the alleged violations are ongoing, and SWEENEY has made no effort to settle or resolve the violations.
- Mr. Sweeney may argue that it was his understanding the work he performed at the Site was authorized by the Annie Mason IMP and, therefore, he assumed he was not required to obtain a permit from BCDC. However, as documented in Paragraphs VI.P, VI.R, and VI.U, above, prior to obtaining a copy of the Anne Mason IMP from BCDC in November 2014, Mr. Sweeney had already completed levee construction and rebuilding and ditch excavation activities around the entire Site, closing all seven of the pre-existing tidal breaches, and had also conducted substantial additional unauthorized development activities at the Site.
- SWEENEY continued to perform unauthorized work at the Site after receiving BCDC's letter dated January 30, 2015 directing that SWEENEY stop work, as documented in Paragraphs VI.Y, VI.EE, VI.HH, VI.KK, and VI.LL, above.

X. List of staff exhibits:

Exhibit A: Index of Administrative Record (¶VI, second paragraph)
Exhibit B: Declaration of Steven Chappell, dated April 21, 2016. (¶ VI.B)
Exhibit C: Aerial photograph dated April 2011 (¶ VI.M)
Exhibit D: Aerial photograph dated February 10, 2016 (¶ VI.GG)

Point Buckler Club, LLC Violation Report (ER2012.038)
Index of Administrative Record

Document Description	Date
Suisun Marsh Protection Plan	Dec-76
Suisun Marsh Management Program	Sep-80
Annie Mason Point Club Management Plan	11/15/84
Annie Mason Point Club Management Plan and Supplemental Materials	11/15/1984 - 1/29/1990
Letter from SRCD to Mr. James Taylor re: DWR Pump Facility	9/13/88
Application for BCDC Marsh Development Permit	9/18/89
BCDC Response to Application for BCDC Marsh Development Permit	10/12/89
SRCD Wetlands Maintenance Management Report	1/29/90
Department of the Army, Regional General Permit 3	7/8/13
Email from Mr. John Sweeney to Jim Starr, CDFW	11/19/14
BCDC Letter to Mr. John Sweeney re: Point Buckler Island Unauthorized Project, Suisun Marsh	1/30/15
Letter from Miller Starr Regalia to BCDC re: Point Buckler, LLC; Performance of Maintenance Activities Purusuant to Annie Mason Point Club Individual Management Plan, Club No. 801	3/25/15
BCDC Letter to Miller Starr Regalia re: Point Buckler Island Unauthorized Project, Suisun Marsh	5/7/15
Regional Board Notice to BCDC and other agencies re: Potential Violation for Unauthorized Diking of Suisun Tidal Marsh at Point Buckler Island	7/21/15
Regional Board Letter to Mr. John Sweeney re: Notice of Violation for Filling Waters of the United States and State, Point Buckler Island in the Suisun Marsh, Solano County	7/28/15
BCDC Letter to Miller Starr Regalia re: Point Buckler Island (BCDC Enforcement File No. ER2012.038)	8/18/15
Regional Board to Mr. John Sweeney re: Cleanup and Abatement Order No. R2-2015-0038 for Unauthorized Levee Construction Activities at Point Buckler Island in the Suisun Marsh, Solano County	9/11/15
Letter from Briscoe Ivester and Bazel, LLPto BCDC re: Notice of Replacement of Counsel	10/12/15
Applied Water Resources, Conditions Report at Point Buckler, Response to Cleanup and Abatement Order R2-2015-0038	10/16/15

EXHIBIT A

Document Description	Date
BCDC Letter to Briscoe Ivester and Bazel re: Point Buckler Island; BCDC Enforcement File No. ER2012.038 (Pt. Buckler, LLC; John Sweeney, Principal)	12/17/15
Declaration of John D. Sweeney in Support of Ex Parte Application	12/28/15
Regional Board Letter to Mr. John Sweeney re: Recission of Cleanup and Abatement Order No. R2-2015-0038 for Point Buckler Island, LLC	1/5/16
Letter from Briscoe Ivester and Bazel, LLP to BCDC re: Point Buckler Island; BCDC Enforcement File No. ER2012.038	2/16/16
In the Matter of the Inspection at Point Buckler Island, Affadavit for Inspection Warrant	2/19/16
Solano County Inspection Warrant	2/19/16
Regional Board Inspection Report	2/19/16
Declaration of Steven Chappell	4/21/16
Grant Deed	7/27/04
Grant Deed	4/19/11
Grant Deed	10/27/14
Business Entity Detail for Point Buckler Club, LLC Showing Sweeney As Registered Agent	2/19/16
Property Detail Report for Point Buckler Club, LLC	3/7/16
Screenshot of Point Buckler Website	
Screenshot of Point Buckler Facebook Page	
Point Buckler Technical Assessment Report of Current Conditions and Historic Reconstruction Since 1985	5/12/16
BCDC Executive Director Cease and Desist Order	5/22/16
Regional Board Complaint for Administrative Civil Liability Complaint No. R2-2016-1008	5/17/16
Aerial Photos or Google Earth Images	4/30/1985, 7/14/1988, 8/18/1988, 6/13/1990, 5/28/1991, 8/23/1993, Summer 2003, Summer 2003 (annotated), 10/20/2003, Summer 2006, April 2011, April 2011 (annotated),9/1/2011, 5/19/2012, 2/3/2014, 3/24/2014, 5/22/2014, 8/6/2014, 10/29/2014, 1/29/2015, 4/1/2015, 2/10/2016

DECLARATION OF STEVEN CHAPPELL

I, Steven Chappell, declare as follows:

1. I am the Executive Director of the Suisun Resource Conservation District ("SRCD"). I have been employed by the SRCD since 1994 and have held the position of Executive Director since 1998.

2. The Suisun Soil Conservation District ("SSCD") was originally created in 1963. In 1971 the SSCD became the SRCD under the expanded powers of Division 9 of the Public Resource Code ("PRC").

3. In1974, the Legislature enacted the Nejedly-Bagley-Z'berg Suisun Marsh Preservation Act of 1974 which required the San Francisco Bay Conservation and Development Commission ("BCDC") to prepare and submit to the Governor and Legislature on or before December 1, 1976, a Suisun Marsh Protection Plan ("SMPP").

4. In December, 1976, the BCDC, in collaboration with the California Dept. of Fish and Wildlife, issued the SMPP, as defined in Section 29113(a) of the Suisun Marsh Preservation Act (PRC §§ 29000 – 29612; "SMPA"). In Part III, "Regulation Recommendations: 2. Water Management District," the SMPP recommended that the SRCD should be empowered to "regulate water management practices at managed wetlands controlled by privately-owned duck clubs." Thereafter, in 1977, the Legislature empowered the SRCD to fulfill this responsibility through the enactment of PRC Sections 9960-9963 as part of the same law (Ch. 1155) that enacted the SMPA. PRC § 9962(a) states that the SRCD "shall have primary local responsibility for regulating and improving water management practices on privately owned lands within the PMA of the Suisun Marsh in conformity with [the SMPA] and the SMPP."

5. The area over which the SRCD exercises its statutory responsibility encompasses 115,000 acres in the Suisun Marsh, as that term is defined in Section 29101 of the SMPA, which is comprised of approximately of 52,000 acres of managed wetlands, 6,000 acres of unmanaged tidal wetlands, 30,000 acres of bays and sloughs, and 27,000 acres of upland grasslands.

6. In Part II, "Findings and Policies: Environment" Finding 4 and "Land Use and Marsh Management" Finding 1 of the SMPP states that: "Tidal marsh is an important habitat for many wildlife species, including the endangered salt marsh harvest mouse and the Suisun shrew. Tidal marshes also contribute to the maintenance of water quality in the SF Bay." "Land Use and Marsh Management" Policy 3 of the SMPP states that: "The tidal marshes in the PMA should be preserved."

Exhibit B

7. Section 29401(d) of the SMPA requires the SRCD to prepare, as a component of the "Local Protection Program" ("LPP") mandated by the SMPA, "a management program...designed to preserve, protect, and enhance the plant and wildlife communities within the PMA of the [Suisun] marsh, including...enforceable standards for diking, flooding, draining, filling, and dredging of sloughs, managed wetlands, and marshes." The SRCD prepared the Suisun Marsh Management Program ("SMMP") to carry out this directive. The SMMP consists of the following principal elements: (1) a general management program; (2) pursuant to section 29412.5 of the SMPA, individual water management programs ("IMPs") for each privately owned "managed wetland" within the PMA of the Suisun Marsh; (3) pursuant to section 29401(d) of the SMPA, enforceable standards covering diking, flooding, draining, filling and dredging of tidal waters, managed wetlands and tidal marsh wthin the primary management area; and (4) pursuant to section 9962(b) of the PRC, regulations adopted by SRCD to ensure effective water management on privately owned lands within the PMA. Pursuant to Section 29415 of the SMPA, in 1980 the BCDC certified the SMMP as consistent with the provisions of the SMPA and the SMPP. The SMMP notes at Section II.C.1 of Part 1 that "the policies of the SMPP prohibit future conversion of tidal marsh or open water areas to managed wetland or agricultural status."

8. In Exhibit C ("Standards Covering Diking, Flooding, Draining, Filling and Dredging of Tidal Waters, Managed Wetlands, and Tidal Marsh"), Section III ("Purpose"), the SMMP states that one of the principal goals of the standards set forth in Ex. C is "minimizing activities in tidal marshes and waters." The standards contained in Ex. C, Section VI ("Specific Principals and Standards") for the activities specified in the title of Ex. C vary depending on the location of the activity in either A) tidal waters, B) managed wetlands, or C) tidal marshes.

9. In Section II of Ex. C the SMMP defines the term "managed wetland" to mean "leveed areas...in which water inflow and outflow is artificially controlled, or in which waterfowl food plants are cultivated, or both, to enhance habitat conditions for waterfowl and other water-associated birds and wildlife." As such, the SMMP's definition of the term "managed wetland" is substantially identical to the definition of that term that is contained in Section 29105 of the SMPA. This same section of Ex. C of the SMMP defines the term "tidal marsh" to mean "vegetated areas...which are subject to daily tidal action."

10. In Section II.C.1 ("Individual Management Programs: Program Financing: Capital Improvements") of Part 2 ("Implementation"), the SMMP notes that "the adequacy of the water management facilities on the individual private ownerships varies tremendously." The SMMP further observes that: "it is evident that a substantial number of improvements are still necessary before all ownerships have adequate facilities."

11. The Soil Conservation Service ("SCS") of the US Dept. of Agriculture prepared an IMP for each of the privately owned managed wetlands in the Suisun Marsh. One of the "managed wetlands" for which the SCS prepared an IMP is the Annie Mason Point Club ("AMPC"), Club #801. The AMPC is located on Pt. Buckler Island ("the Site"), which is located within the PMA of the Suisun Marsh off the western tip of Simmons Island. In a Section entitled "Club Improvements: Water Management: Needed Improvements, the AMPC IMP emphasizes that: "Proper water control necessitates inspection and maintenance of levees, ditches, and water control structures" and "Levees require frequent inspection and attention to prevent major breaks from occurring."

12. In a "Plan of Protection for the Suisun Marsh" ("POP") completed in February, 1984, by the Cal. Dept. of Water Resources ("CDWR"), the CDWR states, at p. 103, in connection with a proposal for the CDWR to provide a water pump to the AMPC, that: "Levees about Annie Mason Island are not now in good repair. The pumping equipment will be...installed when the landowner has improved the island's levee system to provide adequate protection of the island." Additionally, on September 13th, 1988, the SRCD sent James Taylor, the AMPC landowner at the time, a letter noting that "one of the conditions of this installation [of a pump facility by CDWR] is that your exterior levee system be intact and up to standards." The letter requested information, "if the requisite work (levee repairs) has been done, and if not, when completion can be expected." The landowner never responded to this SRCD inquiry and to SRCD's knowledge, CDWR has never installed this pump due to the failure of the AMPC exterior levee integrity and the landowner's continued inability to artificially control the inflow and outflow of water at AMPC.

13. Notwithstanding the foregoing findings by the CDWR, the AMPC IMP in the "Summary" section contains a "report" by the "club" that "it now has the water control structures and tight levees necessary for proper water management."

14. On January 29, 1990, a "Wetlands Maintenance Management Report" was prepared which identified 11 locations along approximately 2,450 linear feet of the levee protecting the Site as being in need of interior and exterior repair work. There is no evidence that this needed repair work was ever completed or even undertaken

15. Since 1977 and thus at all times subsequent to the initial certification of the AMPC IMP by the BCDC in 1984, all owners of land within the Suisun Marsh, including but not limited to the Site, have been subject to additional regulatory requirements imposed by the US Army Corps of Engineers ("USACE") under the Clean Water Act and the Rivers and Harbors Act of 1899. These requirements and permitted scope of work defined as a set of discrete authorized maintenance activities have been set forth in a series of Regional General Permit 3's ("RGP3"). The RGP3's authorize the SRCD as co-permittee to "represent" Suisun Marsh landowners with respect to managed wetlands maintenance activities that said

landowners have undertaken or desire to undertake in the Suisun Marsh. During brief periods of time during which a RGP3 has not been in effect the SRCD has performed a similar function under an applicable USACE Nationwide Permit. The RGP3 has typically been issued serially by the USACE for successive 5 year terms. The RGP3 currently in effect, dated July 8, 2013, regulates, among other things, "2) ACTIVITIES ON LEVEES: a. Repair of Interior and Exterior Levees...to repair damage from storms and to counteract subsidence of the levees." Previous versions of the RGP3 contained regulatory requirements of similar scope and content. Under Section 6, "PERMIT ADMINISTRATION," the RGP 3 requires landowners in the Suisun Marsh who intend to perform repair and other work activities that are regulated by the RGP3 to prepare and submit to the SRCD a report (called a "work request form") that describes the proposed activities. The RGP3 gives to the SRCD the responsibility to compile and forward to the USACE the reports that landowners submit to the SRCD, for USACE review and authorization.

16. Since 1994, the records of the SRCD reveal no reports for purposes of compliance with an RGP3 or other evidence of any action on the part of the owners of the Site to maintain the levees and other water control structures on the Site as called for by the AMPC IMP. Due to the complete absence for a period in excess of 20 years of any repair and maintenance work on the exterior levee on the AMPC it is my professional judgment that it is not physically possible for a levee subject to such a lengthy period of inactivity, neglect, and numerous storm damage flooding events to retain the ability to control the inflow and outflow of tidal waters into and from the area that the levee had been originally constructed to protect. As a consequence of this inaction, the levees on the Site were allowed to deteriorate to the point that, when Mr. Sweeney purchased the Site, they no longer controlled the inflow and outflow of tidal water from the Site. As a result the hydrological status of the Site since 1994 was not that of "managed wetland," but rather that of a "tidal marsh", as those terms are defined in Section II of Ex. C of the SMMP. Thus, the standards for "diking, flooding, draining, filling, and dredging" contained in Ex. C of the SMMP that were applicable to the AMPC were those for a "tidal marsh," not those for a "managed wetland."

17. On March 19, 2014, I accompanied Joe LaClair and Cody Aichele-Rothman of the BCDC on a tour of the Suisun Marsh, which included a number of private duck clubs located in the Suisun Marsh. One of the clubs we visited was Club #802 (Rich Island). The Site is located a short distance (approximately 100 yards) across the Annie Mason Slough from Club #802. While we were present on Club #802, I personally observed a significant amount of heavy machinery consisting of a crane, a bulldozer, and other machinery on the Site. I also observed on the Site a substantial amount of landform alteration, i.e., excavation and redeposit of excavated material. The work appeared to have as its purpose the construction of a new exterior levee on the Site. Other nearby landowners had reported this activity to the SRCD, but it came as a surprise to me because, as stated above in

paragraph 15 and 16, any work of this nature on a site that met the definition of a "tidal marsh" in the SMMP was clearly subject to the requirements of the USACE, RWQCB, and BCDC permitting authority. Based upon my own personal knowledge that there had been no such permit authorization or request under the RGP3, nor could it have been authorizable by the USACE, for the construction activity we observed on the Site on March 19.

18. In Section VI.C.1 ("Specific Principles and Standards: Tidal Marshes: Diking") of Ex. C, the SMMP prohibits "diking of tidal marsh areas except in conformance with the findings of the SMPP and the provisions of a certified IMP...." Similarly, Section VI.C.2 ("Specific Principles and Standards: Tidal Marshes: Flooding and Draining") of Ex. C of the SMPP requires that "activities that would affect the natural daily flooding and draining of existing tidal marshes...be undertaken only in conformance with the findings of the SMPP and the provisions of a certified IMP...."

19. As noted above in Paragraph 11 of this declaration, the AMPC IMP authorizes the "inspection and maintenance" of existing levees on the AMPC property. It does not authorize the construction of any new levee to replace any levee that may previously have existed on the Site but which has functionally ceased to exist as a result of neglect and lack of attention. Thus the work Mr. Sweeney has performed in the form of new exterior levee construction is not authorized by, or in conformity with, the provisions of the certified AMPC IMP. Most notably, the AMPC IMP does not authorize any improvements or other work to occur in any area of the Site that meets the definition of a "tidal marsh," as that term is defined in Section II of Ex. C of the SMMP.

20. Accordingly, the construction by Mr. Sweeney of a new perimeter exterior levee on the Site in 2014 was inconsistent with both the findings of the SMPP (as quoted above in Paragraph 6 of this declaration) and with the provisions of the AMPC IMP.

21. Under Ex. C of the SMMP if the "diking of tidal marsh areas" or the obstruction of "the natural daily flooding and draining of existing tidal marshes" that are not "in conformance with [either] the findings of the SMPP [or] the provisions of a certified IMP" are only allowed if such activities occur "with the permission of the appropriate permitting authorities" such as the BCDC.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is signed at Solano, CA on April 21, 2016.

Steven Chappell

Steven Chappell

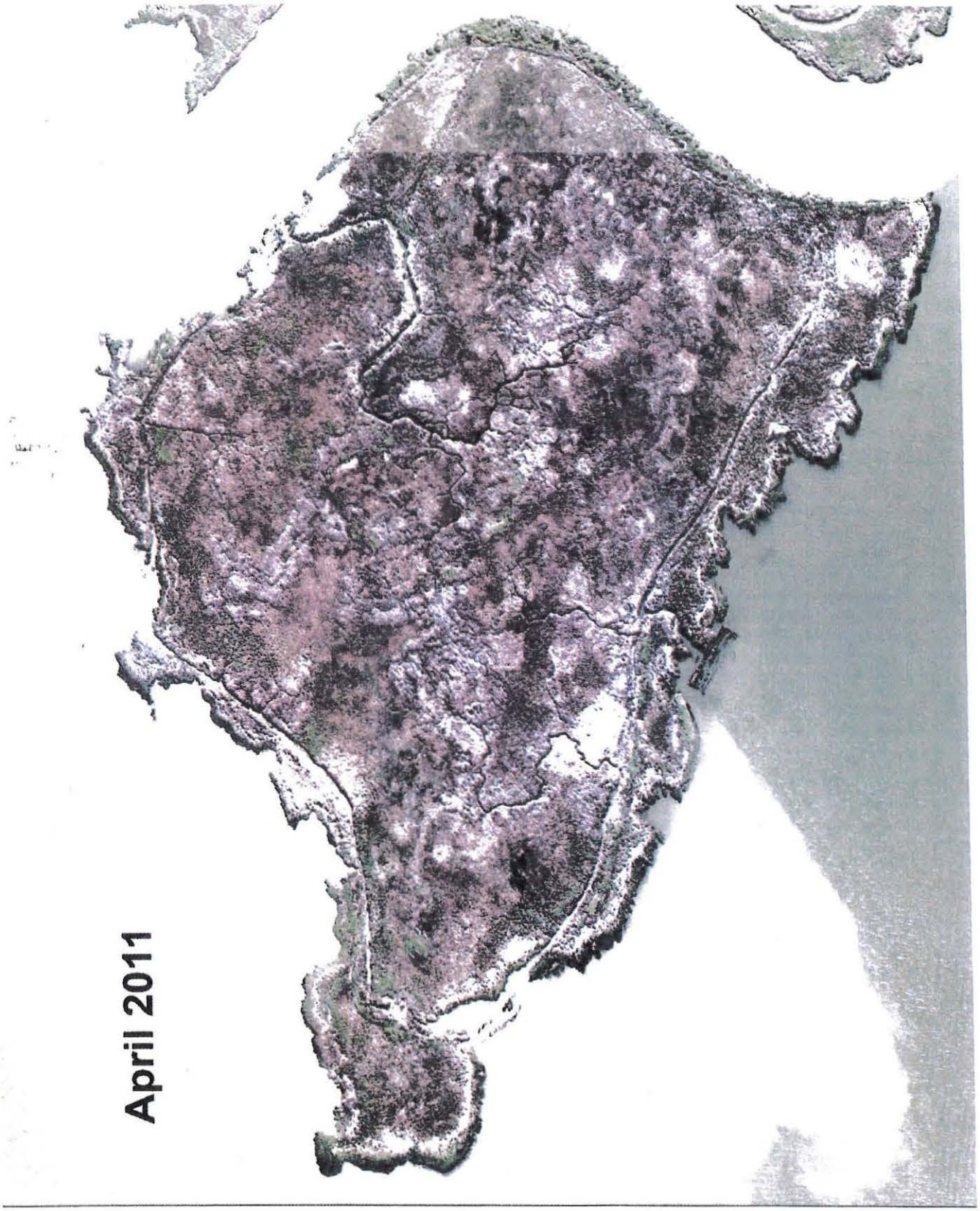


EXHIBIT C

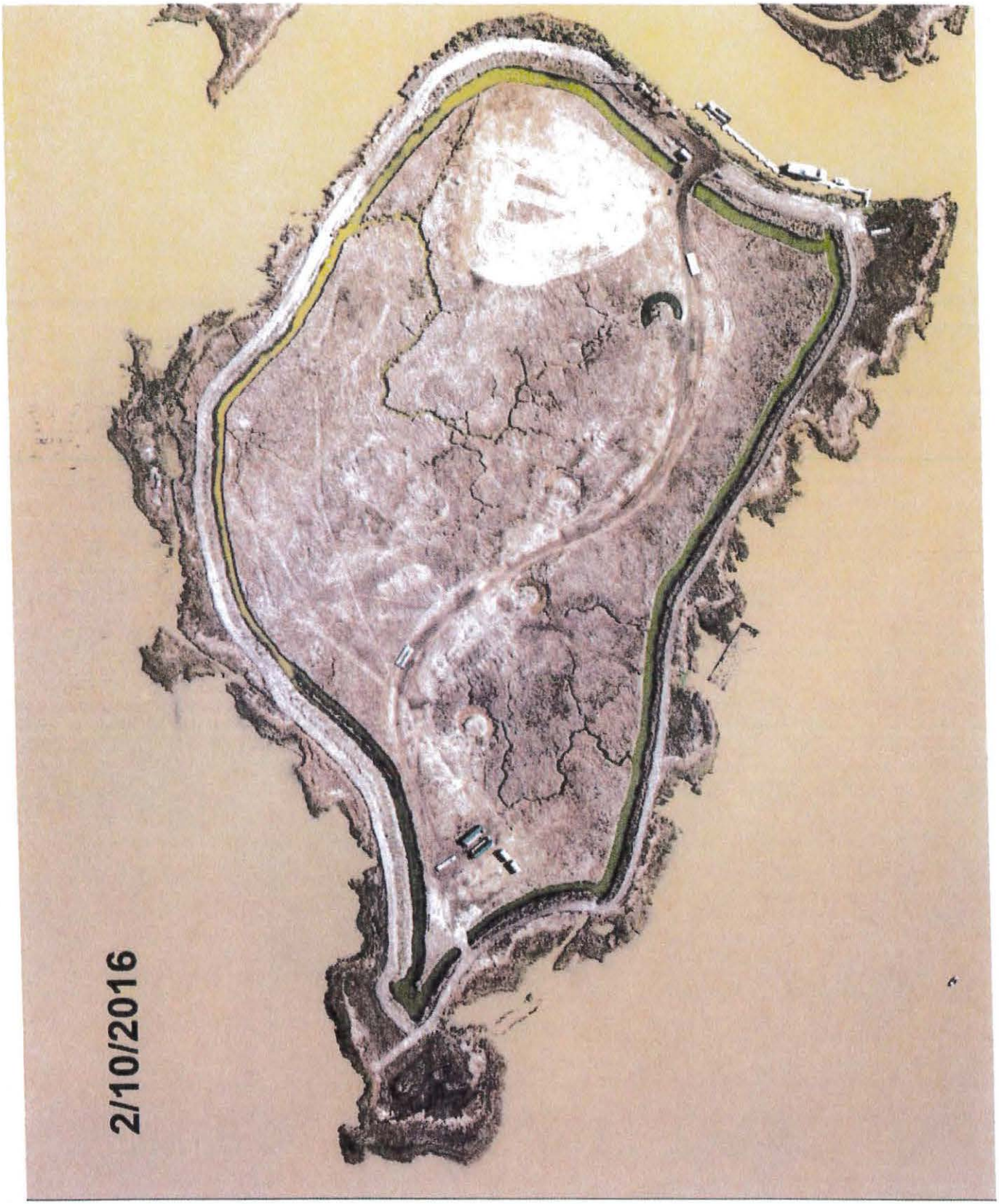


EXHIBIT D

Tentative Cleanup and Abatement Order

John D. Sweeny and
Point Buckler Club, LLC

Description of Exhibit Provided by Hard Copy and Electronically
(Water Board)

Exhibit 27

"Collaborative Work With Duck Club Owners and Manager to Improve Water Quality in Suisun Marsh" Water Board Memo to File, July 19, 2016

To: Memo to Point Buckler File

FROM: Keith Lichten
Division Chief
Watershed Management Division

DATE: July 19, 2016

SUBJECT: **COLLABORATIVE WORK WITH DUCK CLUB OWNERS AND MANAGERS TO IMPROVE WATER QUALITY IN SUISUN MARSH**

In recent years the Water Board has worked collaboratively with Suisun Marsh duck club owners and managers to facilitate their clubs' maintenance and ongoing operations. This work has included the issuance of Clean Water Act section 401 Water Quality Certifications for duck club maintenance, and work on the Suisun Marsh multi-pollutant TMDL, including support for grant funds to help improve duck club water management activities.

The Suisun Marsh is currently on the Clean Water Act section 303(d) list for impairment by mercury (Hg), nutrients, and organic enrichment/low dissolved oxygen. Water Board staff is developing a regulatory action, the Suisun Marsh multi-pollutant TMDL, that focuses on preventing adverse impacts to fish and aquatic life in Marsh sloughs. Water Board staff recognizes that the TMDL's implementation actions may affect current water management practices at some duck clubs in Suisun Marsh.

Water Board staff works closely with duck club owners, representatives of the Suisun Resource Conservation District (SRCD), and other water resources agencies to promote early TMDL implementation actions to improve water quality in the region. The main goal of working with the landowners is to encourage their collaboration on the TMDL, ensure that they are aware of potential requirements, and convey opportunities to participate in crafting water quality improvement best management practices (BMPs) that are most effective and easy to implement. Over the past three years the SRCD worked with many duck clubs to improve water mixing and timing of discharges during the fall floodup in the key areas in the northwest marsh to reduce stress on the environment. The improvements in vegetation management at duck club properties and staggering of discharges to smaller sloughs have already resulted in noticeable shortening of periods when critically low dissolved oxygen concentrations occur.

Through a collaborative effort between the SRCD, participating private landowners, Department of Fish and Wildlife, Fairfield-Suisun Wastewater Treatment District, Delta Conservancy and others, Water Board helped secure funding to address low dissolved oxygen and methylmercury issues in Suisun Marsh. The grant, awarded by the U.S. EPA S.F. Bay Water Quality Improvement Fund in 2015, focuses on field

implementation with the direct goal of supporting attainment of the TMDL objectives as well as helping us better understand the extent and nature of water quality impairment throughout the marsh. Continued stakeholder outreach and collaboration is a key component for a long-term success in attaining the TMDL objectives and improving Suisun Marsh water quality.

Finally, through the Water Board's regular review and issuance of Water Quality Certifications, we have facilitated continued duck club operation and maintenance. Examples include our 2013 certification of the U.S. Army Corps of Engineers' Regional General Permit #3 for duck club maintenance activities, and 2015 certification of the Department of Water Resources' Roaring River Distribution System fish screen sediment removal project.

Tentative Cleanup and Abatement Order

John D. Sweeny and
Point Buckler Club, LLC

Description of Exhibit Provided by Hard Copy and Electronically
(Department of Water Resources)

Exhibit 28

Annie Mason Unit Regulatory History, January 20, 2016

Annie Mason Unit Regulatory History
Compiled by Kristin Garrison, DWR Suisun Marsh Program
1/20/2016

Purpose of Annie Mason Unit: Annie Mason Island would be supplied by a diesel pump that would pump from Grizzly Bay at low tide, The pump would operate when water quality on the island required improvement from October through April. The Plan of Protection indicates that a gate would also be installed to connect the pump to the existing distribution system.

Status: Not completed

Explanation for Non-completion: The pump would not be effective without the levees being intact. Several documents and other sources, as listed below, indicate a long history of the levees being in disrepair.

- 1984 Suisun Marsh Plan of Protection including Environmental Impact Report: "Levees about Annie Mason Island are not now in good repair. The pumping equipment will be built and installed when the landowner has improved the island's levee system to provide adequate protection of the island."
- 1987 Suisun Marsh Preservation Agreement: "...work on Annie Mason Island shall not begin until the Exterior Levees of the Island are intact."
- 1988 Amendment 1 to the SMPA (letter dated 10/14/1988): "Annie Mason Island has not completed the prerequisite repair work on exterior levees and, therefore, construction and installation of the pump and supply lines at that site would be premature."
- 2002 October 7 SMPA Coordinators Meeting: It was agreed that it was unlikely that the levees would ever be repaired, but to include Annie Mason Unit in the RSMPA.
- 2005 Revised SMPA: "DWR shall construct the Annie Mason Island Unit by the end of the second construction season following repairs of the Exterior Levees that are mutually agreeably by the Parties to the Revised SMPA."
- 2014 March version of SMPA 2015: Annie Mason Unit deleted from document because the breach in the exterior levees had not been fixed
- Google Earth images indicate that the property's levees were in disrepair and that the property was tidally influenced since July of 1988, which is the earliest image available (recently repaired sometime between 8/2014 and 4/2015 according to these images)

Regulatory Documents:

- Not included in the State Water Resources Control Board Water Rights Decisions 1485 or 1641
- Not included in 1981 Suisun Marsh Management Plan (essentially the Biological Assessment)
- Not included in 1981 Section 7 determination for the Suisun Marsh Management Study (the Biological Opinion)
- Included in the Suisun Marsh Plan of Protection (pump and gate)
- Included in the Suisun Marsh Preservation Agreement (pump and connection to existing distribution system)
- Included in Amendment 1 to the SMPA (pump and supply lines)
- Not included in Amendment 2 to the SMPA (letter dated 3/28/1994)
- Not included in SMPA Amendment 3 draft version dated 6/20/1998 or the corresponding October 1999 BA
- Not included in the SMPA Amendment 3 Environmental Assessment/Initial Study
- Not included in Amendment 2B version dated 3/1/2003
- Included in RSMPA
- Not included in SMPA 2015

Tentative Cleanup and Abatement Order

John D. Sweeny and
Point Buckler Club, LLC

Description of Exhibit Provided by Hard Copy and Electronically (Facebook)

Exhibit 29

Clubhouse Ready for Summer, Facebook Post, April 19, 2016

Point Buckler Club added 13 new photos — at Point Buckler Club.

17 hrs · Suisun City ·

Point Buckler ready for summer! Going for the Sunset Magazine look circa 1960s. Kite with Us:)

Like Comment Share

10

1 share

APRÈS-KITE KOCKTAILS
HAPPY HOUR ALWAYS
Buzz Balls
~Tequila~

POINT BUCKLER
CLUB

TOILET
TURN HANDLE
1X
CLOCKWISE
SELF = GREEN
COMPOSTING
THANKS!

Tentative Cleanup and Abatement Order

John D. Sweeny and
Point Buckler Club, LLC

Description of Exhibit Provided by Hard Copy and Electronically
(Factual Rebuttal Exhibits)

Exhibit 30

30a. February 17, 2016, boat survey photographs with February 10, 2016, Point Buckler Island aerial photograph

30b. Photographs of heavy equipment on marsh from W. Mike Frost Construction, Inc. webpage

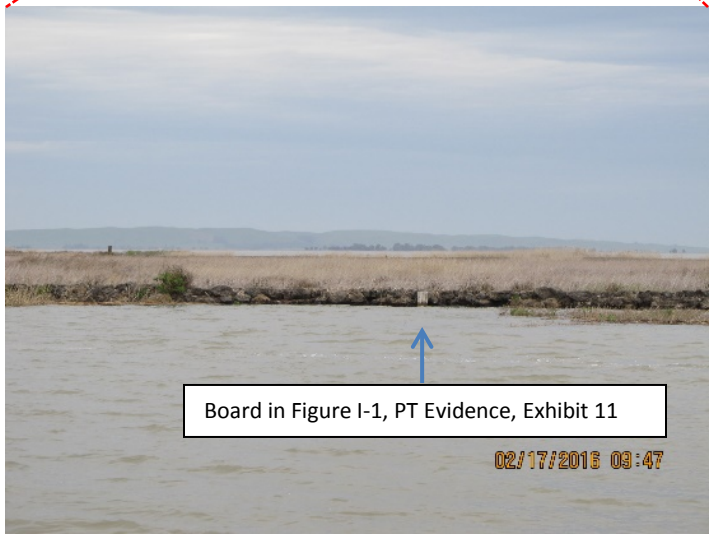
30a. February 17, 2016, boat survey photographs with February 10, 2016, Point Buckler Island aerial photograph

Exhibit 30a

Aerial Photograph, Figure D-36,
PT Evidence, Exhibit 11

Photograph 1

The Prosecution Team took photographs on February 17, 2016, during a boat survey around Point Buckler Island. Water surrounding the island on this day at close to high tide was up against the levee and covering the tidal marsh area in front of it, including the location of a white wrack or debris line. The approximate view of the Island is shown relative to the February 10, 2016, aerial photograph of Point Buckler Island using dashed lines. Trailers marked Pt Buckler provide a reference point in Photograph 1, and the board identified in the Expert Report is identified in Photograph 2.



Photograph 2

30b. Photographs of heavy equipment on marsh from W. Mike Frost Construction, Inc. webpage

Exhibit 30b

W. Mike Frost Construction, Inc.
Suisun Marsh - Grizzly Island
Sacramento - San Joaquin Delta

W. Mike Frost Construction is the oldest dirt working contractor in the Suisun Marsh area. We specialize in Draglines, Long Reach Excavators, Low Ground Pressure Dozers, Cranes and anything Duck Club related. Mike Frost is the third generation to run the business based from the Frost Ranch on Grizzly Island in Suisun. We can service all Reclamation Districts.

We can replace or repair your floodgates, clean ditches, fix levees, disc fields and repair or replace docks. We own a host of heavy equipment and can tackle any job quickly and cost effectively. We have recently added a Landing Craft to our business which allows us to bring materials and equipment to remote locations in the Suisun Marsh or anywhere in the Delta.

Our other specialty is consulting on future mitigation projects with soil analysis and site construction planning.

We can handle any size project and also can mobilize anytime to fix your levee or flood gate issues.

Call Mike Frost at (707)249-7802 for a quote today or email mike@wmfrostconstruction.com

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Images of the homepage of the W. Mike Frost Construction, Inc. webpage. The home page includes the following statements: (1) “W. Mike Frost Construction is the oldest dirt working contractor in the Suisun Marsh area;” (2) “We own a host of heavy equipment and can tackle any job quickly and cost effectively;” and (3) “We can handle any size project…”

Exhibit 30b

Photograph 1
Photograph from W. Mike Frost Construction website showing the use of a carrier to transport and provide a platform for an excavator working in a marsh.

Exhibit 30b

Photograph 2 Photograph from W. Mike Frost Construction website showing an excavator working on a marsh.	**Photograph 3** Photograph from W. Mike Frost Construction website showing an excavator working in a marsh from a pad of excavated spoils.

Tentative Cleanup and Abatement Order

John D. Sweeny and
Point Buckler Club, LLC

Description of Exhibit Provided by Reference
(SRCD)

Exhibit 31

The Suisun Marsh Management Program
http://www.waterboards.ca.gov/sanfranciscobay/water_issues/hot_topics/PointBuckler/references/SuisunMarshManagementProgram.pdf