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IN UNITED STATES DISTRICT COURT

FOR NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO BAYKEEPER; SAVE THE BAY; COMMITTEE FOR GREEN FOOTHILLS; and CITIZENS' COMMITTEE TO COMPLETE THE REFUGE, Plaintiffs, v. **U.S. ENVIRONMENTAL PROTECTION AGENCY, and ANDREW R. WHEELER,** in his official capacity as Administrator of the U.S. Environmental Protection Agency**,** Defendants.	CASE NO. **COMPLAINT FOR:** **DECLARATORY RELIEF and INJUNCTIVE RELIEF**

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I. INTRODUCTION

1. The San Francisco Bay is an iconic body of water, central to the Bay Area's landscape, economy, and communities. The San Francisco Bay and its tributaries support complex and interconnected ecosystems that, if protected, will help the surrounding area be resilient to climate impacts. Wetlands and marshes along the shoreline are necessary to protect communities from sea level rise and storm surges, help reduce pollution in the San Francisco Bay, and provide habitat for fish, birds, and other wildlife. More than 90 percent of the San Francisco Bay's wetlands has been destroyed, and the site at issue is one of the last remaining undeveloped areas along the San Francisco Bay's shorelines.

2. In 1972, Congress passed the Federal Water Pollution Control Act, 33 U.S.C. § 1251 *et seq*., more commonly known as the Clean Water Act, to restore and maintain the quality and functions of the Nation's waters. The Act authorizes federal agencies, states, and tribes to regulate jurisdictional "waters of the United States" in order to protect our waters from degradation. The Clean Water Act is essential for protecting waters like the San Francisco Bay from harmful pollution for future generations.

3. Plaintiffs are regional public-interest environmental organizations with a combined membership of thousands of individuals who reside mostly in and around the Bay Area. On behalf of these members, Plaintiffs advocate for the protection of the San Francisco Bay, its tributaries, and for the communities, individuals, wildlife and plant life that rely on these waters for recreation and survival.

4. This is an action against the U.S. Environmental Protection Agency ("EPA") for unlawfully determining that the Redwood City Salt Ponds ("Salt Ponds" or "Site") are not within the jurisdiction of, or protected by, the Clean Water Act. The Salt Ponds consist of approximately 1,365 contiguous acres located in Redwood City, California.

5. On March 1, 2019, EPA issued an unlawful negative jurisdictional determination ("Negative JD") regarding the Salt Ponds in the south bay of San Francisco Bay. In the Negative JD, EPA determined the Site contains "no 'waters of the United States' for purposes of the Clean Water Act," effectively authorizing the pollution or destruction of the Site's waters.

6. EPA and the Army Corps of Engineers ("Corps") determine the extent of jurisdictional "waters of the United States" under the Clean Water Act and Rivers and Harbors Act of 1899 ("RHA"), 33 U.S.C. §§ 401 *et seq*., pursuant to a 1989 Memorandum of Agreement.

7. In March 2015, EPA designated the Salt Ponds as a "special case" pursuant that Memorandum making EPA, rather than the Corps, responsible for determining whether the Salt Ponds were jurisdictional under the Clean Water Act.

8. On November 21, 2016, the local Region 9 EPA division provided a detailed draft jurisdictional determination ("Region 9 Evaluation") recommending EPA find the majority of the Salt Ponds and surrounding area constitute waters of the United States. Attached hereto as Exhibit A is the November 21, 2016 Region 9 Evaluation.

9. In December 2016, then President-Elect Trump announced he would be appointing then Oklahoma Attorney General Scott Pruitt as head of EPA. In February 2017 the Senate confirmed Pruitt as EPA Administrator for the Trump Administration. Shortly thereafter, Mr. Pruitt took away local EPA offices' authority and ignored their input related to jurisdictional determinations and consolidated that power with the Administrator. Mr. Pruitt also allegedly told EPA staff economists to produce analyses that negated the economic benefit of protecting wetlands. In July 2018,Pruitt resigned. Defendant Andrew Wheeler, Pruitt's Deputy, assumed the role of Acting Administrator upon Mr. Pruitt's resignation and was later appointed by President Trump and confirmed by the Senate as EPA Administrator.

10. EPA has continued having the Administrator make jurisdictional determinations for "special cases." Wheeler and centralized EPA administrators have continued the policy of ignoring regional experts within EPA to narrow the definition of waters of the United States and eliminate environmental protections for historically protected and regulated waters. This includes the jurisdictional determination challenged here, wherein EPA officials in the Administrator's office ignored and overrode the local Region 9 expert findings about the Salt Ponds.

11. On March 1, 2019, EPA issued the Negative JD concluding that the Salt Ponds did not include waters of the United States but instead were non-jurisdictional fast land. Attached hereto as Exhibit B is the March 1, 2019 Negative JD. EPA ignored the detailed findings contained in the

Region 9 Evaluation and other facts and legal principles that show the Salt Ponds are waters of the United States.

12. In ignoring the heavily researched and detailed findings of the Region 9 Evaluation, the Trump Administration carried out yet another cut-back on essential environmental protections, preventing the Salt Ponds from being properly protected and restored as a valuable environmental and natural resource. Plaintiffs request that this Court reject EPA's complete abdication of its duty to regulate the Salt Ponds under the Clean Water Act.

Photo by Matt Leddy, member of Plaintiffs Citizens Committee to Complete the Refuge and Baykeeper, February 2, 2013, a gray fox on a levee road adjacent to Pond 10 at the Site, with roosting and feeding waterbirds in the inundated pond behind it, included in Exhibit A, p. 63.

13. EPA violated the Administrative Procedure Act, 5 U.S.C. § 551 *et seq*. ("APA") when it issued the Negative JD. Plaintiffs seek an order holding the Negative JD unlawful and setting it aside because it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law," 5 U.S.C. § 706(2)(A), along with declaratory and injunctive relief. Plaintiffs have no other adequate remedy at law.

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II. JURISDICTION AND VENUE

14. This Court has jurisdiction over the claims set forth herein pursuant to 5 U.S.C. § 702 (APA) and 28 U.S.C. § 1331 (federal question jurisdiction). The relief sought is authorized by 5 U.S.C. § 706(2).

15. Venue is proper in this District pursuant to 28 U.S.C. § 1391(e)(1)(A) because the Defendants are officers or agencies of the United States, and one or more Plaintiffs reside in the District within the meaning of 28 U.S.C. § 1391(d).

16. Assignment to the San Francisco Division is appropriate because the property that is the subject of the action is situated in San Mateo County.

17. A map reproduced in the Region 9 Evaluation depicts the Site:

See Exhibit A, p. 4.

III. PARTIES

18. Plaintiff **San Francisco Baykeeper** ("Baykeeper") is a regional non-profit environmental organization incorporated under the laws of California in 1989, with its principal place

of business in Oakland, California. Baykeeper's mission is to defend the San Francisco Bay from the biggest threats and hold polluters accountable through science, litigation, and advocacy. Core to the mission are the organization's long-standing campaigns to challenge activities that harm the San Francisco Bay, including industrial pollution, sewage overflows, unsustainable sand mining, and wetlands destruction. For more than 30 years, Baykeeper's successes have been focused on creating a San Francisco Bay where the water is clean, the ecosystem is healthy, recreation is safe, and wildlife thrives.

19. Plaintiff **Save The Bay** is a non-profit organization that protects and restores the San Francisco Bay for people and wildlife. Save The Bay's mission further seeks to keep the San Francisco Bay clean, free of pollutants, healthy, and leads initiatives to make the region sustainable for future generations.

20. Plaintiff **Committee for Green Foothills** is a non-profit organization that seeks to protect open space, farmland, and natural resources, including the San Francisco Bay waters and surrounding areas in San Mateo and Santa Clara Counties for the benefit of all through advocacy, education, and grassroots action. Committee for Green Foothills participates in local proposals, policies, and planning processes; serves on boards and advisory groups; and conducts thorough research to stay abreast of opportunities for, or threats to, open space and natural resource protection and expansion. Committee for Green Foothills often partners with other organizations to protect local landscapes.

21. Plaintiff **Citizens' Committee to Complete the Refuge** ("CCCR") has an ongoing history of interest in wetlands protection, wetlands restoration, and wetlands acquisition. CCCR is a non-profit organization that seeks to provide residents of the San Francisco Bay area a clean, healthy and sustainable San Francisco Bay. It was originally formed in 1965. Its senior members were part of a group of citizens who became alarmed at the degradation of the San Francisco Bay and its wetlands. CCCR recognizes that the Don Edwards San Francisco Bay National Wildlife Refuge can only exist within its surrounding natural resources and has a history of regulatory and other public participation, including under the Clean Water Act, to protect wetlands, plants, and wildlife in the San Francisco Bay. CCCR worked to establish the Refuge and again to increase the size of the

original Refuge boundaries. The 1990 Land Protection Plan identified baylands of significant conservation value for potential acquisition, including the Redwood City Salt Ponds. CCCR advocates for the protection and restoration of wetlands and other important San Francisco Bay wildlife habitats.

22. Plaintiffs are regional public-interest environmental non-profit organizations with a combined membership numbering thousands of members residing in and around the San Francisco Bay Area. On behalf of these members and the general public, Plaintiffs advocate for the protection of the San Francisco Bay and wetlands, and for the people, animals and plants that depend on clean water and a healthy San Francisco Bay ecosystem. EPA's willing abdication of its duty to protect and regulate those waters harms Plaintiffs and their members.

23. Plaintiffs bring this action on behalf of their members, many of whom regularly enjoy the San Francisco Bay and/or seek to protect its waters and the wildlife inhabiting the San Francisco Bay and adjacent areas. Defendants continuing failure to comply with the APA and federal laws and regulations relating to the protection of waters of the United States has harmed, and will continue to directly and substantially harm, the interests of Plaintiffs and their members' interests, hundreds of species of wildlife, and residents of the Bay Area. A decree vacating the Negative JD and finding the Salt Ponds to be waters of the United States will redress Plaintiffs' harms.

24. Each Plaintiff has one or more members who use, explore, and recreate in areas impacted by the Negative JD. Some of Plaintiffs' members will suffer recreational, aesthetic, or other environmental injuries due to the Agency's final action. Specifically, the Agency's approval of the Negative JD will exempt the Site from the federal water pollution regulation that is necessary to protect the San Francisco Bay's water quality. Plaintiffs' members use and enjoy the San Francisco Bay for recreational, scientific, and aesthetic purposes and would reasonably cease these activities, should the San Francisco Bay's water quality become too degraded. For these reasons, Plaintiffs are adversely affected and aggrieved by the Agency's action within the meaning of the APA. Plaintiffs' injuries-in-fact are fairly traceable to the Agency's conduct and would be redressed by the requested relief.

25. Plaintiffs' members have used the immediate areas surrounding the Salt Ponds for years for enjoyment of nature, recreation, athletics, and education. Members have sailed, canoed, and kayaked in the adjacent San Francisco Bay and Sloughs for decades. They have photographed birds and other wildlife at the Salt Ponds. They have led dozens of shoreline walks and interpretive programs immediately adjacent to the Salt Ponds. The members have been a part of habitat restoration programs, enlisting thousands of area residents and local students. They have celebrated Earth Day at adjacent lands and used the area to promote advocacy and environmental protection.

26. According to the San Francisco Bay Conservation and Development Commission's San Francisco Bay Plan, enforceable policies under the Coastal Zone Management Act, 16 U.S.C. § 1451, *et seq*., salt ponds help to moderate the Bay Area climate, prevent smog, and protect at risk areas from tidal flooding. Protection and restoration of the Site will benefit Bay water quality, protect San Francisco Bay, and mitigate the harm caused by sea level rise. The Negative JD makes it more likely that the Salt Ponds Site will be polluted, damaged, and developed, harming Plaintiffs' members' interests.

27. Due to the Negative JD, the Bay water quality will be significantly impacted, and the consequences of seal level rise will be exacerbated by lack of regulation. It risks destroying the habitats for the birds and other wildlife and destroying educational and recreational opportunities for the community and public. Wildlife will no longer be able to inhabit the area, and pollutants from lack of regulation will harm and eventually destroy the local ecosystem.

28. These injuries facing Plaintiffs and their members are a direct result of the Negative JD. This Court declaring that the Negative JD is contrary to the mandates of the Clean Water Act, and setting aside the Negative JD, will redress these harms.

29. Defendant **United States Environmental Protection Agency** is an agency of the United States government and has primary responsibility for administering the Clean Water Act. EPA issued the Negative JD for the Site on March 1, 2019.

30. Defendant **Andrew R. Wheeler** is the Administrator of EPA, acting in his official capacity. Then-Acting Administrator Wheeler approved and signed the Negative JD. In his role as EPA Administrator, Mr. Wheeler oversees EPA's implementation of the Clean Water Act.

IV. LEGAL BACKGROUND

A. The Administrative Procedure Act

31. APA section 702 provides a private cause of action to any person "suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action within the meaning of a relevant statute." 5 U.S.C. § 702.

32. The APA was originally conceived in 1946 to ensure federal agencies, such as EPA, do not exert unfettered power. The APA safeguards agency actions by requiring agencies to keep the public informed concerning their organization, procedures and rules; to provide the public opportunity to participate in the rulemaking process; to establish uniform standards for the conduct of formal rulemaking and adjudication; and to define the scope of judicial review.

33. Only final agency actions are reviewable under the APA. 5 U.S.C. § 704. Issuance of a Negative JD is a "final agency action" for APA purposes.

34. Under the APA, a court must "hold unlawful and set aside agency actions, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;" "in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;" or "without observance of procedure required by law." 5 U.S.C. § 706(2)(A), (C), (D).

35. EPA is required to comply with the APA. *See* 5 U.S.C. § 551.

36. The March 1, 2019 Negative JD concludes the administrative process, is a final agency action, and is subject to review under the APA. *See U.S. Army Corps of Engineers v. Hawkes Co., Inc.*, 136 S. Ct. 1807, 1811 (2016).

B. The Clean Water Act

37. The purpose of the Clean Water Act is to protect and restore "the Nation's waters." 33 U.S.C. § 1251(a). It establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.

38. In 1972 Congress adopted amendments to the Clean Water Act in an effort "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). The 1972 amendments established, among other things, a national goal "of eliminating all

discharges of pollutants into navigable waters by 1985" and an "interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and provides for recreation in and on the water . . . by 1983." *Id.* § 1251(a).

39. Clean Water Act section 301(a), 33 U.S.C. § 1311(a), prohibits the discharge of any pollutant by any person, unless such discharge complies with the terms of any applicable permits, and sections 301, 302, 306, 307, 318, 402, and 404 of the Act. 33 U.S.C. § 1311(a). National Pollutant Discharge Elimination System permits place limits on and require monitoring of discharges to help ensure the protection of jurisdictional waters.

40. "Discharge of a pollutant" means "any addition of any pollutant to navigable waters from any point source." *Id.* § 1362(12). "Navigable waters" are broadly defined as "the waters of the United States." *Id.* § 1362(7).

41. The Clean Water Act also prohibits the discharge of high-level radioactive waste or medical waste (§ 1311(f)), protects against pollution from oil and hazardous substances (§ 1321), and restricts sewage disposal (§ 1345).

42. The Corps and EPA are the federal agencies primarily responsible for implementing and enforcing the Clean Water Act. Under the Act, EPA has implemented pollution control programs and developed national water quality criteria recommendations for pollutants in surface waters.

43. The definition of "waters of the United States" significantly impacts the Agencies' and the States' implementation of the Clean Water Act, as it circumscribes which waters are within the Agencies' regulatory authority under the Act, meaning which waters are jurisdictional.

44. The Act does not protect waters that are not "waters of the United States" from pollution, degradation, or destruction. For waters that are not jurisdictional, it is not unlawful under the Act to dredge and fill them or discharge pollutants into them without a permit.

C. "Waters of the United States"

45. The waters the Clean Water Act protects are defined in section 502(7) of the Act as "the waters of the United States, including the territorial seas." 33 U.S.C. § 1362(7). The definition of "waters of the United States" has changed over the years, through regulation and interpretations of the statutory phrase in various U.S. Supreme Court and other court decisions.

1. Definitions of Waters of the United States

46. Under the Rivers and Harbors Act, jurisdiction extends to all places covered by the ebb and flow of the tide to the mean high tide line. *See Leslie Salt Co. v. Froehlke*¸ 578 F.2d 742, 749–50 (9th Cir. 1978). "Navigable waters of the United States are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity." 33 C.F.R. § 329.4.

47. The Clean Water Act is broader. Even the narrowest construction of the statutory phrase "navigable waters" extends Clean Water Act jurisdiction to "waters that were or had been navigable in fact or which could reasonably be so made." *Solid Waste Agency of N. Cook Cty. v. U.S. Army Corps of Engineers*, 531 U.S. 159, 172 (2001). As the Supreme Court held well over a century ago, waters are "navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce[.]" *The Montello*, 87 U.S. 430, 439 (1874).

48. In passing the Clean Water Act, Congress recognized that water "moves in hydrologic cycles and it is essential that discharge of pollutants be controlled at the source." *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 133 (1985) (quoting S. Rep. No. 92–414, p. 77 (1972), U.S. Code Cong. & Admin. News 1972, pp. 3668, 3742). Congress therefore invoked its commerce clause authority to regulate waters not "navigable" in the traditional sense. Clean Water Act jurisdiction is not eliminated when unfilled waters are severed from a main body of water. *See U.S. v. Milner*, 583 F.3d 1174, 1195 (9th Cir. 2009).

49. Despite the salt ponds in *Froehlke* not being tidal, because they originated from the San Francisco Bay, they were jurisdictional. *See Froehlke*, 578 F.2d at 755 ("The water in Leslie's salt ponds, even though not subject to tidal action, comes from the San Francisco Bay . . . We see no reason to suggest that the United States may protect these waters from pollution while they are outside of Leslie's tide gates but may no longer do so once they have passed through these gates into Leslie's ponds.").

50. Waters that are capable of being used for commerce are also navigable. *See The Montello*, 87 U.S. 430, 441 (1874); *U.S. v. Appalachian Electric Power Co.*, 311 U.S. 377 (1940). The Salt Ponds at issue are currently navigable in fact. The Clean Water Act also applies to waters that are no longer subject to tidal inundation because of man-made structures, such as dikes. *See Froehlke, 578 F2.d* at 755–56.

51. "Fast land" is dry, solid upland that would not return to its natural state as water if the artificial structures preventing tidal influence were removed. Waters that were filled and turned into "fast land" before 1972 are out of the statute's jurisdictional reach; however, fast land can revert to jurisdictional waters if "the waters actually overtake the land" which then "become submerged by the waters of the United States." *Milner*, 583 F.3d at 1195. Impoundments of waters of the United States that contain water are not "fast land and are within Clean Water Act jurisdiction because such impoundments are not dry, solid, or upland. Furthermore, impoundments of water that would become subject to tidal influence once the impounding structures are removed are not "fast land."

52. Supreme Court cases, in particular, *Rapanos v. United States*, 547 U.S. 715 (2006) have also addressed the definition of waters of the United States. In that case, Justice Kennedy (in a concurring opinion) described what has become known as the "significant nexus" test for Clean Water Act jurisdiction: The definition of "navigable waters" extends only to those waters that, either alone or in combination with other waters similarly situated, "significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as 'navigable.'" *Id*. at 780 (Kennedy, J., concurring).

53. The "significant nexus" test is met when a body of water has a significant impact on a traditionally navigable water. A water body may still have a significant effect on a traditionally navigable water even in the absence of a hydrologic connection, if it affects the "chemical, physical, and biological integrity of other covered waters." *Id*. at 780, 786

54. Courts have consistently followed Justice Kennedy's "significant nexus" framework and have held that a water is jurisdictional, at the very least, when this test is satisfied.[1] Yet

[1] *See, e.g., Northern Cal. River Watch v. City of Healdsburg*, 496 F.3d 993 (9th Cir. 2007), *cert. denied*, 128 S. Ct. 1225 (2008); *United States v. Bailey*, 571 F.3d 791 (8th Cir. 2009); *United States*

significant confusion remained, which led to underenforcement of the Clean Water Act's protections and the introduction of recent regulations aimed to clarify which waters are protected by the Clean Water Act.

2. The Clean Water Rule

55. The current regulatory definition of waters of the Unites States was promulgated in 2015 as a rule—known as the "Clean Water Rule"—by EPA and the Corps in order to clarify the definition. EPA and the Corps conducted extensive outreach and rulemaking efforts. Over a million public comments were received by the agencies. The final Clean Water Rule was supported by extensive scientific, economic, legal, and policy research and analysis.

56. The Clean Water Rule is based largely upon the *Rapanos* "significant nexus" framework, combined with additional agency factors. The Clean Water Rule provides in part that "waters of the United States" include: (1) "All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide . . ." (2) "All impoundments of waters otherwise identified as waters of the United States . . ." and (3) "All waters located within the 100-year floodplain" or "within 4,000 feet of the high tide line or ordinary high water mark" of a water used or susceptible to use in interstate commerce that "are determined on a case-specific basis to have a significant nexus to" such water. 40 C.F.R. § 232.2 (2015); *see also* 80 Fed. Reg. at 37,117 (providing the government's definition that applies to the Clean Water Act's section 404 wetlands permitting program implemented by the Corps).

57. The Clean Water Rule was intended to protect public health and water resources and increase the predictability and consistency of applications of the Clean Water Act by clarifying the scope of protected waters. It was the regulatory definition applicable at the time of EPA's Negative JD at issue.

58. The Trump Administration has targeted environmental protections that regulate high-pollution industries and development of environmentally valuable and sensitive resources. The

v. Cundiff, 555 F.3d 200 (6th Cir. 2009); *United States v. Johnson*, 467 F.3d 56 (1st Cir. 2006), *cert. denied*, 128 S. Ct. 375 (2007).

Administration has backed-out of the Paris Climate Agreement, denied scientific data relating to climate change, and rolled-back essential regulations, including those meant to control greenhouse gases, coal ash waste, water pollution, mercury, and smog.

59. Under the current administration, EPA has repeatedly attempted to narrow the definition of waters of the United States. In 2017, the Trump Administration announced its intention to revise or rescind the Clean Water Rule and its definition of waters of the United States. In February 2018, EPA and the Department of the Army finalized a rule that established an applicability date of February 2020 for a new definition of waters of the United States. Two District Courts have enjoined and vacated that rule as unlawful.

60. On September 12, 2019, the Trump Administration again announced a repeal of the 2015 Clean Water Rule. At the announcement, Defendant Wheeler stated that the Administration had finalized 46 deregulatory actions and had an "additional 45 actions in development."[2]

61. The 2015 Clean Water Rule is also subject to ongoing litigation, but it was valid and effective at the time of the 2019 Negative JD and remains in effect in the State of California until the rule proposed in September 2019 becomes final. *See https://www.epa.gov/wotus-rule/definition-waters-united-states-rule-status-and-litigation-update.*

V. FACTUAL ALLEGATIONS

A. The Redwood City Salt Ponds Site

62. Before the pink and red commercial salt ponds that exist today, the San Francisco Bay's coastline was scattered with hundreds of thousands of acres of natural salt marshes. Along with neighboring mudflats and wetlands, these salt marshes provided important habitat for species and performed other important ecosystem services such as pollution filtration and protection from storm surges.

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[2] See https://www.npr.org/2019/09/12/760203456/epa-makes-rollback-of-clean-water-rules-official-repealing-2015-protections (last visited September 13, 2019).

Photo by Kenneth Lu, May 11, 2013, available through Flickr at https://www.flickr.com/photos/toasty/8771779894/, aerial photo of Site.

Photo by Matt Leddy, March 25, 2017, Pond 7B at the Site inundated with water.

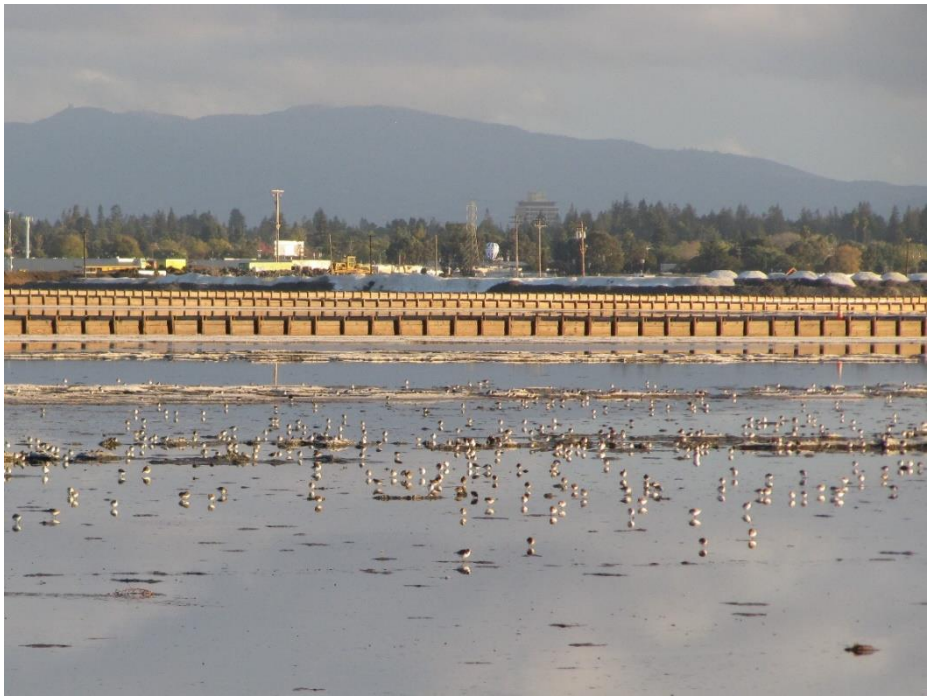

Photo by Matt Leddy, November 27, 2010, birds in Pond 1 at the Site.

63. Now, due to extensive shoreline development, just ten percent of these natural salt marshes remain.

64. The Site is bordered by navigable tributaries of the San Francisco Bay. These tributaries include Redwood Creek, First Slough, Westpoint Slough, and Flood Slough. The Site is historically marshland subject to inundation periods, and prior to levee construction, contained a network of tidal sloughs. Before the Site was developed, other tidal sloughs existed throughout the Site, some of which were navigable.

65. The site is also adjacent to federal and state protected lands Plaintiffs have also advocated to protect, including the Don Edwards National Wildlife Refuge, Ravenswood Open Space Preserve, and the Palo Alto Baylands Preserve. The Site was identified by U.S. Fish and Wildlife Service for proposed addition to the Don Edwards National Wildlife Refuge due to its value to the ecosystem and wildlife habitats in the southern end of San Francisco Bay.

66. Construction of commercial salt pond facilities began along the San Francisco Bay and its tributaries in the early 1900's. The Salt Ponds were part of this development, eventually consisting of a 1,365-acre salt complex east of Redwood Creek and surrounded by a levee system that

separates the Site from the natural tidal influences of the San Francisco Bay. Cargill, Inc. has owned the property since 1978, and it is currently owned by Cargill Point, Inc.

67. In 1902, salt operations began between Redwood Creek and First Slough, and including a southern portion of the location of the present-day crystallizers. Water was taken in from San Francisco Bay by pumps and inlets, concentrated into brines by solar evaporation in sequential basins and moved into small rectangular crystallizers, creating salt that was harvested by hand. The Stauffer Chemical Company consolidated these operations in 1907. Stauffer later became Leslie Salt Company and bought all the salt companies on the western and eastern shores of South San Francisco by the 1960's. Subsequently, Cargill, Inc. purchased Leslie Salt in 1978.

68. By 1930, most of the salt production ponds in the western section of the Site had been dredged, eliminating some of the original tidal sloughs. The Site owners erected levees to separate the former marshlands from the water bodies on the north and western sides of the Site by 1931.

69. Since 1972, Leslie Salt and Cargill have explored regulatory options for disposal of bitterns[3] into the San Francisco Bay. Bitterns have reportedly been stored at various ponds on site, sent to the Newark plant via pipeline and/or barges, and has been discharged into the San Francisco Bay, pursuant to a series of Corps permits.

70. Before pipelines were constructed to transfer water between the salt facilities in Newark and Redwood City, water was pumped directly from the San Francisco Bay into the ponds for salt production. After pipeline construction and up until 2002, the salt companies pumped San Francisco Bay water into the Site from an intake in the First Slough for desalting. Cargill installed new intake pipes on one of the ponds to bring in San Francisco Bay water for brine flow in 2000 and 2001.

71. Cargill currently uses a floating dredge, "The Mallard," to access the dikes for maintenance repairs. The Mallard enters the Site from tidal sloughs through a dredge lock system and navigates through the ponded waters to reach the edges of the dikes for repairs.

[3] "Bitterns" are the solution that remains after evaporation and crystallization of salt from brines and seawater. They are a concentrated form of magnesium and potassium chlorides, bromides, iodides, and sulfates.

B. The Salt Process and Nature of the Ponds

72. The production of salt begins when Cargill pumps water from San Francisco Bay into evaporation ponds located at its Newark facility across the San Francisco Bay from the property. According to Cargill, after several years of solar evaporation at the Newark facility, the water is transferred by pipe to the Redwood City salt ponds. The ponds at the Redwood City site are connected to each other, with each serving a different purpose in the production process.

73. One of the ponds includes a water intake area, where Cargill at times brings water in directly from the San Francisco Bay. Notably, the entire production process involves only brackish water from the San Francisco Bay and seasonal rainwater that falls directly into the ponds. The Salt Ponds are inundated with water, on average, six to nine months of the year. Between 2013 and 2015, in the midst of a drought, all of the ponds at the Site were inundated for at least three months. The Region 9 Evaluation concluded that on average the property receives approximately 20 inches of annual precipitation.

74. The levees on the property were designed to move highly salinated water through a series of ponds sequentially to produce salt and hold the remaining bitterns. The levees separate the salt production process from direct inputs of San Francisco Bay water, except for the occasions when water is pumped in or out of the ponds, or when Cargill moves its floating dredge, The Mallard, into the ponds. The Mallard accesses the Salt Ponds by navigating through either of two dredge locks. The vessel accesses the ponds from Westpoint Slough at one of two dredge locations next to bittern portions of the Salt Ponds, excavating and re-closing the dredge lock levees to pass through them:

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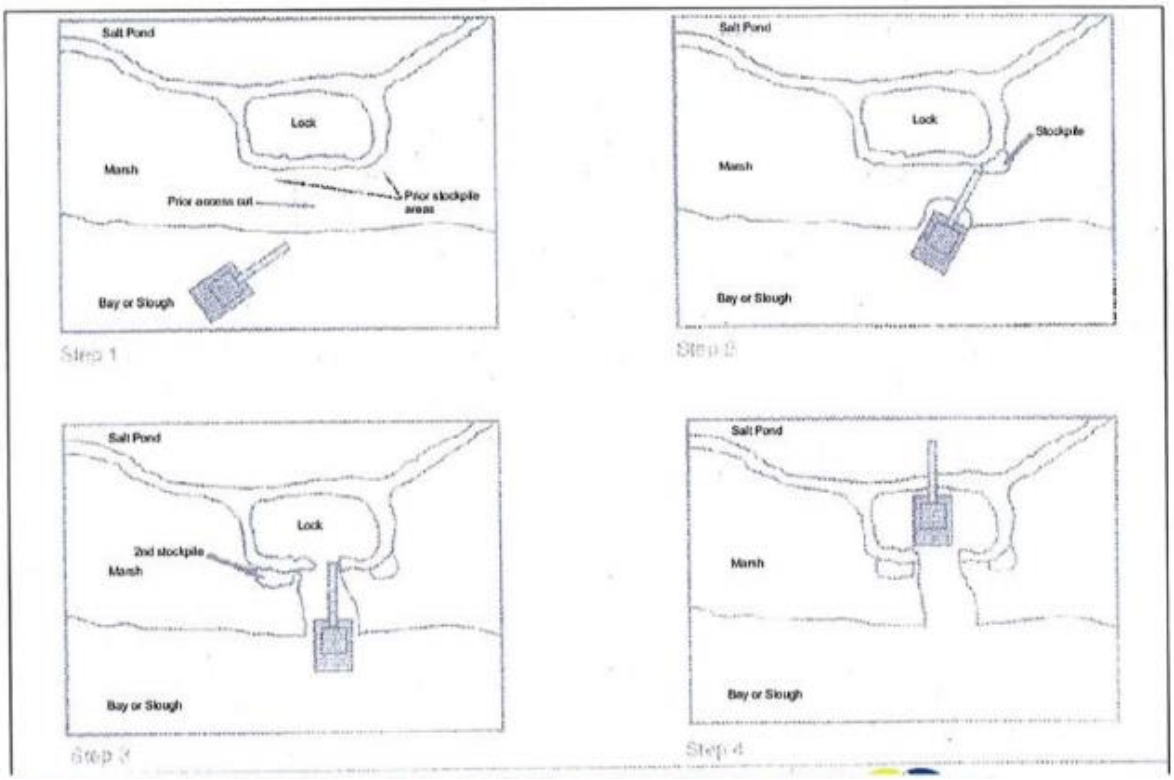
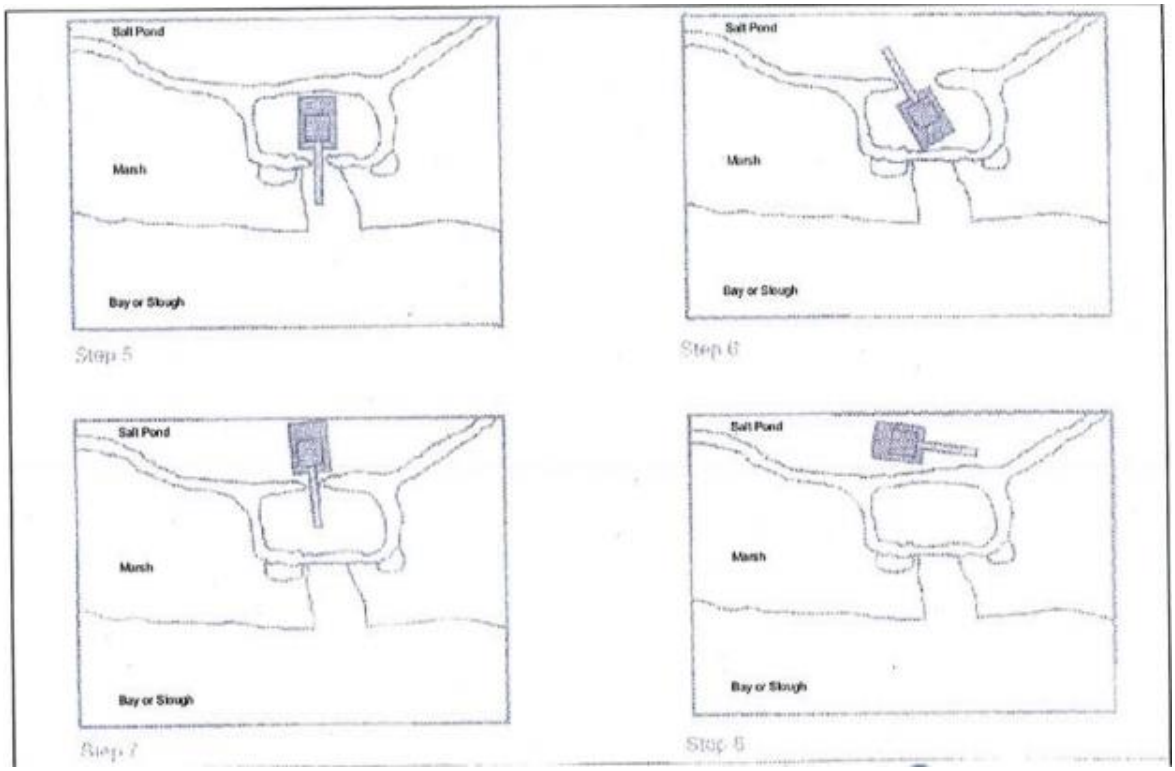


See Exhibit A, p. 31.



See Exhibit A, p. 32.

75. The Salt Ponds were not excavated from dry lands. Man-made levees created the ponds from the San Francisco Bay. Prior to the levees being constructed, the area had been marshland that was subject to regular tidal influence. While the wetlands were separated from the San Francisco Bay before the Clean Water Act was enacted, the areas behind the levees were not filled and have never been fast lands.

76. Portions of the area enclosed by the levees are periodically inundated with water from the San Francisco Bay. Since the mid-nineteenth century, and continuing to today, all of the ponds remain below the High Tide Line ("HTL") and all of the pond bottoms are below the local Mean High Watermark ("MHW") of the San Francisco Bay. Currently the Site consists of levees, building pads and ponds constructed for salt production.

C. The Impact of the Salt Ponds on the Ecosystem and other Waters

77. The Salt Ponds, and water contained therein, have a significant impact on numerous species of wildlife living in or near the San Francisco Bay. Invertebrates, birds, and mammals use the salt ponds for resting, breeding, nesting and feeding. These organisms are part of the food web that extends beyond the salt pond boundaries because they are mobile and exchange carbon, nutrients, and other resources within the San Francisco Bay ecosystem. Further, birds and other animals that feed on organisms at the base of the pond food web export nutrients to other parts of San Francisco Bay waters.

78. The open waters of the Salt Ponds also transform and sequester nutrients and chemical contaminants that could adversely impact water quality in the San Francisco Bay. Therefore, other organisms living in the San Francisco Bay waters are directly impacted by the organisms that use the Salt Ponds. Plaintiffs' members include individuals who use the Salt Pond lands for the purpose of observing this wildlife.

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Photo by Matt Leddy, February 6, 2019, Pond 10 at the Site with roosting shorebirds at high tide.

Photo by Matt Leddy, December 13, 2016, Crystallizer Pond 1 at the Site with foraging and roosting shorebirds.

D. Permitting History at the Salt Ponds

79. The Corps and its predecessor, the War Department, issued various permits to allow Site development, beginning in 1940. The levee construction was finished by 1951, establishing the current borders of the Site, and separating it from the San Francisco Bay's tidal influences.

80. Cargill obtained both federal and state permits for operations improvement and maintenance activities by the 1980's, which allowed for system improvements and a new pipeline between the Newark and Redwood City plants. These permitted operation and maintenance activities included constructing dredge locks, repairing levees, renewing rip rap, and replacing gates, pipes, pumps, and siphons. From 1988 and onward, the Corps has issued Regional General Permits, Nationwide Permits, and Individual permits under Section 404 of the Clean Water Act to cover operation and maintenance of levees and infrastructure at Cargill's salt plants. To mitigate the impacts from ongoing operation and maintenance, Cargill restored 49 acres of one of its complexes back to tidal marsh.

E. The Salt Ponds Impact Interstate Commerce and Are Navigable

81. Prior to being artificially diked off from the San Francisco Bay, waters from the San Francisco Bay extended throughout the area of the salt marsh that now make up the Redwood City Salt Ponds.

82. Brine shrimp were harvested from the ponds directly through the 1970s. The major sloughs within and near the Salt Ponds were deep enough that they were navigated by small vessels.

83. In addition to this original connection to the clearly navigable waters of the San Francisco Bay, commercial navigation currently exists immediately near the Salt Ponds. "The Mallard," the floating clamshell dredge used by the company, maintains the levees by accessing the Salt Ponds from Westpoint Slough through either of two dredge locks. The dredge locks are adjacent to Ponds 9 and 9a. This vessel demonstrates the current and actual navigability of the Salt Ponds.

84. The Salt Ponds also have the physical capacity to support commercial navigation when filled. EPA has previously found that with improvements the ponds are susceptible to additional interstate and foreign commerce and recreational navigation, as they are adjacent to the San Francisco Bay.

VI. EPA'S NEGATIVE JURISDICTIONAL DETERMINATION VIOLATED THE ADMINISTRATIVE PROCEDURE ACT

A. Cargill's Request for a Jurisdictional Determination at the Salt Ponds Site, and the Corps and EPA Responses

85. In November 2009, DMB Redwood City Saltworks requested that the San Francisco local District of the Corps prepare a preliminary jurisdictional determination under the RHA and Clean Water Act for the area in and adjacent to the Salt Ponds. DMB Redwood City Saltworks' principals are DMB Pacific Ventures, LLC, and Westpoint Slough, LLC. Westpoint Slough LLC is an affiliate of Cargill, Inc.

86. DMB Redwood City Saltworks made the request in conjunction with a permit application filed with Redwood City for a proposed urban development and partial restoration project on the site.

87. In 2010, the Corps issued a preliminary jurisdictional determination stating that wetlands and other waters on the site may be jurisdictional under the RHA and Clean Water Act. In response to public opposition to the permit, including work spearheaded by Plaintiffs, DMB Redwood City Saltworks withdrew its permit application to Redwood City in 2012.

88. On May 30, 2012, under section 404 of the Clean Water Act and section 10 of the RHA, DMB Redwood City Saltworks requested that the Corps and EPA prepare a formal jurisdictional determination for the site.

89. On March 18, 2015, the Corps prepared a memorandum and email to EPA indicating that it intended to determine the Site may not be jurisdictional under both the RHA and the Clean Water Act, reversing course from its initial response five years earlier.

90. Upon receiving the Corps' intent to finalize its negative jurisdictional determination EPA designated the Salt Ponds as a "special case" pursuant to the 1989 Memorandum of Agreement between EPA and the Corps. EPA was thereafter responsible for making the final determination on the jurisdictional status of the waters under the Clean Water Act. Such determinations are binding on the United States and represent its position in any subsequent federal action, including in litigation, for at least five years.

91. The Corps issued a memorandum letter providing the basis for its "final" jurisdictional determination under the RHA on March 19, 2015, shortly after EPA's assertion of authority under the Clean Water Act as a special case. *See* Exhibit A at pp. 6–7, fn. 7, and Exhibit B at p. 3, fn. 10 (both citing Major General John W. Peabody, Army Corps of Engineers, Basis for Rivers and Harbors Act of 1899 Section Approved Jurisdictional Determination, Redwood City Saltworks (Mar. 19, 2015)).

92. EPA has ten regional offices that are each responsible for conducting programs for a group of states or territories. EPA Region 9 regulates California, Nevada, Arizona, and Hawaii. In 2016, EPA Region 9 drafted a JD which concluded that 1,270 acres of the Site are jurisdictional "waters of the United States" under the Clean Water Act, while the remaining 95 acres of levees, building pads, and other features converted to fast land prior to the Act's enactment were non-jurisdictional.

93. Region 9's findings concluded: (1) the tidal channels within the Salt Ponds were part of the traditionally navigable waters of the San Francisco Bay; (2) the Salt Ponds are navigable currently and can be used in interstate or foreign commerce; (3) the Salt Ponds are impoundments of water otherwise defined as "waters of the United States;" and (4) the salt ponds have a significant nexus to the traditionally navigable waters of the San Francisco Bay.

94. The affirmative JD from EPA Region 9 was not finalized, however. With the change in administrations in 2017, EPA Headquarters radically changed course.

95. In 2019, EPA Headquarters ignored EPA Region 9's affirmative JD and issued a Negative JD for the Site, finding the entire property to be non-jurisdictional fast land, and establishing the federal government's position on the Site's jurisdictional status under the Clean Water Act.

96. This final Negative JD conflicts not only with EPA Region 9's detailed analysis and conclusion that the Site consists of jurisdictional waters, but also with the applicable facts and law.

B. EPA's Negative JD Violated the APA

97. The dredge locks and salt ponds within the Site are navigable, as demonstrated by Cargill's use of The Mallard floating maintenance dredge, which enters and navigates the waters to

access the dikes. Moreover, evidence that the natural tidal sloughs, which existed on the property before the Site was developed, were navigable-in-fact demonstrates the Site's continued navigability.

98. The Salt Ponds at the Site are impoundments of waters from the San Francisco Bay, which is a traditionally navigable water. San Francisco Bay water has been and is currently used to fill the ponds for salt production and desalting.

99. The Site's ponds and dredge locks have a significant nexus to the San Francisco Bay because they have a hydrologic connection to its waters, and affect the chemical, physical, and biological integrity of the San Francisco Bay. There is a hydrologic connection between the Site's impoundments of water and the San Francisco Bay because the levees and dikes do not create a perfect barrier, as evidenced by the routine need for repairs. Water exchange occurs through pipes and pumps for operational processes, as well as when the dredge locks are utilized for Cargill's maintenance dredge.

100. The Salt Ponds' significant nexus to the San Francisco Bay is also demonstrated by their role in the San Francisco Bay's ecological food webs. Nutrients and minerals are exchanged between the Salt Ponds and the San Francisco Bay through waterfowl droppings, as birds regularly use the ponds for roosting and feeding. In addition to birds, various species of small mammals regularly frequent the ponds and levees for hunting. Fish from the San Francisco Bay occasionally make it into the Site's ditches through the tide gates and are foraged by birds on the Site. A biological connection exists between the San Francisco Bay and the Salt Ponds and surface waters because these animals routinely move back and forth, affecting nutrient levels and exchanging aquatic invertebrates when doing so.

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Photo by Matt Leddy, April 2, 2019, Pond 10 with roosting American Avocets and Marbled Godwits.

101. The waters are currently navigable by small vessels, including The Mallard. The waters are also capable of becoming more navigable with reasonable improvements.

102. The Salt Ponds produce salt that is transported into interstate and foreign commerce.

103. The Salt Ponds have a significant impact on the ecosystem, including impacts on hundreds of plant and animal species that live in or near the Salt Ponds. These organisms feed, breed and rest in the Salt Ponds and the adjacent San Francisco Bay.

104. The Salt Ponds have identifiable Ordinary High-Water Marks which further illustrate that the ponds are relatively permanent and are waters of the United States.

105. EPA ignored the significant nexus between the Ponds and San Francisco Bay, among other factors the agency was required to consider under the Clean Water Act and Clean Water Rule in making a jurisdictional determination.

106. EPA's final Negative JD for the Site incorrectly asserts that the entire Site is non-jurisdictional fast land despite the fact that the property is not "dry, solid upland." Only the 95 acres

of levees, building pads, and other structures that were truly converted to fast land before 1972 could be considered non-jurisdictional fast land.

107. By issuing the Negative JD, EPA failed to correctly apply the Clean Water Act and its implementing regulations (including the 2015 Clean Water Rule), leaving 1,270 acres of jurisdictional waters of the United States unregulated and unprotected, contrary to the Clean Water Act and its goal of protecting the nation's waters.

108. Therefore, the Negative JD is arbitrary and capricious, an abuse of discretion, and otherwise not in accordance with law within the meaning of the APA and is not within EPA's statutory authority. 5 U.S.C. § 706(2)(A), (C).

VII. CAUSES OF ACTION

FIRST CAUSE OF ACTION
Against all Defendants
Violation of the Administrative Procedure Act
Agency Action was Arbitrary, Capricious, and Abuse of Discretion, and Otherwise not in Accordance with Law

109. Plaintiffs hereby incorporate by reference all of the proceeding paragraphs as if fully set forth below.

110. EPA issued the Negative JD concluding that the Salt Ponds are not waters of the United States, but rather are fast land.

111. The Negative JD is a final agency action subject to judicial review under 5 U.S.C. § 704.

112. In issuing the Negative JD, EPA ignored numerous factors indicating that the Salt Ponds are "waters of the United States" under the Clean Water Act, Supreme Court and Circuit Court precedent, and the 2015 Clean Water Rule.

113. The Negative JD is not consistent with the Clean Water Act or the 2015 Clean Water Rule.

114. The Negative JD ignores the facts that show the Salt Ponds were not converted to fast lands and have been part of, and adjacent to, the traditionally navigable waters of the San Francisco Bay.

115. The Negative JD is arbitrary and capricious under the Administrative Procedure Act, 5 U.S.C. § 706(2)(A).

116. The Negative JD is not supported by substantial evidence or analysis in the administrative record under 5 U.S.C. § 706(2)(A).

117. The Negative JD fails to correctly apply provisions of the Clean Water Act and related provisions of the Code of Federal Regulations.

118. Plaintiffs have been harmed as a result of the Negative JD.

VIII. REQUEST FOR RELIEF

WHEREFORE, Plaintiffs pray the Court:

1. Declare that the U.S. Environmental Protection Agency's Final Jurisdictional Determination of March 1, 2019 was arbitrary and capricious, contrary to the requirements of the law, an abuse of discretion, and was not supported by substantial evidence or analysis in the administrative record under the Administrative Procedure Act;

2. Enter an Order vacating the March 1, 2019 Final Jurisdictional Determination;

3. Direct the U.S. Environmental Protection Agency to issue a Final Determination that the Salt Ponds are jurisdictional waters under the Clean Water Act;

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4. Award Plaintiffs reasonable fees, costs, expenses, and disbursements, including attorneys' fees associated with this litigation pursuant to 28 U.S.C. § 2412; and

5. Grant Plaintiffs such additional and further relief as the Court may deem just, proper and necessary.

Dated: September 24, 2019

EARTHRISE LAW CENTER

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ATTESTATION PURSUANT TO CIVIL LOCAL RULE 5-1(i)(3)

I, Nicole C. Sasaki, attest that concurrence in the filing of this document has been obtained from the other signatories. I declare under penalty of perjury that the foregoing is true and correct.

Executed this 24th day of September 2019 at Oakland, California.

/s/ Nicole C. Sasaki
NICOLE C. SASAKI

EXHIBIT A

DRAFT REDWOOD CITY SALT PONDS JD

Executive Summary

This document constitutes the U.S. Environmental Protection Agency's (EPA) determination of the federal jurisdictional status of the Redwood City Salt Ponds for purposes of the Clean Water Act (CWA). This CWA jurisdictional determination applies to the Redwood City Salt Ponds property ("Redwood City Salt Ponds" or "the Property") depicted in Figure 1. The Property is approximately 1,365 contiguous acres adjacent to Westpoint Slough, a part of San Francisco Bay, located near Seaport Boulevard, Redwood City, San Mateo County, California. Within the boundaries of the subject area, approximately 95 acres of the Property are not "waters of the United States" where they are above the High Tide Line on the outer side of the perimeter levees bounding the Property, and above the Ordinary High Water Mark on the levee interiors. These non-jurisdictional areas consist of levees, building pads and other features converted to fast land before passage of the CWA.

The remaining estimated 1,270 acres within the subject area are "waters of the United States" as defined by the CWA, because: (1) the tidal channels within the Redwood City Salt Ponds were part of the traditionally navigable waters of San Francisco Bay, and were not converted to fast land prior to enactment of the CWA; (2) the salt ponds in their current condition have been shown to be navigable in fact, and are susceptible to use in interstate or foreign commerce with reasonable improvements; (3) the salt ponds are impoundments of waters otherwise defined as waters of the United States; and (4) the salt ponds have a significant nexus to the traditionally navigable waters of the adjacent San Francisco Bay.

Table of Contents

I. Introduction and Scope of Determination

This document constitutes the U.S. Environmental Protection Agency's (EPA) determination of the federal jurisdictional status of the Redwood City Salt Ponds for purposes of the CWA. This jurisdictional determination is based on Sections 404 and 502(7) of the CWA, 33 U.S.C. §§ 1344 and 1362(7), regulations of the U.S. Army Corps of Engineers (ACOE) at 33 C.F.R. § 328.3(a) and EPA at 40 C.F.R. § 230.3(s)[1], relevant case law, and EPA and ACOE guidance, including the agencies' January 19, 1989 "Memorandum of Agreement between the Department of the Army and the Environmental Protection Agency Concerning the Determination of the Geographic Jurisdiction of the Section 404 Program and the Application of the Exemptions under Section 404(f) of the Clean Water Act" ("1989 MOA").

A. Geographic Scope of Determination

This CWA jurisdictional determination applies to the Redwood City Salt Ponds property ("Redwood City Salt Ponds" or "the Property") depicted in Figure 1. The subject area of this jurisdictional determination is approximately 1,365 contiguous acres adjacent to Westpoint Slough, a part of San Francisco Bay, located near Seaport Boulevard, Redwood City, San Mateo County, California. This determination does not address the jurisdictional status of waters on the exterior side of the perimeter levees of the Salt Ponds.

[1] For purposes of the CWA, the term "waters of the United States" is defined identically in ACOE's regulations at 33 C.F.R. § 328.3(a) and EPA's regulations at 40 C.F.R. § 230.3(s). EPA and ACOE jointly issued a revised definition of the term effective August 28, 2015, however, implementation of that new rule has been stayed since October 9, 2015. *State of Ohio, et al. v. U.S. Army Corps of Eng'rs, et al.*, 803 F.3d 804 (6th Cir. 2015). Therefore, this jurisdictional determination is made under the prior definition of "waters of the United States."

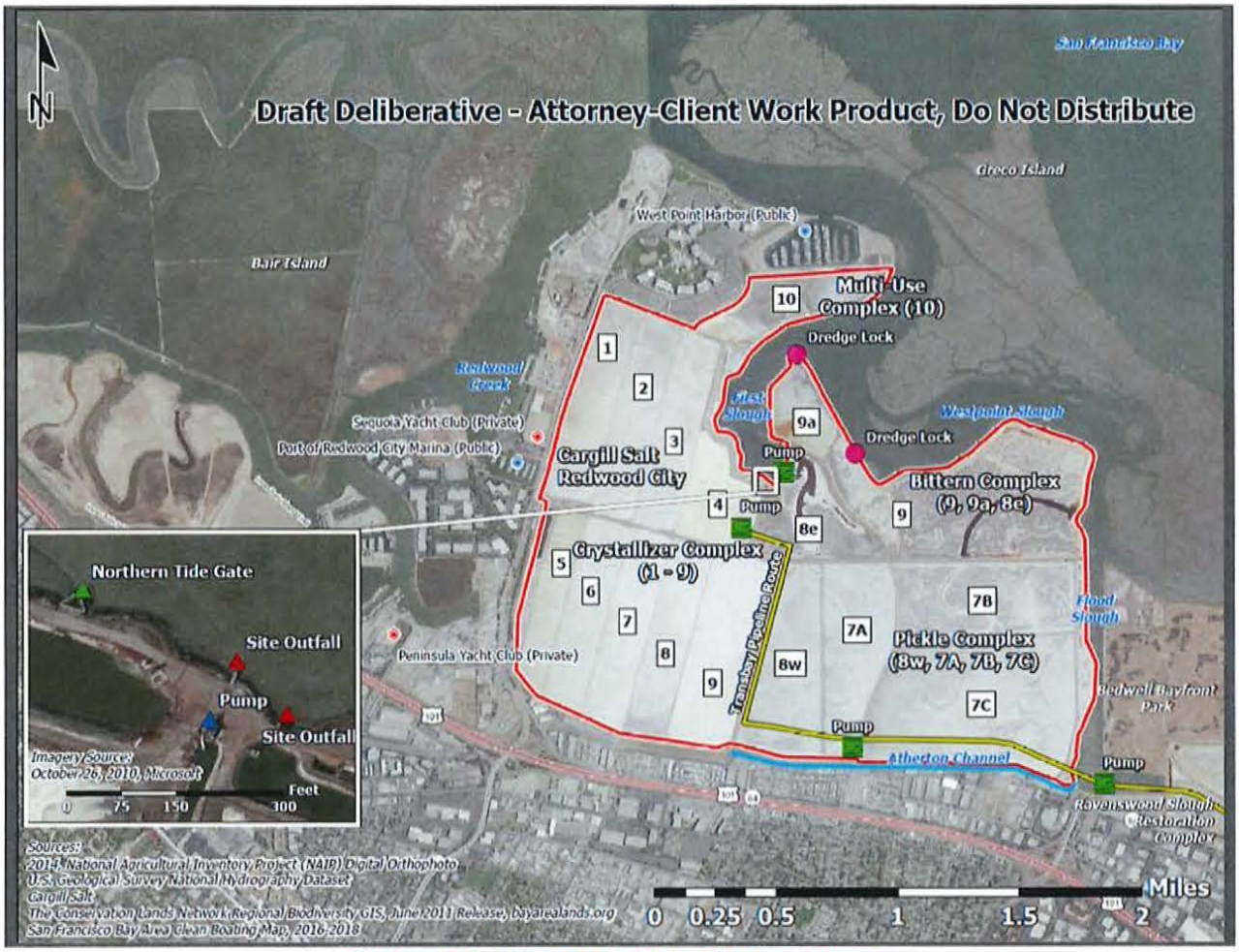

Figure 1. Redwood City Salt Ponds Site Map

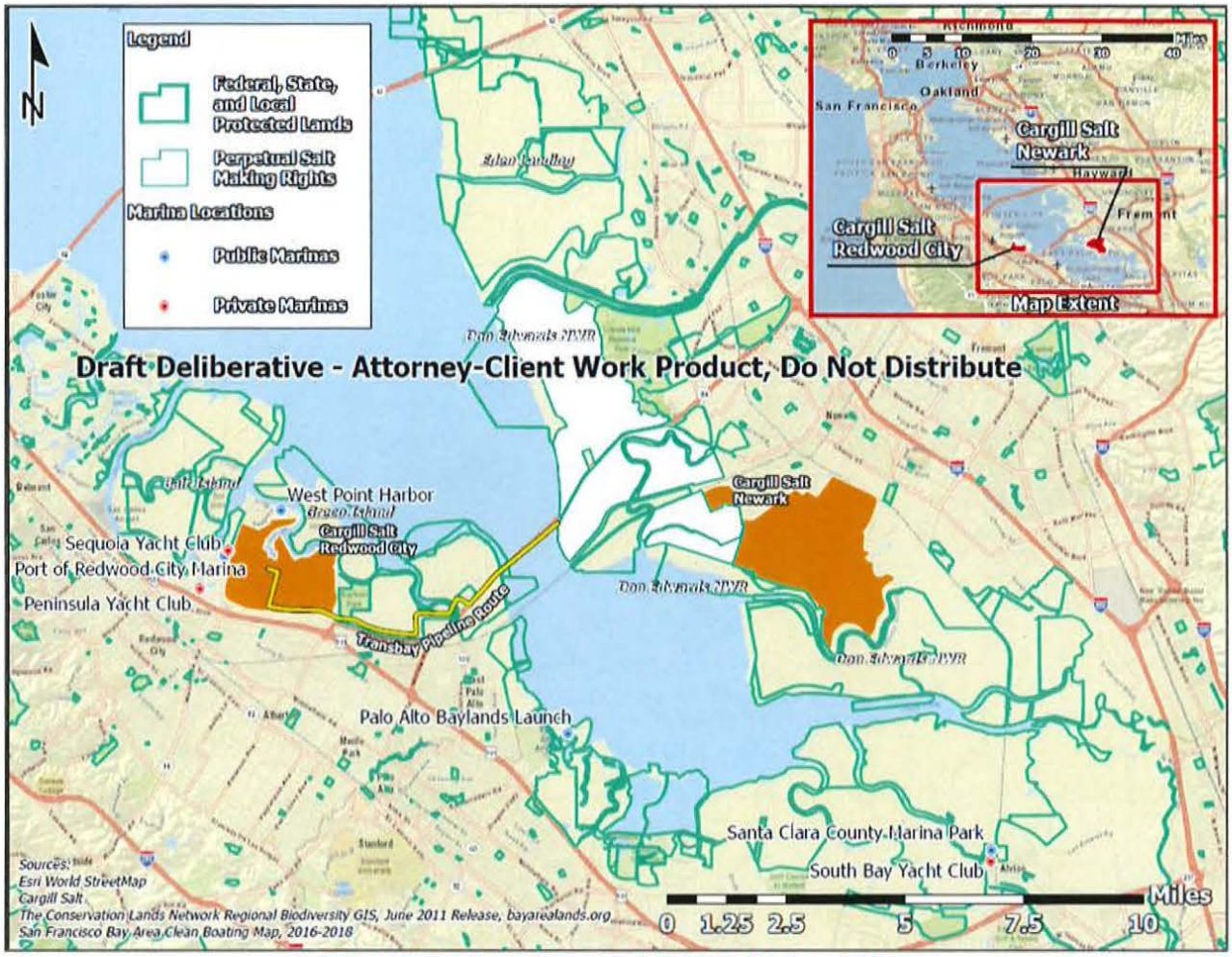

Figure 2. Redwood City Salt Ponds Regional Map

B. Procedural Background

1. Requests for a Jurisdictional Determination

On November 12, 2009, DMB Redwood City Saltworks (Saltworks) requested that the San Francisco District of ACOE prepare a preliminary jurisdictional determination (PJD) under Section 10 of the Rivers and Harbors Act (RHA) and Section 404 of the Clean Water Act (CWA) for 1,478 acres in and adjacent to the Redwood City Salt Ponds.[2] Saltworks made this request in conjunction with a permit application, filed with Redwood City, for a proposed urban development and tidal marsh restoration project on the Property. On April 14, 2010, ACOE issued a PJD in accordance

[2] According to its submission, Saltworks is a venture whose principals are DMB Pacific Ventures, LLC, and Westpoint Slough, LLC, which is an affiliate of Cargill, Incorporated. The Property is owned by Cargill Point, LLC, an affiliate of Cargill, Inc. Request for Approved Jurisdictional Determination, from David C. Smith, DMB Redwood City Saltworks, to Jane Hicks, Chief, Regulatory Division, ACOE, and Jason Brush, Manager, Wetlands Office, EPA Region 9, May 30, 2012, with exhibits ("AJD Application"). Saltworks' PJD request included 113 acres of adjacent areas that are not covered by this AJD.

with ACOE Regulatory Guidance Letter 08-02, stating that wetlands and other waters on the Property may be jurisdictional under the RHA and CWA.[3] Saltworks engaged in public outreach for the proposed project, but withdrew its application with Redwood City on May 4, 2012.[4]

On May 30, 2012, Saltworks requested that ACOE and EPA prepare legally binding final jurisdictional determinations (referred to as "Approved Jurisdictional Determinations" or "AJDs" by ACOE) under the RHA and CWA for the Property. Saltworks requested that EPA make the CWA jurisdictional determination pursuant to the 1989 MOA. EPA informed Saltworks that, at that time, it expected ACOE would proceed normally to conduct the RHA and CWA determinations with EPA's technical support.[5] Saltworks has not submitted a RHA or CWA permit application for a project to ACOE.

2. EPA "Special Case" for Clean Water Act Jurisdictional Determination

The 1989 MOA between EPA and ACOE provides that, for purposes of Section 404 of the CWA, EPA may designate certain jurisdictional determinations as "special cases" and make the final determination on the jurisdictional status of potential waters of the United States. These determinations are binding on the United States and represent its position in any subsequent federal action or litigation.

On May 14, 2014, after conferring with ACOE on the pending RHA and CWA jurisdictional determinations, EPA Region 9 requested permission from EPA's Office of Water to designate the CWA determination for the Property as a special case. On May 30, 2014, the Office of Water informed Region 9 that the Assistant Secretary for the Army had directed ACOE to suspend work on the RHA and CWA jurisdictional determinations so that the Army could conduct a legal and policy review of the ACOE's process. Accordingly, the Office of Water deferred the special case designation, while reserving EPA's right under the CWA and the 1989 MOA to designate the Property as a special case in the future.[6]

The Army completed its internal review in November 2014 and ACOE subsequently resumed work on the jurisdictional determinations. Following discussion between EPA and ACOE, on March 18, 2015, EPA sent a letter to ACOE designating the Saltworks CWA jurisdictional determination as a special case.

3. ACOE Rivers and Harbors Act Section 10 Jurisdictional Determination

[3] AJD Application, Ex. 22.
[4] AJD Application, Ex. 25.
[5] J. Brush email to D. Smith et al., October 30, 2012.
[6] N. Stoner letter to J. Blumenfeld, May 30, 2014.

On March 19, 2015, ACOE headquarters issued an approved jurisdictional determination for the Property for Section 10 of the RHA.[7] ACOE determined that only the areas in the Eastern Section of the Property, which are depicted as "double-sided sloughs" on U.S. Coast and Geodetic Survey T-sheet 4643, from 1931, are jurisdictional under Section 10 of the RHA. The total area of these double-sided sloughs was calculated to be 56.87 acres.

ACOE concluded that the areas shown as double-sided sloughs were the only areas below Mean High Water (MHW) on January 16, 1940, when Army's predecessor, the War Department, issued a permit to construct levees that cut off the eastern portion of the Property from tidal influence.[8] Since the 1940 permit expressly reserved federal jurisdiction over navigable waters pursuant to the RHA (see Section II.B.1-2), ACOE continues to assert jurisdiction over the double-sided sloughs.

ACOE declined to assert RHA jurisdiction over any part of the Western Section of the Property, stating that in the past the Army had either portrayed that portion as non-jurisdictional improved lands, or had explicitly determined that the area was non-jurisdictional. This finding refers to an ACOE legal memorandum which states that there is substantial evidence that ACOE had surrendered RHA jurisdiction and, therefore, ACOE should decline to assert jurisdiction as a matter of judgment and risk calculation.[9] The analysis did not conclude that as a matter of fact and law ACOE had surrendered RHA jurisdiction. Nevertheless, because of ACOE's decision to decline RHA jurisdiction over this area, ACOE did not assess the specific hydrologic and topographic characteristics of the Western Section of the Property.

II. The Redwood City Salt Ponds

Prior to development, the Redwood City Salt Ponds were an area of tidal marsh interspersed with numerous sloughs connected to the main San Francisco Bay via Westpoint Slough and Redwood Creek. Currently, the Property consists of levees, building pads and ponds constructed for salt production.

A. Early History

At the turn of the twentieth century, a number of commercial-scale salt production operations began along the edges of San Francisco Bay. The lands and waterways around the Port of Redwood City underwent intensive commercial development. Development of the Redwood City Salt Ponds began in 1901. Figure 3. By 1902, the Redwood City Salt Company and the West Shore Salt Company leased or owned portions of the Property. [10] The Redwood City Salt Company operated its salt works, including evaporators, crystallizers, and other production ponds, on

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[7] J. Peabody, "Basis for Rivers and Harbors Act of 1899 Section 10 Approved Jurisdictional Determination, Redwood City Saltworks," March 19, 2015.

[8] This assumption appears to be incorrect. The United States Coast Survey (USCS) mapped this portion of the Bay in 1857 and 1898, identifying an extensive network of additional sloughs not shown on the 1940 permit map. Many of these sloughs were likely inundated at the MHW tidal elevation. See Section IV.E.

[9] Earl Stockdale, Chief Counsel, ACOE, *Supplement to 'Legal Principles to Guide the Approved Jurisdictional Determination for the Redwood City Salt Plant,'* March 15, 2014 (RHA AJD, Attachment 5).

[10] San Francisco Estuary Institute, *Redwood City Draft Technical Memo*, March 22, 2016, ("SFEI 2016").

approximately 432 acres (of a total 1,784 acres of leased land) east of Redwood Creek and southwest of First Slough. West Shore Salt Company owned and operated 192 acres of additional salt works in a southern portion of the present-day crystallizers. According to the local newspaper, the ponds produced their first salt crops in October 1902. "Water was taken in from San Francisco Bay by pumps and/or inlets, concentrated into brines by solar evaporation in sequential basins, and moved into small rectangular crystallizers to eventually crystallize as salt that was then harvested by hand."[11]

The Stauffer Chemical Company consolidated these operations in 1907. Stauffer later became the Leslie Salt Company and acquired all of the salt companies on the western and eastern shores of South San Francisco Bay by the late 1960's. Cargill, Inc. purchased Leslie Salt in 1978.

ACOE began issuing permits pursuant to Section 10 of the Rivers and Harbor Act (RHA) in the early twentieth century, though it appears that this permit process did not address all projects that were potentially subject to RHA jurisdiction during this era. EPA is not aware of any RHA permits issued for salt processing operations at the Redwood City Salt Ponds prior to 1940. There are records indicating that ACOE did issue some RHA permits to construct salt processing infrastructure (e.g. levees, dams, siphons, and pipelines) by various companies in south San Francisco Bay in the 1920-1960's, including permits for expansion of the Redwood City Salt Ponds.[12] The RHA permit record shows the intensive expansion of salt pond facilities in the South Bay during this time, including the establishment of pipeline connections among plant sites to consolidate operations.

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[11] Michael Josselyn, Ph.D., WRA, Inc., *Early History of Redwood City Salt Plant Site*, Feb. 27, 2012, AJD Application, Ex. 5 ("Early History Report").

[12] Department of the Army, ACOE, San Francisco District, June 20, 2013. Permit summary for South Bay projects from 1905-2010.

Figure 3. Redwood City Salt Ponds History of Site Development (*from AJD Application, Ex. 6*)

B. Permit History

1. 1940 RHA Section 10 Permit

On December 8, 1939, Leslie Salt's predecessor, Stauffer Chemical, submitted a permit application to the War Department to dam First Slough, which separated the existing salt evaporating ponds from the undeveloped eastern portion of the Site, and to construct levees around the eastern portion.[13] The application shows the base of the proposed dam five feet below Mean Lower Low Water (MLLW) and 13 feet below Mean Higher High Water (MHHW) in First Slough. It also shows "marsh land" to be at the elevation of MHHW.

The War Department granted a permit, pursuant to Section 10 of the RHA, on January 14, 1940:

> To construct an earth dyke or levee across and along the bank of First Slough, and along the banks of Westpoint Slough and an unnamed tributary thereof, in Westpoint Slough, at about 1.0 mile southeasterly of the mouth of Redwood Creek, San Mateo County, in accordance with the plans shown on the drawing attached hereto marked "Proposed Dam

[13] War Department, Section 10 Permit issued to Stauffer Chemical Company, January 16, 1940.

and Levee East of Redwood Cr., San Mateo County, California, Application by Stauffer Chemical Co., Dated Dec. 1939" . . ..

The permit was issued with the limitation that "IT MERELY EXPRESSES THE ASSENT OF THE FEDERAL GOVERNMENT SO FAR AS CONCERNS THE PUBLIC RIGHTS OF NAVIGATION," and a condition that if changes are needed, "the owner shall be required, upon due notice from the Secretary of War, to remove or alter the structural work or obstructions caused thereby without expense to the United States, so as to render navigation reasonably free, easy, and unobstructed ...."

The War Department's December 9, 1939, public notice for the permit provides a few more details about the proposed work. It included a similar reservation of rights and a map, attached to the application and incorporated into the permit, showing most of the Western Section of the Property as "Salt Evaporating Ponds," west of an "Existing Levee," and a smaller part to the north as "Reclaimed Marsh." The map shows the Eastern Section of the Property as marshland with large and minor sloughs throughout.

In 1941, Leslie Salt closed the existing production facilities at the Redwood City Salt Ponds and began construction of the current facilities, including the large rectangular crystallizer beds in the Western Section of the Property.[14] Leslie Salt initiated construction of the First Slough dam and the levees along Westpoint Slough in 1943.

2. 1947 Dredging Permit

On March 19, 1947, Leslie Salt submitted to the War Department a permit application to dredge parts of Redwood Creek, a salt pond adjacent to Redwood Creek, and an area in Westpoint Slough.[15] The dredged material was proposed to be placed in the Western Section of the enclosed evaporation ponds, in the location of the present-day crystallizers. The discharge location was identified generally as "Area to be Filled." It is likely that the dredged material was used to create and maintain internal levees within the salt ponds, since spreading the material across the Western Section would have interfered with salt production, and later aerial photographs do not show filled areas, other than the levees.

On April 28, 1947, the War Department issued a permit allowing Leslie Salt to dredge a total of 1.5 million cubic yards of material from the four discrete areas. The cover letter reserves the United States' rights in the same manner as the January 14, 1940 permit, stating "it merely expresses the assent of the Federal Government in so far as concerns the public rights of navigation."

[14] Ver Planck, W.E., *Salt in California*. State of California Department of Natural Resources, Division of Geology and Mines, Bulletin 175, 1958.

[15] War Department, Permit Issued to Leslie Salt Company, April 28, 1947.

From 1950 to 1951, Leslie Salt constructed the current large crystallizer beds and internal levees within the "Area to be Filled".[16]

3. 1951 – 2015 Pipeline Connection to Newark

On February 9, 1951, ACOE issued a permit for Leslie Salt to construct an eight-inch pipeline across the Dumbarton Strait, presumably between the Newark and Redwood City plant sites.[17] It appears from the available records that this was the first pipeline constructed to facilitate brine transfer between the two salt pond complexes. ACOE permitted a larger 20-inch pipeline across the Dumbarton Strait in 1964.

It is not clear how much brine the Redwood City plant used from the Newark plant, in addition to, or instead of, water taken directly from the Bay. According to a report from 1972, all of Leslie Salt's plants could be operated as independent units, although the pipelines facilitated pond utilization as needed.[18] System maps from the 1980s and 1990s depict unidirectional flow from the Newark plant to the Redwood City plant.[19]

Prior to connecting the Redwood City plant to the Newark plant, and at subsequent times, the Redwood City plant took Bay water directly into some of the ponds, via intake manifolds and pumps.[20] From 1951 to at least 2002, Leslie Salt (later Cargill) imported Bay water through the intake pipe and tide gate structure located at First Slough (between ponds 4 and 8E) to desalt the crystallizer beds and desalting pond (Pond 10).[21] In 2000 and 2001, Cargill constructed new intake pipes on Pond 1 of the Ravenswood Complex (formerly part of the Redwood City plant) to bring in Bay water to improve brine flow.[22] In addition, winter and spring rainwater that fell on the site and filled the ponds was periodically discharged from the First Slough pipe to the Bay, authorized first by a San Francisco Regional Water Quality Control Board (Regional Board) Individual NPDES permit and Waste Discharge Requirements (WDR) (CA0028690, Orders 82-59 and 88-163),[23] then later by a State Water Resources Control Board General NPDES permit (91-13DWQ; 97-03DWQ).[24] The

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[16] Early History Report.
[17] ACOE Permit summary, 2013.
[18] CDM Inc., Report on Proposed Discharge of Bittern to San Francisco Bay, prepared for Leslie Salt, March 31, 1972.
[19] Leslie Salt Company, Southbay Production Facilities, April 1985 base aerial photography.
[20] Josselyn, Early History Report; Cargill Salt Division, Letter to U.S. Army Corps of Engineers requesting disclaimer of jurisdiction for Cargill's Redwood City Plant Site, February 28, 2002.
[21] Cargill Salt Maintenance Work Plan Report 2002-2003, Eight Report, April 2002.
[22] Cargill Salt Maintenance Report, March 22, 1999.
[23] San Francisco Regional Water Quality Control Board: WDID 2417125001, Order No. 82-59, NPDES No. CA0028690, Waste Discharge Requirements for Leslie Salt Company, Redwood City Facility, November 1982; WDID 2417125001, Order No. 88-163, NPDES No. CA0028690, Waste Discharge Requirements for Leslie Salt Company, Redwood City Facility, November 1988; Administrative Extension of NPDES Permit Nos. CA0028703, CA0028690, and CA0028681 for Cargill's Newark, Redwood City, and Napa facilities, November 1, 1993.
[24] SWRCB, Notice of Intent for General Permit to Discharge Stormwater Associated with Industrial Activity, WQ Order No. 91-13-DWQ, April 1, 1992; Notice of Intent for Existing Facility Operators to Comply with the Terms of the General Permit to Discharge Stormwater Associated with Industrial Activity, WQ Order No. 97-03-DWQ, June 11, 1997.

Property remains under General NPDES permit coverage, but, it is unclear whether discharges via the First Slough pipe still occur and, if so, at what frequency.

4. Recent State and Federal Permits

Cargill has had issues managing the bittern[25] it produces as a byproduct of its salt-making operations since enactment of the CWA in 1972 and a declining commercial market for bittern.[26] Prior to 1970, bittern was disposed of directly into the Bay from the ponds. Since 1972, Leslie Salt and Cargill have explored regulatory options for disposal of bittern into the San Francisco Bay. According to available and sometimes conflicting documentation, bittern has been: (1) stored onsite in various ponds at different times (ponds 4, 8E, 9, 9A, and 10)[27] (2) sent to the Newark plant via Cargill's transbay pipeline and/or barges,[28] and (3) discharged to San Francisco Bay in unknown quantities as late as 2005.[29]

By the 1980s, Cargill was subject to federal and state permits pertaining to operations improvement and maintenance (O&M) activities, such as dredge lock construction, levee repair, rip-rap renewal, and replacement of gates, pipes, pumps and siphons. In some instances, the O&M permits covered new system improvement work, such as spot repairs with land-based equipment of the crystallizer beds and installation of a new 16-inch pipeline and associated infrastructure to pump brines and bittern from the Redwood City plant to the Newark plant.[30] Cargill modified the pipeline to better control the brines and bittern within its entire South Bay salt production system as it was reduced by the transfer of vast acres to the South Bay Salt Ponds Restoration Project (SBSPRP). Starting in 1988, ACOE issued Regional General Permits, Nationwide Permits, and Individual permits under CWA Section 404 to Cargill for O&M covering existing levees and infrastructure for all salt plants.[31] Cargill has regularly stated that it reserves the right to argue that the type and location of the work described in the permits and work plans is outside Corps jurisdiction and/or exempt from 404 CWA permit requirements.

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[25] "Bittern" is the solution which remains after the salt has crystallized out of seawater or brine.

[26] Purcell, Rhoades and Associates, Report of Levee Integrity, Bittern Storage Facilities, San Francisco Bay Area, California, prepared for Leslie Salt, April 1, 1986.

[27] Regional Board. November 30, 2012. Inspection of Cargill, Inc.'s Redwood City Salt Plant in San Mateo County and Newark Plant in Alameda County; Regional Board, Staff handwritten notes for site inspections conducted on Leslie Salt's Newark and Redwood City facilities, August 9, 1990; Cargill Salt Completed Maintenance Reports: October 2002 (2001-2002), September 2000 (1999-2000), August 1999 (1998-1999).

[28] Regional Board staff notes, 1990.

[29] ACOE Permit # 17040E98 (issued to Leslie Salt Company), August 30, 1988; Permit # 19009S98, July 10, 1995; Permit # 2008-00146S, April 17, 2008; and Permit # 2008-00160S, September 10, 2010.

[30] Cargill Salt Completed Maintenance Reports, 2002, 2000 and 1999.

[31] ACOE Permits 17040E98, 19009S98, 2008-00146S, and 2008-00160S.

The Regional Board issued a water quality certification for Cargill's salt pond maintenance activities.[32] The San Francisco Bay Conservation and Development Commission (BCDC) also issued permits covering the O&M activities, under the McAteer-Petris Act.[33]

All three regulatory agencies required mitigation for the impacts associated with the ongoing O&M permits. Cargill took out of production a 49-acre salt evaporator in its Alviso Pond complex (B-1) and restored it to tidal marsh as compensatory mitigation for its O&M activities. Current Cargill O&M activities at the Redwood City Salt Ponds continue to be covered under the 404, 401, and McAteer-Petris Act permits.

III. The Jurisdictional Framework

A. Clean Water Act Jurisdiction

The Clean Water Act prohibits any discharge of pollutants, including dredged or fill material, into navigable waters except as permitted by the Act. 33 U.S.C. § 1311(a). The Act defines "discharge of a pollutant" broadly to include "any addition of any pollutant to navigable waters from any point source." § 1362(12)(A). The "navigable waters" over which the CWA exercises this protective jurisdiction are defined in Section 502(7) of the CWA as "the waters of the United States, including the territorial seas." 33 U.S.C. § 1362(7). ACOE and EPA regulations further define "waters of the United States" to mean:

> (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
>
> (2) All interstate waters including interstate wetlands;
>
> (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
>
> > (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
> >
> > (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

[32] Regional Board, Water Quality Certification for Maintenance Activities and System Improvements to be Conducted Between November of 2009 and November of 2019 at the Cargill Solar Salt Systems in Alameda and San Mateo Counties, Site No. 02-01-C-994, August 3, 2010.

[33] BCDC, Permit No. 4-93 (Issued on March 14, 1995, as amended through August 29, 2002), Amendment No. Three, issued to Cargill Salt Division, August 29, 2002.

(iii) Which are used or could be used for industrial purposes by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as waters of the United States under this definition;

(5) Tributaries of waters identified in paragraphs (s)(1) through (4) of this section;

(6) The territorial sea;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1) through (6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 C.F.R. 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

40 C.F.R. § 230.3(s); *see also* 33 C.F.R. § 328.3(a) (ACOE regulation).

For this jurisdictional determination, EPA considered the application of subsections 230.3(s)(1), (3), (4) and (7) to the Property. EPA also considered relevant case law, including the three Supreme Court decisions which interpreted the ACOE and EPA regulatory definition: *United States v. Riverside Bayview Homes, Inc.*, 474 U. S. 121 (1985), *Solid Waste Agency of Northern Cook Cty.* v. *Army Corps of Engineers,* 531 U. S. 159 (2001) (*SWANCC*), and *Rapanos v. United States*, 547 U.S. 715 (2006); and considered agency guidance and past agency practices.

B. The Clean Water Act vs. the Rivers and Harbors Act

Congress enacted the Rivers and Harbors Act of 1899 to promote water transportation and commerce by protecting the navigability of the nation's waterways. Section 13 of the RHA (known as the "Refuse Act"), 33 U.S.C. 407, which prohibited the discharge of "refuse" into any "navigable water" or its tributaries, or on the banks of a navigable water or its tributaries "whereby navigation shall or may be impeded or obstructed," provided an exception for refuse "flowing from streets and sewers . . . in a liquid state," and authorized the Secretary of War to issue permits for deposits of refuse if "anchorage and navigation will not be injured." 33 U.S.C. 407; original act at 30 Stat. 1152. Because of this focus on navigability, RHA jurisdiction over "navigable waters" is limited to waters "within the ebb and flow of the tide," and to non-tidal waters which were navigable in the past or which could be made navigable in fact by reasonable improvements. This jurisdiction is "at least as wide as the admiralty jurisdiction (though Congress could under the

Commerce Clause have gone further)."[34] *United States v. Stoeco Homes, Inc.* 498 F.2d 597, 610 (3rd Cir. 1974).

CWA jurisdiction is substantially broader than RHA jurisdiction. The CWA was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251. The Senate Conference Report for the 1972 Federal Water Pollution Control Act (now known as the CWA) explained that the term "navigable waters" was intended to "be given the broadest possible constitutional interpretation." S. Rep. No. 92–1236, 92d Cong., 2d Sess. p. 144 (1972). Numerous courts have recognized this intent in interpreting and applying Section 502(7) and the ACOE and EPA regulatory definition of "waters of the United States." See, e.g., *United States v. Riverside Bayview Homes, Inc.*, 474 U. S. 121 (1985), *Leslie Salt Co. v. Froehlke*, 578 F.2d 742 (9th Cir 1978), *NRDC v. Callaway*, 392 F. Supp. 685, (D.D.C. 1975). The Supreme Court has imposed limits on the reach of the regulatory definition as it applies to waters that are isolated from interstate commerce connections (*SWANCC*), and to non-permanent non-interstate waters that do not have a "significant nexus" with waters that do have interstate commerce connections (*Rapanos*).

C. The Lateral Extent of CWA Jurisdictional Waters

1. Tidal Waters

"Tidal waters" are "those waters that rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by hydrologic, wind, or other effects." 33 C.F.R. § 328.3(f). The landward limit of jurisdictional tidal waters is the High Tide Line (HTL). 33 C.F.R. § 328.4(b)(1). When adjacent non-tidal waters are also present, jurisdiction extends beyond the HTL to the ordinary high water mark (OHWM) of those adjacent waters, and when adjacent wetlands are present, jurisdiction extends to the limit of the wetlands. *Id.* at 328.4(b)(2) and (c).

The "high tide line" is:

> [T]he 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 foreshore 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

[34] RHA jurisdiction extends laterally across tidal waters to the MHW line, *Leslie Salt Co. v. Froehlke*, 578 F.2d 742 (9th Cir 1978); 47 Fed. Reg. 31794, 31797-98 (July 22, 1982), and includes marshlands and similar areas subject to inundation by mean high waters, even though some parts of these waters are too shallow to navigate. *Greenleaf-Johnson Lumber Co. v. Garrison*, 237 U.S. 251, 263 (1915) (federal authority over navigable waters "necessarily . . . extends to the whole expanse of the stream, and is not dependent upon the depth or shallowness of the water").

> 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.

33 C.F.R. § 328.3(d). The HTL for semi-diurnal waters, including the Pacific coast of the continental United States, is approximately the same as Mean High Water Springs (MHWS), or Spring High Water Tide (SHWT).[35] See Corps Engineer Manual EM 1110-2-6056, "*Standards and Procedures for Referencing Project Elevation Grades to Nationwide Vertical Datums*," Chapter 7 (Dec. 31, 2010).

2. Non-Tidal Waters

The lateral extent of jurisdiction for non-tidal waters is the OHWM. The OHWM is "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." 33 C.F.R. § 328.3(e). Jurisdiction extends beyond the OHWM of non-tidal waters to encompass adjacent wetlands, when they are present.

3. Diked Tidal Waters

The lateral extent of jurisdiction for former tidal waters that have been legally cut off from the ebb and flow of the tides is the OHWM. However, the history of the Property requires EPA to address the relationship between the pre-development conditions of the Property and the present conditions in which levees block tidal action within the Redwood City Salt Ponds.

The Ninth Circuit, in *Froehlke*, 578 F.2d 742, held that jurisdiction under the RHA extends to the MHW line "in accordance with its natural, unobstructed state is dictated by the principle recognized in *Willink*, supra, that one who develops areas below the MHW line does so at his peril." *See also Stoeco Homes*, 498 F.2d 597 (3rd Cir. 1974). Under the CWA, however, jurisdiction does not extend to former waters that "were in fact dry, solid upland as of the date of the passage of the [CWA]." *Froehlke* at 754. This principle was elaborated upon by the same court in *U.S. v. Milner*, 583 F.3d 1174 (9th Cir. 2009), which states that "[a]ny discharge on fast land would not actually be in the waters of the United States, and it would be potentially unfair to occupants of such land to hold them to the strictures of the CWA if the land has long been dry. Even if land has been maintained as dry through artificial means, if the activity does not reach or otherwise have an effect on the waters, excavating, filling and other work does not present the kind of threat the

[35] The height of MHWS is the average throughout the year (when the average maximum declination of the moon is 23.5°) of two successive high waters during those periods of 24 hours when the range of the tide is at its greatest. The National Tidal and Sea Level Facility at http://www.ntslf.org/tgi/definitions (accessed Oct. 14, 2015).

CWA is meant to regulate." Id. at 1195. The cases describe these converted non-jurisdictional areas of former waters as areas that have actually been filled, e.g., "fast land," "dry, solid upland," or "improved solid upland," and do not limit jurisdiction over those portions of the waters that may have been severed from the main body of water, but were not filled.

ACOE and EPA addressed this issue in developing the regulatory definition of "waters of the United States." In 1977, ACOE issued revised final regulations implementing its CWA Section 404 program, following adverse court decisions which found the original definition to be too limited. 42 Fed. Reg. 37122 (July 19, 1977). In the preamble, ACOE expressed its policy on previously impacted waters of the United States: "Our intent under Section 404 is to regulate discharges of dredged and fill material into the aquatic system as it exists and not as it may have existed over a record period of time." Id. at 37128. In 1980, EPA stated "[w]hen a portion of the Waters of the United States has been legally converted to fast land by a discharge of dredged or fill material, it does not remain waters of the United States subject to section 301(a). The discharge may be legal because it was authorized by a permit or because it was made before there was a permit requirement." 45 Fed. Reg. 85,336, 85,340 (Dec. 24, 1980).

ACOE has also addressed how the term "normal circumstances" in its regulatory definition of "wetlands" applies to the specific case of the Redwood City Salt Ponds.[36] In general, "normal circumstances" means that Section 404 jurisdiction over wetlands must be "determined on the actual, present use of the area." ACOE Regulatory Guidance Letters 82-2, 86-9, 90-7. ACOE's memorandum regarding application of the term to the Property states that because the hydrology was altered before enactment of the CWA, and on-site pumping is not done to continually alter the natural site hydrology, "the normal circumstances on the Redwood City plant site are to be viewed as the site exists today, with normal salt production operations . . . not the circumstances that existed decades ago . . ..

Accordingly, those former waters converted to fast lands before enactment of the CWA (or legally by permit) are no longer "waters of the United States" for purposes of the CWA. Those waters that have been severed from tidal influence, but which continue to be regularly inundated, are not fast lands and therefore require further analysis.

D. The Nature of the Salt Ponds and their Contents

1. The Salt Production Process

The salt production process begins when Cargill pumps raw sea water into evaporation ponds at its Newark facility, across San Francisco Bay from the Property.[37] The seawater is moved through a

[36] S. Stockton memo to South Pacific Division Commander, Oct 2, 2009. There are no known wetlands inside the salt ponds, so the ACOE guidances are not directly applicable, but indicate how ACOE previously approached the pre-CWA modifications of the site.

[37] This has not always been the case. The first pipe connecting the Redwood City and Newark facilities was permitted in 1951. The ponds used in the salt making process have also changed over time.

series of containment cells as the salinity increases. According to Cargill, after approximately four years of solar evaporation at the Newark facility, the saline water is transferred by pipe to the Redwood City Salt Ponds.[38]

The salt ponds are connected to each other. Water pumped from the Newark facility first enters Ponds 7a, 7b, 7c and 8w (the "pickle complex"), where additional solar evaporation occurs until the solution is saturated, at which point the highly saline water is transferred to Ponds 1-9, a series of "crystallizer" cells where the salt precipitates out of suspension. The residual bittern is pumped into Ponds 8e, 9 and 9a, where it is stored until sold, taken by barge to the Newark facility, or recycled back into the salt production process.[39]

The salt that remains on the floor of the crystallizer cells is mechanically scraped from the dry ground and loaded into trucks to be moved offsite. There is also a "desalting pond" (Pond 10) on the northwest side of the crystallizer ponds, where salt is further removed from the bittern liquid. A water intake is located on Pond 4, which connects to First Slough, where Cargill sometimes brings water directly in from the Bay.[40] See Figure 1. The entire salt production process involves only sea water from San Francisco Bay, and rainwater which falls directly into the ponds.

2. The Saline Waters of the Salt Ponds

ACOE's former Chief Counsel issued a memorandum directing its San Francisco District to apply certain legal criteria to the Redwood City Salt Ponds, which included a CWA jurisdictional analysis of the liquids contained in the salt ponds.[41] The CWA section of the memorandum states that the liquid brine and pickle piped to the Redwood City Salt Plant are not "water" and, therefore, the ponds that hold the pickle and bittern liquids cannot be "navigable waters" for purposes of the CWA. Although this CWA analysis has no legal effect because EPA has exercised its special case authority to make the CWA jurisdictional determination for the Redwood City Salt Ponds, EPA addresses it here because the memorandum is part of ACOE's record of its RHA jurisdictional determination, and because Cargill has made similar arguments in the past. [42]

As an initial matter, the fundamental error of this analysis is that it attempts to correlate the regulatory definition of "waters of the United States" with the composition of the water that is pumped into the ponds, rather than to the physical and hydrologic characteristics of the ponds. This is discussed further in Section III.E.3, below.

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[38] AJD Application, Attachment B, at 3-4.

[39] Id.

[40] Letter from Mr. Robert Douglass, Cargill Salt, to Lt. Col. Timothy S. O'Rourke, District Engineer, ACOE, San Francisco District, regarding Disclaimer of Jurisdiction for Cargill's Redwood City Plant Site, February 28, 2002. See Section VII.C.2.

[41] Earl Stockdale, Chief Counsel, ACOE, *Legal Principles to Guide the Approved Jurisdictional Determination for the Redwood City Salt Plant*, Jan. 9, 2014 (RHA AJD, Attachment 4).

[42] *See, e.g.*, Edgar Washburn letter to ACOE, Aug. 17, 1993.

In addition, ACOE previously rejected such a claimed distinction between "liquids" and "water" as applied to the contents of other San Francisco Bay salt ponds. In determining jurisdiction over the eastern portion of Cargill's Napa plant in 1994, ACOE specifically considered and rejected a legal analysis from Cargill asserting that brine was not "water" for purposes of the CWA.[43]

The CWA and the agencies' jurisdictional regulations do not contain any express or implied limitations on the types of aqueous solutions that constitute "water" for jurisdictional purposes. The purpose of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." If there were a point at which industrial activities could alter the composition of liquid water so significantly as to remove the water body itself from the jurisdiction of the Act, Congress presumably would have made its intent quite clear.

Indeed, such an approach would have create an enormous disincentive to achieve the goals of the CWA. Waters of the United States do not lose their jurisdictional status simply because pollutants or other liquids are introduced into the physical water bodies. Following this principle, increasing discharges of pollutants or using the water for an industrial activity would move a waterbody further from the scope of regulation, as opposed to increasing the stringency of needed CWA controls. It is difficult to imagine that Congress could have intended such a perverse incentive.

As applied to the Redwood City Salt Ponds, the CWA does not establish salinity limits for purposes of jurisdiction. In fact, the chemical properties of the Redwood City Salt Ponds are not particularly unique among jurisdictional waters. The ACOE and EPA regulatory definition specifically covers natural and human-altered high-salinity waters such as salt ponds, playas and lakes that exhibit salinity concentrations similar to the Redwood City Salt Ponds. The Corps regularly asserts jurisdiction over waterbodies that are perennially or seasonally hypersaline, such as Pyramid Lake, Mono Lake, and Great Salt Lake based on their navigability or hydrologic connections. *See also*, *San Francisco Baykeeper v. Cargill Salt Div.*, 481 F.3d 700 (9th Cir. 2007) (pond containing rainwater mixed with Cargill's "waste residue that is heavily saline and contains other pollutants" found to be non-jurisdictional due to its hydrologic isolation, but considered "water").

Also, the Redwood City Salt Ponds support biological functions associated with the Bay ecosystem. The salt ponds provide certain types of food and habitat to certain species of microorganisms, invertebrates and birds, specifically because of their chemical composition. See Section VII - Significant Nexus.

However, it is not necessary to show that the salt ponds support biological functions to meet the CWA jurisdictional test. The opening sentence of the CWA states that the objective of the Act is to "*restore* and protect the chemical, physical, and biological integrity of the nation's waters." 33 U.S.C. § 1251(a) (emphasis added). The term "restore" indicates that the Act intends to reach waters whose chemical, physical, or biological integrity is impaired. Moreover, the Act does not require the cessation of all discharges; the CWA anticipates that even waters protected by technology-based limitations may still receive discharges that, among other things, inhibit "the

[43] MFR File No. 20275E29, Dec. 20, 1994; Washburn letter Aug. 17, 1993.

protection and propagation of a balanced population of shellfish, fish, and wildlife." *Id.* at § 1312(a). In the case of such enduring impairments, water quality-based effluent limitations are then imposed that must "reasonably be expected to contribute to the attainment or maintenance of such water quality." *Id.* The process through which technology-based and water quality-based effluent limitations are established makes clear that CWA jurisdiction over navigable waters encompasses waters with impaired biological integrity.

3. The Nature of the Salt Ponds

Cargill and its predecessors configured the levees on the Property to move highly saline water sequentially through a series of ponds to produce salt and hold residual bitterns. The levees are intended to separate the salt production process from direct inputs of San Francisco Bay water, except for limited circumstances when water is pumped in or out of the ponds, and occasions when Cargill moves its floating dredge, *The Mallard*, into the ponds. The ponds were not excavated from dry lands. Even though this part of San Francisco Bay has been committed to the production of salt for many years, the configuration and use of the ponds for industrial purposes does not preclude them from being waters of the United States. *See U.S. v. Moses*, 496 F.3d 984 (9th Cir. 2007) ("we do not see how a mere man-made diversion, however long ago undertaken, could change Teton Creek from a water of the United States into something else").

The first question is whether the ponds retain the physical attributes of water bodies. Prior to levee construction, the Property had been marshland subject to inundation during periods of high tide, with an extensive and dense network of tidal sloughs subject to regular tidal action.[44] Over time, the construction of levees cut off the direct tidal influence on those waters. Although the sloughs and wetlands were severed from the Bay before they enactment of the CWA, the areas behind the levees were not filled and converted to fast lands. *See, e.g., United States v. Ciampitti*, 583 F.Supp. 483 (D.N.J 1984), *aff'd* 772 F.2d 893 (3rd Cir. 1985), *cert. denied*, 467 U.S. 1014 (1986) (former tidal waters that were cut off from tidal action and filled but which had converted to wetlands are jurisdictional because they were not converted to "dry lands"). Some of the pond bottoms, most notably the salt crystallizers, were manipulated, but all of the ponds have remained below the HTL from the nineteenth century through today. All of the pond bottoms are below the local MHW of San Francisco Bay today.[45] See Figures 4a and 4b.

In litigation over former Cargill salt ponds across San Francisco Bay, in Newark, California, the Ninth Circuit Court of Appeals held that the salt crystallizers and other salt production pits were aquatic features within the scope of the regulatory definition of "other waters," and were not excluded even if they "are in fact dry most of the year."[46] *Leslie Salt Co. v. United States*, 896 F.2d

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[44] SFEI 2016.

[45] ERG / Towill Inc., *Determination of MHW and Land Surveying Investigation Redwood City Salt Works* [Draft], June 2016, prepared for EPA, June 2016.

[46] This was the first step in the analysis; ACOE still needed to show on remand that the crystallizers and salt pits had sufficient connections to interstate commerce to be jurisdictional. Also, the court found that the Newark ponds had

354, 360 (9th Cir. 1990). Also, ACOE previously asserted Section 404 jurisdiction over one of Redwood City Salt Plant's former bittern ponds in 2002, when it permitted the development of the Westpoint Marina on the northern half of the Redwood City Salt Plant's "Pond 10."

Had the areas enclosed by the levees been filled, or dewatered and converted to fast land by residential or commercial development, prior to enactment of the CWA, the limits of the "waters of the United States" would have permanently changed. This is the case for the levees and building pads on the Property that are not jurisdictional. However, the areas enclosed by the levees continue to be regularly inundated with water taken from San Francisco Bay and precipitation.

Accordingly, the construction of levees which severed tidal sloughs and wetlands from tidal influence, the continued use and maintenance of the ponds for salt production, the continued introduction of concentrated brine and rainwater into the ponds, and the continued existence of the pond bottom elevations at or below their interior OHWMs, as well as local MHW for San Francisco Bay, has not converted the ponded areas from "waters" into something else. Having established that they are "waters," the salt ponds must be evaluated to determine if they are "waters of the United States" for purposes of the CWA.

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been excavated in dry land above the high tide line, therefore they were not evaluated as potential impoundments of preexisting waters. *Id*.

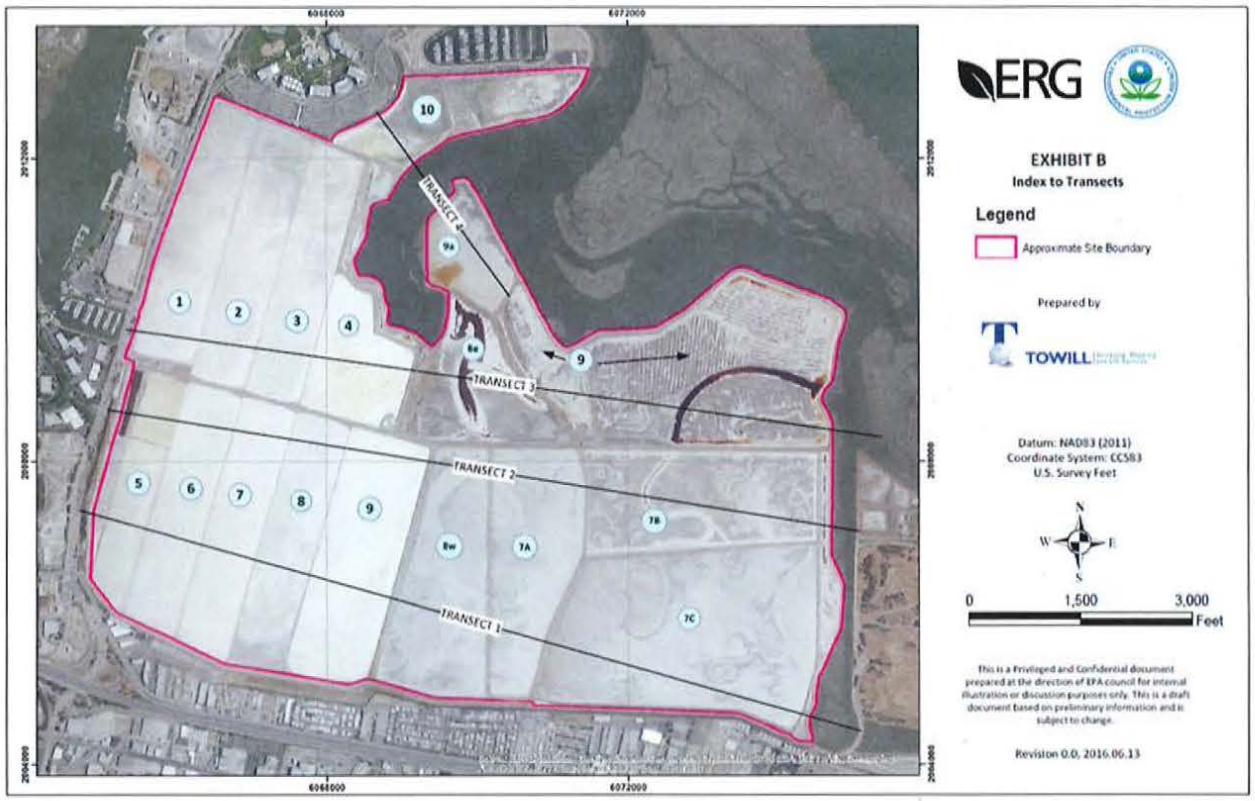

Figure 4a. Vertical and Horizontal Depth Characterization of Redwood City Salt Ponds in Relation to Mean High Water, Index to Survey Transects (*from Appendix X*).

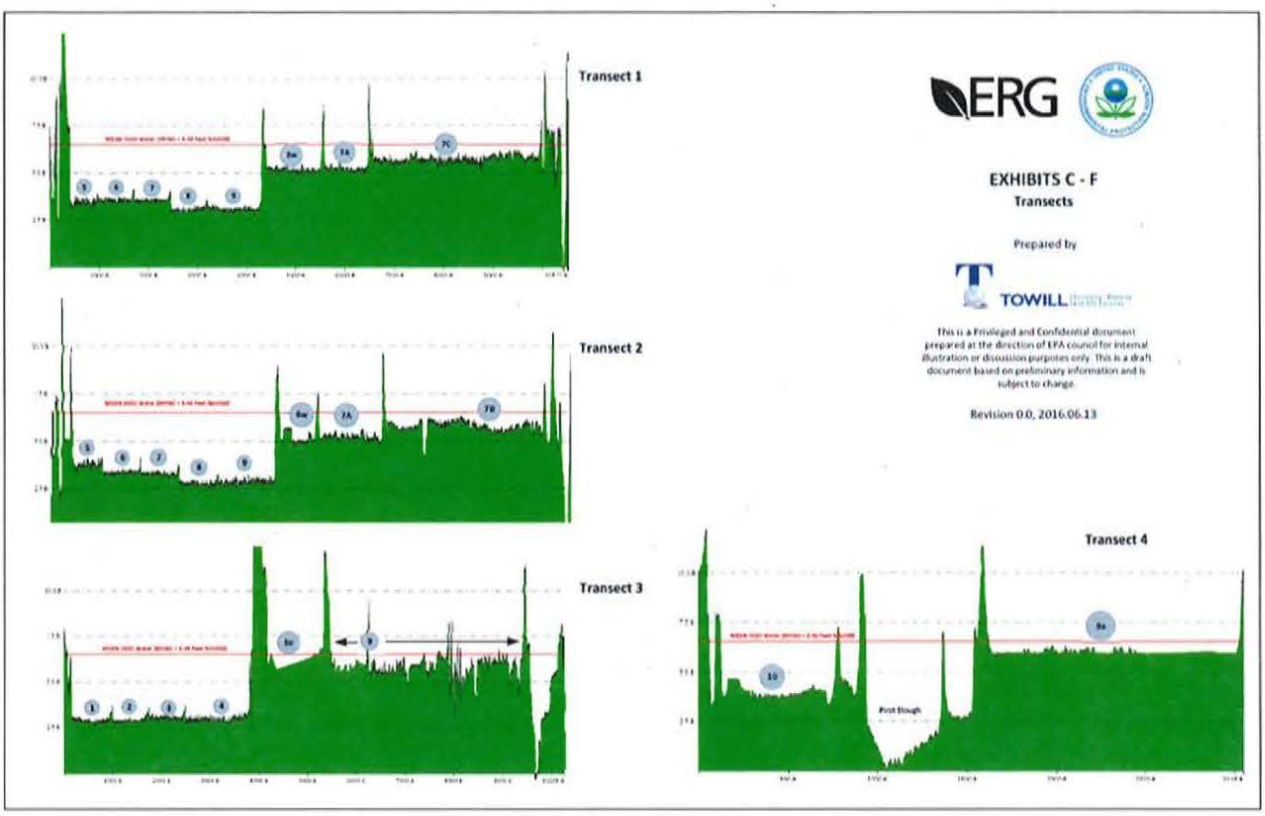

Figure 4b. Vertical and Horizontal Depth Characterization of Redwood City Salt Ponds in Relation to Mean High Water, Transects 1-4 (*from Appendix X*).

IV. Navigable Waters

A. The Legal Criteria

"All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide" are "waters of the United States" under 33 C.F.R. § 328.3(a)(1) and 40 C.F.R. § 230.3(s)(1).

1. Past and Current Commercial Navigability

"The capability of use by the public for purposes of transportation and commerce affords the true criterion of the navigability of a river, rather than the extent and manner of that use. If it be capable in its natural state of being used for purposes of commerce, no matter in what mode the commerce may be conducted, it is navigable in fact, and becomes in law a public river or highway." *The Montello*, 87 U.S. 430, 20 Wall. 430, 441, 442, 22 L. Ed. 391 (1874). Courts have applied the navigability test for different purposes and emphasized different factors over the past 150 years, but they have generally weighed the evidence of navigability liberally.

"[T]he true test of the navigability of a stream does not depend on the mode by which commerce is, or may be, conducted, nor the difficulties attending navigation. If this were so, the public would be deprived of the use of many of the large rivers of the country over which rafts of lumber of

great value are constantly taken to market." *Id.*, *see also United States v. State of Utah*, 283 U.S. 64, at page 76, 51 S. Ct. 438, 441, 75 L. Ed. 844 (1931). "The irregularity of commercial trips, or the absence of an established trade route, is irrelevant. Trips which occur only when there is a sufficient commercial demand prove navigability as completely as those which move on regular schedule." *United States v. Appalachian Electric Power Co.*, 311 U.S. 377, 61 S. Ct. 291, 85 L. Ed. 243 (1940) (citing *United States v. Utah*, 283 U.S. 64). "The view that the commerce over the relevant stretch must be an appreciable part of the river's total commerce is unsound." *Id.*

"The size or character of the vessels used is immaterial." *Id.* Nor is it necessary that the water be used for the transportation of water-borne freight by a carrier whose purpose is to make money from the transportation. *Utah v. United States*, 403 U.S. 9, 11, 29 L. Ed. 2d 279, 91 S. Ct. 1775 (1971) (ranchers transporting their own livestock from mainland to islands in the Great Salt Lake make the lake a highway of commerce).

However, "[e]xceptional use, or susceptibility of use, in times of temporary high water or under other abnormal conditions, is insufficient." *Appalachian Electric Power Co.* "The implied authority over interstate navigable streams arises solely from the fact that they are natural highways of interstate commerce. It does not derive from the fact that they are water but from the fact that they are natural instrumentalities of interstate commerce." *Id.*

When a water body meets the navigability test, federal jurisdiction applies to the entire water body, including portions that may not be separately navigable. The extent of federal jurisdiction over commercially navigable waters "necessarily . . . extends to the whole expanse of the stream, and is not dependent upon the depth or shallowness of the water." *Greenleaf-Johnson Lumber Co. v. Garrison*, 237 U.S. 251, 263 (1915); *see also Froehlke,* 578 F.2d 742 (9th Cir 1978) (RHA jurisdiction extends laterally across tidal waters to the MHW line).

2. Susceptibility to Commercial Navigation

Water bodies that "may be susceptible to use in interstate or foreign commerce" also meet the navigability test, even if they are not currently used and have not been used in commerce in the past. 33 C.F.R. § 328.3(a)(1). A water's capacity of navigation "may be shown by physical characteristics and experimentation as well as by the uses to which the streams have been put." *United States v. Utah*, 283 U.S. at 83. Susceptible waters also include waterways that were never navigable but which may become so with reasonable improvements. *Appalachian Electric*, 311 U.S. at 408.

Navigable capacity has been demonstrated by the presence of commercial recreational boating, *Alaska v. Ahtna, Inc.*, 891 F.2d 1404 (9th Cir. 1989), and by test runs of canoes specifically to determine whether a stream was navigable. *FPL Energy Maine Hydro LLC v. FERC*, 287 F.3d 1151 (D.C. Cir. 2002). Some courts have held that commercial navigation includes interstate travelers' use of recreational use of vessels on intrastate waters. *See, e.g., United States v. Byrd*, 609 F.2d 1204, 1210-11 (7th Cir. 1979) ("We conclude that Congress constitutionally may extend its regulatory control of navigable waters under the Commerce Clause to wetlands which adjoin or are contiguous to intrastate lakes that are used by interstate travelers for water related recreational purposes as defined by 33 C.F.R. § 209.120(d)(2)(i)(G) and (H) (1977))."

Susceptibility to commercial navigation also includes the potential for "reasonable improvements." "To appraise the evidence of navigability on the natural condition only of the waterway is erroneous." *Appalachian Electric*, 311 U.S. at 407. "In determining the navigable character of (a river) it is proper to consider the feasibility of interstate use after reasonable improvements which might be made. *Id.* at 409; *see also, Rochester Gas & Electric Co. v. FERC*, 344 F.2d 594, 596 (2d Cir. 1965); *FPL Energy Maine Hydro*, 287 F.3d at 1155. It is not necessary that the improvements be actually completed or even authorized. *Appalachian Electric* at 408.

3. Artificial Obstructions to Navigation

A key issue for this jurisdictional determination is whether the artificial severance of tidal sloughs from the larger navigable waterbody alters the legal status of these sloughs under 33 C.F.R. § 328.3(a)(1).

The navigability definition incorporates into the CWA the scope of jurisdiction long recognized by the doctrine of "indelible navigability," which holds that once a body of water is deemed to be navigable, it remains navigable as a matter of law, in perpetuity. See, e.g., *U.S. v. Milner*, 583 F.3d 1174, 1195 n. 15 (9th Cir. 2009). This doctrine derives from the Commerce Clause and, prior to passage of the CWA, had been applied many times to find that construction of man-made obstacles does not divest Congress of its authority to regulate waterways that are no longer navigable-in-fact. See, e.g., *Appalachian Electric Power Co.*, 311 U.S. 377 ("When once found to be navigable, a waterway remains so"); *Economy Light & Power Co. v. U.S.*, 256 U.S. 113, 41 S. Ct. 409, 65 L. Ed. 847 (1921); *United States v. Rio Grande Dam & Irrigation Co.*, 174 U.S. 690, 19 S. Ct. 770, 43 L. Ed. 1136 (1899).[47] One of the primary rationales for the doctrine is that man-made obstructions to navigation, such as dams, dikes and levees, are capable of removal.

In *Economy Light & Power*, the United States sought an injunction under the RHA against the building of a dam across the Desplaines River. Appellee argued that the Desplaines River was not navigable within the meaning of the RHA. Until at least 1825, the Desplaines River had been navigable and used commercially. Several natural and human-made events subsequently rendered the river impassable and, at the time the case was decided, the river had "been out of use for a hundred years." *Economy Light*, 256 U.S. at 124. The most significant of these events was the building of other dams "without authority from the United States." *Id.* at 118. The Court found the river remained navigable under the RHA even though "there was no evidence of actual navigation within the memory of living men." *Id.* at 117. "[A] river having actual navigable capacity in its natural state and capable of carrying commerce among the States," the Court held, is within the power of Congress to preserve for purposes of future transportation, even though it be not at present used for such commerce, and be incapable of such use according to present methods, either by reason of changed conditions or because of artificial obstructions." *Id.* at 123.

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[47] This line of cases must be distinguished from those cases interpreting navigability for purposes of determining admiralty jurisdiction. See, e.g., *Adams v. Montana Power Co.*, 528 F.2d 437, 440 (9th Cir. 1975): "The damming of a previously navigable waterway by a state cannot divest Congress of its control over a potentially useful artery of commerce, since such obstructions may always be removed. . . . However, if the damming of a waterway has the practical effect of eliminating commercial maritime activity, no federal interest is served by the exercise of admiralty jurisdiction over the events transpiring on that body of water, whether or not it was originally navigable."

This principle of continued jurisdiction over artificially severed portions of navigable waters applies to CWA jurisdiction. The Ninth Circuit addressed the question directly, in a case where an old irrigation diversion rendered a portion of the navigable waters dry, long before passage of the CWA. *U.S. v. Moses*, 496 F.3d 984 (9th Cir. 2007), *cert. denied* 128 S. Ct. 2963 (2008). In *Moses*, the court stated, "we do not see how a mere man-made diversion, however long ago undertaken, could change Teton Creek from a water of the United States into something else." *Id.* at 989. Similarly, in *Benjamin v. Douglas Ridge Rifle Club,* 673 F. Supp. 2d 1210, 1218 (2009) the Oregon district court held that man-made berms which severed the historic connection between wetlands and a creek, "cannot eliminate the CWA's jurisdiction over a water of the United States."

As with Teton Creek in the *Moses* decision, the jurisdictional question here relates to a portion of the navigable-in-fact waterbody that was rendered non-navigable by an artificial obstruction prior to passage of the CWA.

B. Past Commercial Navigation

It is undisputed that San Francisco Bay is a navigable-in-fact water of the United States due to its current uses, and long history of use in interstate and foreign commerce. Waters of the Bay, in the form of major and minor tidal sloughs, extended laterally throughout the area of salt marsh that was diked off from the Bay to become the Redwood City Salt Ponds. In many parts of the salt ponds, the remnant channels are still visible in aerial photographs.

To the extent that these historic portions of San Francisco Bay have survived (i.e., have not been legally converted to fast lands), the waters remain subject to federal jurisdiction under the CWA. In addition, EPA conducted an investigation of historical records pertaining to commercial activities in the area of the Redwood City Salt Ponds.

1. Evidence of Past Navigability

The historic evidence shows that the major sloughs within and near the Redwood City Salt Ponds site were of sufficient size and depth to be navigated by small vessels. There is significant documentation of commercial navigation in nearby Redwood Creek and other connected waters, as well as commercial harvesting oyster and brine shrimp fisheries, but not specifically within the bounds of the current Property.

a) The pre-development geography of the area

Two large navigable San Francisco Bay channels originally bordered and intersected the area that is now the Redwood City Salt Ponds (See Figure 5):

(1) The Redwood Creek estuary on the west side. Steinberger Creek, a significant tidal channel of Redwood Creek extended into the southern section of the existing crystallizer ponds (Ponds 5-8). Two other Redwood Creek sloughs extended into the area subsequently developed into north central portion of the crystallizers (Ponds 1-2 and 5-6).

(2) The Westpoint Slough complex on the northern and eastern sides. Westpoint Slough is the largest arm of the Redwood Creek estuary, with two major branches, First Slough and Flood Slough.

(a) First Slough bisected the Property, and its many tributary sloughs extended throughout the area subsequently developed into crystallizer ponds 1-4 and 6-9, and bittern and pickle ponds 7A, 8e, 8w, and 9.

(b) The Flood Slough arm and its tributary sloughs extended into the area subsequently developed into bittern and pickle ponds 7B, 7C, 9 and 9a, and bordered much of the east side of the Property.

In 1858, the United States Coast Geological Survey (USCGS) took depth measurements of some of the main tidal channels in and around the Property from boats in Redwood Creek, Westpoint Slough, First Slough, and other channels. See Figure 6. By the late 1800's, sedimentation in the tidal sloughs raised their bottom elevations and dredging was required to keep Redwood Creek open to shipping.

Figure 5. Outline of Contemporary Salt Ponds Boundaries Overlaid on 1897 USCGS T-Sheet Resurvey (Courtesy of NOAA) (*from Appendix X*)

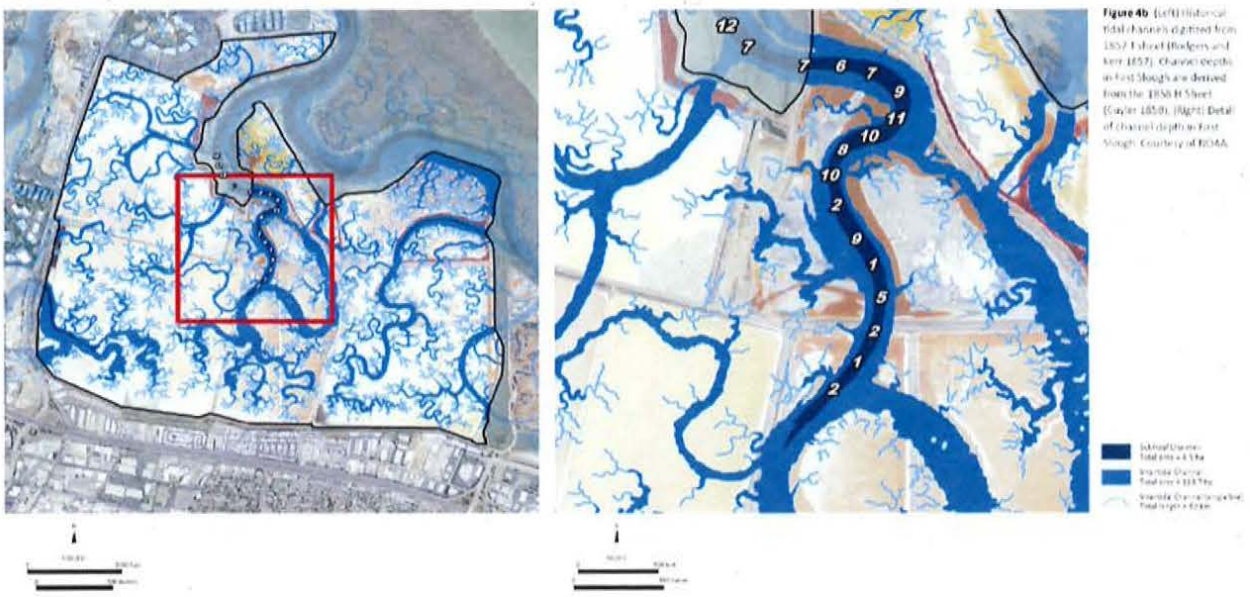

Figure 6. Historic Tidal Channels Digitized from 1857 T-Sheet. Channel Depths in First Slough are Derived from the 1858 H-Sheet. (Right) Details of Channel Depth in First Slough. (*from Appendix X*)

b) The history of commerce and commercial navigation

There is substantial documentation of historical commercial navigation within and around the Redwood Creek estuary. As early as the 1830's, animal hides were shipped through the estuary from a navigation point approximately four miles inland from the Bay. Starting around 1851, the Redwood Creek estuary developed as a center for the commercial shipping of lumber, grains, livestock, and other commodities. A portion of the main channel was developed into the Port of Redwood City and by the early twentieth century, "fishers, hunters, stockmen, and salt makers all participated in a thriving economy based on the estuary and its shoreline."[48] The town of Mezesville, later renamed Redwood City, developed inland from the port.

As with the rest of the Bay economy, historic commerce in this area was closely tied to the productivity and relative access of the shoreline baylands. From the 1870's to 1930's, oysters were commercially harvested from around the western edge of the South Bay, including the mudflats of Redwood Creek, Westpoint Slough, Greco Island, Coyote Point and Dumbarton Bridge (Figure 7).[49] The Morgan Oyster Company, the primary land holder, established oyster beds on approximately 3,000 acres of tidal mudflats. They utilized specialized shallow-draft, flat-bottomed schooners to harvest the oysters from the tidal flats and transport the catch to nearby ports. Chinese shrimp fishermen also took advantage of the mudflats, harvesting shrimp from the flats via shallow-draft

[48] SFEI 2016 at 31-32.

[49] Blue World Web Museum, Maritime Art Collection (webpage depicting model of the Oyster Schooner Louisa Morrison), accessed January 2016. http://www.blueworldwebmuseum.org/item.php?category=&title=Half-Model_of_the_Oyster_Schooner_Louisa_Morrison&keyword=oyster+schooner&id=63&catid= ; Darold Fredricks, *Peninsula Oyster Farms*, Rediscovering the Peninsula, The Daily Journal, May 26, 2008, accessed January 2016. http://www.smdailyjournal.com/articles/lnews/2008-05-26/peninsula-oyster-farms/92459.html

sailing junks and nets.[50] These vessels allowed them to access waters as shallow as 4 feet. In San Mateo County, the shrimpers staked nets in the mudflats in the northern vicinity of Dumbarton Bridge and off Bair Island.

After the collapse of the oyster industry in the 1930's, Pacific Portland Cement Company (later Ideal Cement) dredged oyster shell hash from defunct oyster beds around Redwood Creek and Westpoint Slough in order to make cement. Their main cement-making plant was located in Redwood City, which operated until 1971. The San Francisco Shipbuilding Company operated adjacent to the cement company until 1918, utilizing the local cement to make concrete ships. [51]

Native Americans and early Europeans utilized the South Bay marshes to cultivate salt as a valuable commodity.[52] The Ohlone Tribe accessed the tidal marsh channels either by foot or in shallow-draft tule boats. Early in the twentieth century, commercial salt production began in earnest with the consolidation of shoreline parcels and large-scale levee construction around the South Bay.

By the 1950's, various salt work operations in Redwood City were fully consolidated under Leslie Salt. The salt facility's proximity to the deep-water commercial channel as well as access to bay water for salt operations allowed for substantial commercial vigor. However, by 1974 Leslie Salt scaled down salt production significantly, and other niche industries such bittern by-products and fisheries made use of any idle salt ponds.

Beginning in the 1960's, a significant brine shrimp fishery existed in the constructed salt ponds throughout the South Bay. In 1964, Leslie Salt and Steinhart Aquarium formed the San Francisco Fish Farms (later San Francisco Bay Brand) to sell live brine shrimp produced within San Francisco Bay salt ponds to tropical fish hobbyists. At that time, San Francisco Bay was one of only two commercial sources for brine shrimp in the United States (the other being the Great Salt Lake).[53] High production levels of the shrimp could only be achieved via exploitation within the salt ponds, as production is achieved at salinity levels between 80-250 parts per thousand (ppt). Brine shrimp, or *Artemia franciscana* cysts, were harvested from the salt ponds using specialized flat-bottomed skimmer boats from which large dip nets were deployed.[54] From the 1970's to 2000, approximately 1.5 million pounds (680 tons) of brine shrimp were harvested annually from the South Bay salt ponds. California Department of Fish and Wildlife (CDFW) fishery data from the mid-1980's provides value ranges for the brine shrimp from 5 cents to 3 dollars per pound, while a table from the year 2000 for an East Bay landing location lists 460,000 pounds brine shrimp caught for a value of 1 cent per pound.[55] An additional robust fisheries specific to the South Bay salt ponds thrived in the 1960's to 1980's, where fishermen harvested longjawed mudsucker and

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[50] FoundSF, webpage for digital archives of San Francisco, specifically for Chinese Shrimp Farmers, accessed on January 6, 2016. http://www.foundsf.org/index.php?title=Chinese_shrimping_village .

[51] SFEI 2016 at 32-33.

[52] Id. at 29-30.

[53] Food and Agriculture Organization of the United Nations (FAO), Cultured Aquatic Species Information Programme, Artemia spp., text by G. Van Stappen, in FAO Fisheries and Aquaculture Department, updated October 11, 2011, cited January 13, 2016. http://www.fao.org/fishery/culturedspecies/Artemia_spp/en

[54] J. Siu, personal communication with Bart Lane, private fisherman, January 2016.

[55] J. Siu, personal communication with Becky Ota, CDFW, January 2016.

topsmelt for the bait fish industry.[7] Despite the shallow depths of the salt ponds, modified craft were able to navigate these water bodies.

Figure 7. Historic Places of Interest in Proximity to Redwood City Salt Ponds (*from Appendix X*)

c) Summary

There is substantial evidence of commercial navigation in the immediate vicinity of the current-day Redwood City Salt Ponds, and more specific evidence of navigation in the major sloughs that historically reached into the site (First Slough and Redwood Creek). Many additional sloughs would have been navigable by small craft that were commonly used in the South San Francisco Bay to harvest oysters and shrimp. In addition, brine shrimp and bait fish were commercially harvested from area salt ponds. However, there is very little information on the specific sloughs and ponds that had been used for these purposes. The determinative factor is that the severed sections of the sloughs had been part of the expanse of the traditionally navigable waters of San Francisco Bay.

C. Current Commercial Navigation

Cargill's levees are periodically maintained, in part, by the floating, clamshell dredge, *The Mallard*, which accesses salt ponds from either of two dredge locks. *The Mallard* accesses the ponds via an excavated tidal channel at two pre-approved dredge lock locations adjacent to Bittern Ponds 9 and 9A. Figure 1. The following narrative of how *The Mallard* accesses the salt ponds is taken largely from descriptions contained in U.S. Fish and Wildlife Service (USFWS) (1995), WRA (2000), BCDC (1995) and BayKeeper (2015). See Figures 8a and 8b. *The Mallard* typically excavates a 40-

foot wide channel entrance through mudflats/salt marsh in order to float the dredge into the locks tidal pond. At high tide the dredge then closes the tidal breach to the lock entrance and subsequently excavates material to open the dike. Once the dredge is floating at a suitable elevation, it enters the salt pond. The dredge then closes the entrance channel to the salt pond. The salt pond channel must be dredged below the existing salt marsh surface elevation in order to maintain a minimum 4-foot draft for *The Mallard* to navigate. Some channels or borrow-ditches that are excavated for mud to repair dikes are extended with the salt ponds to provide navigation access across ponds to work areas. Once the dike maintenance/repair work is complete within the salt ponds, *The Mallard* exits by the dredge lock following the access process in reverse.

This use of *The Mallard* demonstrates the current physical capacity of the Redwood City Salt Ponds to support commercial navigation when the ponds are filled.

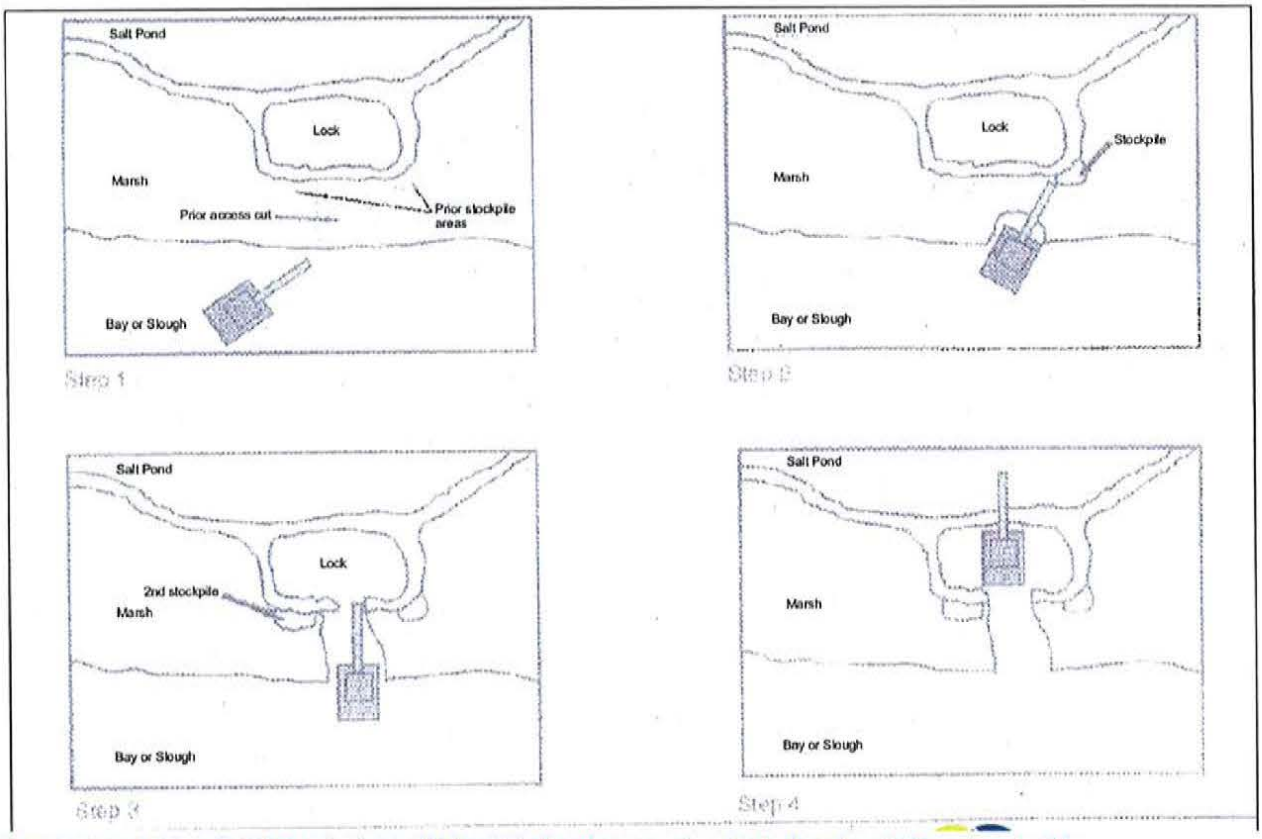

Figure 8a. Sequential Depiction of *The Mallard* accessing Salt Ponds via Dredge Locks

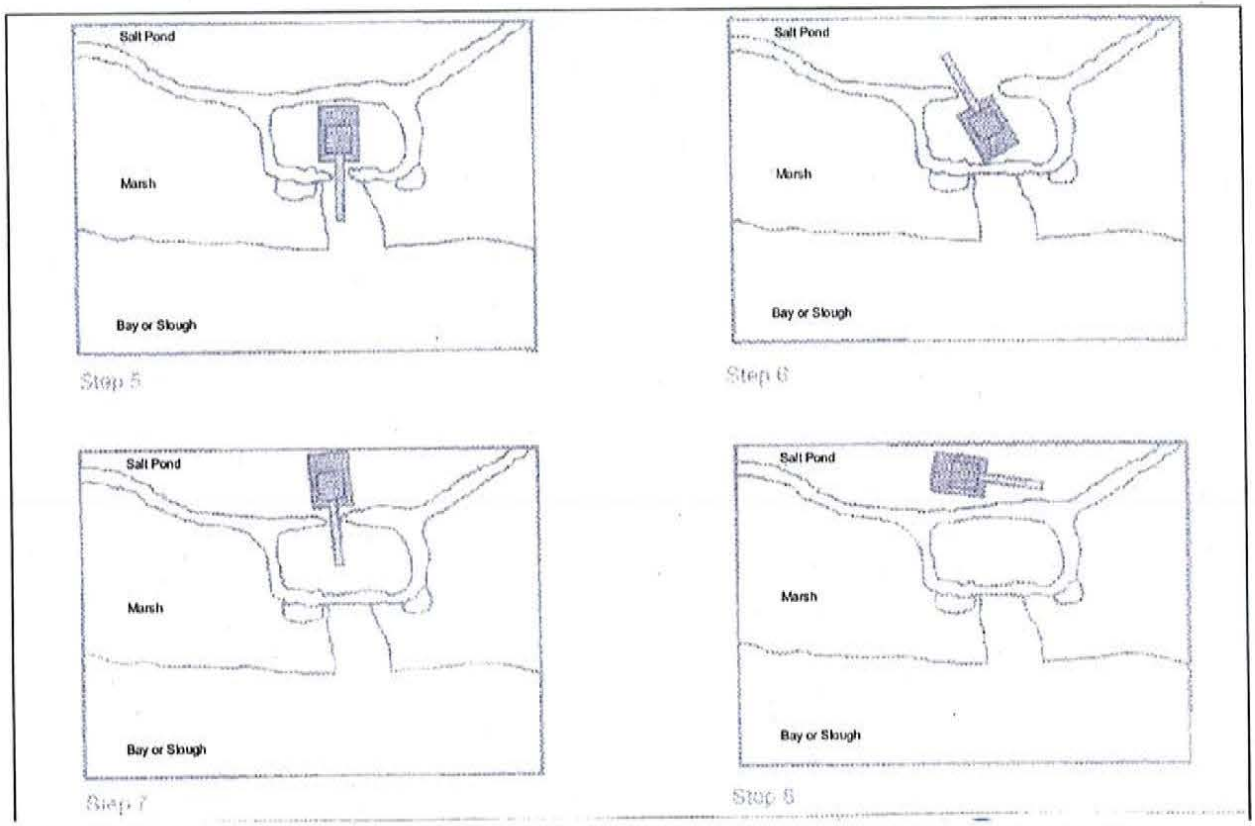

Figure 8b. Sequential Depiction of *The Mallard* accessing Salt Ponds via Dredge Locks, Cont.

D. Susceptibility to Commercial Navigation

EPA has evaluated the susceptibility of the Redwood City Salt Ponds for use in commercial navigation by considering the present physical characteristics of the ponds, and the navigable uses to which the ponds could be put with reasonable improvements. See criteria in Section IV.A.2. The preceding discussion of *The Mallard* demonstrates that the ponds currently have the physical capacity to support navigation of relatively large vessels. With reasonable improvements, the ponds are susceptible to interstate or foreign commerce and recreational navigation by virtue of their adjacency to San Francisco Bay, consistent with past and current uses of the Bay.

The Salt Ponds are nestled in a mosaic of land-uses fringing the shoreline of South San Francisco Bay, ranging from open-space preserves to commercial complexes and residential areas (Figure 1 and 2). The property is currently zoned as Open Space, with the west side of the property designated as Urban Reserve (i.e. planned "to expand the limits of the urbanized area of the City") and the east side as Preservation.[56] The entirety of the site is in the 100-yr floodplain. Redwood City General Plan has several policies concerning regulating and restricting new development within the 100-yr floodplain in order to reduce potential flooding damage and to minimize encroachment into sensitive bayland habitats. These include restoration of tidal marshes as

[56] Redwood City General Plan, October 11, 2010.

appropriate, encouraging contiguous wildlife habitat and movement corridors, consultation with outside stakeholders regarding the management and restoration of open space lands, and evaluation of the adequacy of upland-bayland transition zones for wildlife refuge during high-tide events and flooding. Numerous industrial and commercial enterprises abut the northwest portions of the site along Seaport Boulevard, including the Port of Redwood City, Pacific Shore Center office park, and Westpoint Marina. In addition, large-scale corporate business parks located within the Highway 101 transportation corridor (including the newly relocated Facebook Inc. campus in Menlo Park) bring thousands of people near the site every day.

Directly surrounding the site are Bedwell Bay Front Park and the Ravenswood Unit of the South Bay Salt Pond Restoration Project (SBSPRP) to the east, and federal and state agency ecological preserves to the north (Greco Island) and west (Bair Island). Other protected lands near the site are the Ravenswood Open Space Preserve and the Palo Alto Baylands Preserve to the southeast. Greco and Bair Islands and the Ravenswood Complex are all part of the USFWS Don Edwards National Wildlife Refuge (Refuge), which encompasses approximately 30,000 acres in total around the South Bay. The Redwood City Salt Ponds lie wholly within the proposed additions boundary for the Refuge that identifies potential lands of significant conservation value for acquisition in the South Bay.[57] The Refuge lands of the South Bay are a recreational destination for local, state, and international visitors with approximately 1.5 million visitors a year.[58] Public uses include environmental education, interpretive hikes, hunting, fishing, and wildlife observation such as birding. The regional economic value of the Refuge in providing these recreational opportunities to the local communities has been quantified: 2006 annual revenue included $8.3 million in employment income, $3.8 million in tax revenue, and an economic return of $44 per $1 Refuge budget expenditure. [12]

Ecological restoration of degraded tidal marshes and former salt ponds has occurred and is currently occurring in proximity to the site. See Figure 2. Salt marsh restoration is recognized to be locally and regionally significant and necessary for increasing services and benefits related to recreational use, ecological habitat improvement, endangered species preservation, flood protection, and coastal resiliency in response to sea level rise.[59] Activities associated with typical salt pond restoration include breaching/building/maintaining levees, grading/filling ponds, dredging/deepening ponds, ditches, and waterways, removing or constructing water impoundment structures, and restoring marsh tidal channels. Improvements related to increasing

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[57] USFWS, *Final Environmental Assessment: Potential Additions to San Francisco Bay National Wildlife Refuge, Alameda, San Mateo, and Santa Clara Counties*, California, March 1990.

[58] USFWS and California Department of Fish and Game (CDFG), *South Bay Salt Pond Restoration Project, Final Environmental Impact Statement/Report, Volume 1*, December 2007; Carver, E. and Caudill, J., Ban*king on Nature 2006: The Economic Benefits to Local Communities of National Wildlife Refuge Visitation*, USFWS, Division of Economics, September 2007.

[59] San Francisco Bay Area Wetlands Ecosystem Goals Project, California State Coastal Conservancy, *The Baylands and Climate Change: What We Can Do*, 2015, Baylands Ecosystem Habitat Goals Science Update 2015.

public recreational opportunities can include walking trails, water trails, wildlife observation infrastructure, and interpretive kiosks and exhibits.

The San Francisco South Bay salt ponds have been identified by numerous resource agencies (USFWS, EPA, ACOE, RWQCB, CDFW, BCDC and the Coastal Conservancy) to be logical and feasible locations for restoration of salt marsh after the termination of commercial salt production. The San Francisco Bay Plan calls for support of regional restoration goals for managed and unmanaged salt ponds as well as increasing wildlife compatible recreational opportunities.[60] Historically, Bair Island, Greco Island, and the Ravenswood Complex (SBSPRP) were formerly natural tidal marshes and mudflats fully or partially converted to commercial salt ponds.[61] Bair Island and Ravenswood are currently undergoing large-scale restoration efforts to enhance the Refuge.[62] As Greco Island was only partially diked in the past, the island successfully self-recovered once anthropogenic activities there were abandoned and the dikes collapsed. Greco Island is recognized as one of the largest remaining extents of relatively undisturbed tidal marsh within the Refuge.[63]

Restoration efforts near the Property have been demonstrated to be ecologically effective. The Redwood City Salt Ponds have equivalent landscape attributes as the Ravenswood Complex and Bair Island, and thus is subject to similar results with reasonable improvement. Once levees are breached, marsh sedimentation accretion rates have been higher than expected at the SBSPRP sites even with heavily subsided ponds.[64] Researchers for the SBSPRP have documented the doubling of counts and diversity for some bird guilds, and increased fish diversity, particularly native species, with salt pond restoration management.[65] South Bay salt ponds that have been decommissioned from salt production and are only minimally open to tidal waters have extremely high primary (approximately double the world's most productive estuaries) and secondary production rates, indicating high potential ecological value for wildlife.[66] Endangered species have

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[60] BCDC, San Francisco Bay Plan, 2012. http://www.bcdc.ca.gov/pdf/bayplan/Plan_Map_7.pdf

[61] H. T. Harvey & Associates, *Bair Island Restoration and Management Plan: Existing Biological Conditions*, June 05, 2000; USFWS and CDFG, Final EIS/EIR Bair Island Restoration and Management Plan, Don Edwards San Francisco Bay National Wildlife Refuge, Bair Island Ecological Reserve, Appendix C, June 2006; USFWS and CDFW 2007; Westpoint Marina and Harbor. 2015. Webpage titled 'History of Westpoint Harbor', accessed on December 11, 2015. http://westpointharbor.com/story/

[62] South Bay Salt Pond Restoration Project (SBSPRP). Webpage for 'Track Our Progress', accessed on September 28, October 13, December 1, 2015. http://www.southbayrestoration.org/track-our-progress/; USFWS 2015a, Webpage for Don Edwards San Francisco Bay, Bair Island, accessed on December 16, 2015. http://www.fws.gov/refuge/don_edwards_san_francisco_bay/BairIsland.html

[63] USFWS, *Comments regarding the Notice of Preparation of Environmental Impact Report for the proposed Saltworks Project, City of Redwood City, San Mateo County, California*, January 10, 2011.

[64] J.Siu pers. comm with USFWS and Coastal Conservancy, 2015.

[65] USFWS and U.S. Geological Survey (USGS), *2014 Annual Self-Monitoring Report Don Edwards San Francisco Bay National Wildlife Refuge, Freemont, California*, prepared for the California Regional Water Quality Control Board and National Marine Fisheries Service, 2015; Email correspondence between USGS and USFWS staff regarding summary of "Salt Pond Waterbird Survey Data Summary: September 2012 – August 2013" by J. Scullen et al., San Francisco Bay Bird Observatory, March 24, 2015.

[66] Thebault. J, Schraga, T.S., Cloern, J.E., and E.G. Dunlavey, *Primary production and carrying capacity of former salt ponds after reconnection to San Francisco Bay*, Wetlands, Vol.28, No.3, 2008, pp. 841-851.

returned to some of the restored areas, such as the California Ridgway's Rail and the Salt Marsh Harvest Mouse within the Alviso Complex ponds.[67] There is confirmed nesting of the threatened Western snowy plover at both Ravenswood and several of the Redwood City Salt Ponds (R7B, R7C, and 9).[68]

Tidal marsh restoration has spurred enhancement of water-based recreation and public access opportunities in the South Bay, where there is a noted lack of recreational watercraft access.[69] Safe and neighboring public launch sites for non-motorized small boats and human-powered crafts (kayaks, canoes, row boats, kiteboards, etc.) is a priority for expansion and enhancement of the San Francisco Bay Water Trail, designated by the California legislature in 2005 to provide the public with access to the San Francisco Bay.[70] Currently, there are only two designated Water Trail stations in the entire South Bay, Palo Alto Sail Station (within the Palo Alto Baylands Nature Preserve) and Alviso Marina County Park. SBSPRP is investigating a potential water craft launch point for Ravenswood, potentially near Flood Slough, where there is a recognized need for a San Francisco Water Trail station. Westpoint Slough and Redwood Point are common South Bay kayak destinations.[71] Several commercial recreational watercraft outfitters provide commercial kayak and canoe tours of nearby sheltered routes in the sloughs of Bair Island, First Slough, and Westpoint Slough. The launch point is typically the Port of Redwood City public boat launch, and kayakers note that the tide levels should be a minimum of 4 feet to navigate within the Bair Island sloughs.[72] The Bair Island Aquatic Center, just south of Bair Island Marina, provides a private rowing launch location. There are also opportunities for the public to actively engage in restoration actions at both Ravenswood and Bair Island sites, such as volunteer canoe trips to work on Bair Island pulling invasive plants or planting natives.[73]

Deeper draft recreational boats have a few locations to utilize in the Redwood Creek area. Westpoint Harbor is the newest marina in the South Bay, providing boat and small craft berths. Currently it is a private marina, but public access is planned in the future.[74] Another private marina, the Bair Island Marina, is located at the mouth of Redwood Creek in Redwood City. Two other marinas located near the Bair Island Marina (Pete's Harbor and Docktown Marina) recently

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[67] http://www.southbayrestoration.org/news/#topic3 .
[68] Wetland Research Associates, Inc. (WRA), *Draft Environmental Assessment: Cargill Salt Maintenance Activities*, BCDC Permit Application No. 4-93, October 1994; USFWS 2015c; Email correspondence, between USFWS staff regarding confirmed sightings of western snowy plover adult and chicks on Pond 9 levee, July 18, 2013.
[69] http://sfbaywatertrail.org/map/, http://www.ci.sausalito.ca.us/Modules/ShowDocument.aspx?documentid=4450
[70] Bay Access Inc. 2003, California State Coastal Conservancy, 2011.
[71] http://www.paddling.net/places/showReport.html?103, https://cowboygrrl.wordpress.com/tag/westpoint-slough/ .
[72] http://www.outbackadventures.com/trips_classes/kayaking/kayak_trips/bair_island/, https://www.rei.com/events/full-moon-kayak-tour-san-francisco-bay-area/redwood-city/121998 .
[73] http://www.savesfbay.org .
[74] J.Siu personal communication with West Harbor staff, December 3, 2015.

closed. The Port of Redwood City offers the only municipal public boat launch and fishing pier in the immediate area, and is located west of Seaport Blvd on Redwood Creek.[75]

Managed South Bay salt ponds provide commercial activities in the form of fishing and hunting. Within the Don Edwards Refuge, waterfowl hunting is managed on approximately 10,000-acres from October to January.[76] Waterfowl hunting occurs on Bair and Greco Islands, and in ponds 1 and 2 of the Ravenswood Complex.[77] Year-round fishing is permitted in the Refuge, either by boat or on fishing piers, although it is not allowed in small slough channels. Visitor counts in the Refuge for hunting and fishing were 3,800 and 3,700, respectively, in 2006.[12] As previously noted, brine shrimp historically provided a robust commercial harvest from Bay area salt ponds to supply 'sea monkey eggs' and fish food to the aquarium industry.[78] Today the bulk of brine shrimp harvested in America comes from the Great Salt Lake due to current global demand of approximately 2500-3000 tons of cysts per year.[79] However, the Bay salt ponds do occasionally provide brine shrimp cyst inoculum for large-scale harvesting in international salt operations.[80]

Future regional land-based planning efforts would further encourage public use and access of the area surrounding the Redwood City Salt Ponds. The San Francisco Bay Trail is a significant effort to link existing park and recreation facilities around the Bay to further public access.[81] Approximately 9 miles of proposed construction and improvement of the Bay Trail is planned in direct proximity to the Redwood City Salt Ponds.[30] Specifically, the SBSPRP's Ravenswood Complex, which has completed numerous access-related actions to date including constructing walking trails and installing interpretive stations and viewing platforms, will connect non-contiguous segments of the Bay Trail. One proposed trail segment west of the complex would be located on the levee to the south of the Redwood City Salt Ponds. Connecting the Bay Trail in this area will provide both a continuous recreational corridor as well as provide a potential local commuter route for the adjacent business parks.

The Redwood City Salt Ponds are susceptible to navigation in interstate or foreign commerce. They currently have the physical capacity to support navigation, and they may reasonably be improved to create useable navigable connections to the adjacent waters of San Francisco Bay, as demonstrated by existing salt pond restoration projects, the presence of commercial recreational watercraft outfitters in the region, and the potential for increased watercraft use.

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[75] SF Gate, *Sunday Drive: Port of Redwood City*, February 1, 2014, accessed on August 27, 2015. http://www.sfgate.com/outdoors/sundaydrive/article/Sunday-Drive-Port-of-Redwood-City-5196945.php

[76] USFWS, webpage for Don Edwards San Francisco Bay, Waterfowl Hunting Information, accessed on December 16, 2015 (USFWS 2015b). http://www.fws.gov/refuge/Don_Edwards_San_Francisco_Bay/hunting.html

[77] USFWS, *Don Edwards San Francisco Bay National Wildlife Refuge Final Comprehensive Conservation Plan*, 2011 (USFWS 2011b).

[78] Life Science Environmental Consultation and Restoration Services, *South Bay Salt Ponds Initial Stewardship Plan*, prepared for USFWS and CDFG, June 2003. http://www.sfbb.com/company.php# .

[79] FAO 2016.

[80] J.Siu personal communication with San Francisco Bay Brand staff, December 29, 2015.

[81] Association of Bay Area Governments (ABAG), *San Francisco Bay Trail Plan Summary*, 2015, accessed October 2015. http://baytrail.org/wp-content/uploads/2015/12/San-Francisco-Bay-Trail_-Bay-Trail-Plan-Summary.pdf

E. Ebb and Flow of the Tide

The Redwood City Salt Ponds contain numerous sloughs which had been subject to the ebb and flow of the tide prior to levee construction. ACOE evaluated the pre-construction status of some of these sloughs for its RHA determination, and concluded that only a limited number would have been below MHW at the time they were severed from tidal influence. EPA believes this determination was too narrow because ACOE misinterpreted the maps. However, for purposes of determining CWA jurisdiction over "waters which are subject to the ebb and flow of the tide," only the presence or absence of existing tidal influence is relevant.

ACOE determined that for the Eastern Section of the Property, which was developed for salt production in the 1940's pursuant to a RHA Section 10 permit for levee construction, certain "double-sided sloughs" marked on the 1857 and 1897 T-sheets continue to be subject to RHA jurisdiction because these sloughs had been below MHW prior to development and remained below MHW since the area was diked off from San Francisco Bay, and because ACOE retained jurisdiction pursuant to the terms of the Section 10 permit.

EPA's subcontractor, the San Francisco Estuary Institute (SFEI), has expertise in interpreting T-sheets and H-sheets, including knowledge of the mapping conventions of the US Coast Survey and the individual cartographers who mapped San Francisco Bay in the nineteenth century. As the SFEI report explains, the distinction between single line and double line depictions of tidal sloughs does not represent a different tidal elevation. "Because of the physical limits of how closely two parallel lines can be drawn before they converge, tidal marsh channels narrower than two pen-point widths had to be drawn as single lines. . . . Based on 20 measurements taken throughout the site, double-line channels were mapped to an average width of 8.5 feet before the channel was drawn with a single line. Thus, single-line channels may be as wide as about 8 feet and taper to smaller widths."[82] See Figures 5 and 6.

All of the sloughs marked on the 1897 T-sheet would have been subject to the ebb and flow of the tide. "It is clearly evident that the base elevations of all channels, including the headward reaches of first-order channels, are below MHHW."[83] Most of the upper order channels likely had bottom elevations below MHW. The T-sheets also show the approximate Mean Lower Low Water (MLLW) contour line in some of the larger channels.

ACOE did not address the former sloughs and marshlands in the Western Section of the Property, which was developed for salt production in the early twentieth century. The T-sheets depict a similar network of sloughs using double and single lines throughout this section, prior to the levee construction that began soon after the 1897 T-sheet was prepared. By approximately 1930, the operators in the Western Section had dredged the bottoms of most of the salt ponds and

[82] SFEI 2016, at 11.
[83] Id. at 49.

eventually obliterated the traces of some, but not all, original tidal sloughs. Their locations within the salt ponds have remained below MHW.

All of the tidal sloughs on the Property had been part of the waters of San Francisco Bay, subject to the ebb and flow of the tide, before they were cut off by levee construction. Since the levees were in place prior to the CWA, the interior ponds are not tidal waters for purposes of the CWA jurisdictional analysis. Therefore, the Redwood City Salt Ponds, including the former sloughs within salt ponds, do not meet the separate criteria for waters subject to the ebb and flow of the tide.

V. Impoundments of Waters of the United States

"All impoundments of waters otherwise defined as waters of the United States under this definition" are waters of the United States. 40 C.F.R. § 230.3(s)(4). The lateral limit of jurisdiction over impoundments is the ordinary high water mark of the impounded water.

Prior to construction of the Redwood City Salt Ponds in the early 1900's through 1951, the areas enclosed by the levees had been marshland containing an extensive network of subtidal and intertidal channels subject to the ebb and flow of the tide. Figure 5. The bottom elevations of these channels was below the MHHW mark, and for many channels, below the MHW mark. The elevation of the adjacent marsh was largely, if not entirely, between MHW and the HTL.[84] Figure 6. Construction of the exterior levees impounded the waters of these tidal waters. For decades, operators of the Redwood City Salt Ponds brought Bay waters into these impoundments for their salt-making operations. Until at least 1951, when Leslie Salt completed construction of its first pipeline connecting the Newark facility to the Redwood City, all water brought into the Redwood City ponds must have been taken in directly from the adjacent Bay, presumably through tidal gates, but possibly using pumps at times. EPA has little information regarding the frequency of this practice after the first transbay pipeline was completed, but understands that it has occurred from time to time until at least 2002.

ACOE has asserted jurisdiction over San Francisco Bay waters impounded by salt pond levees before and after passage of the CWA. In 1971 and 1972, the San Francisco District of ACOE published two Public Notices, stating that ACOE had changed its policy and would henceforth require permits for all "new work" on unfilled marshland property within the line of "former mean higher high water," whether or not the property was presently diked off from the ebb and flow of the tides.[85] Public Notice No. 71-22(a) states: "This is in elaboration of our previous Public Notice No. 71-22, dated 11 June 1971, announcing that the Corps of Engineers is now exercising its regulatory authorities within the area bound by the plane of the mean of the higher high water.

[84] SFEI 2016.
[85] Public Notice No. 71-22, June 11, 1971, and Public Notice No. 71-22(a), January 18, 1972.

Permits are required for all new work in unfilled portions of the interior of leveed areas below former mean higher high water."[86]

At a minimum, under (a)(4), and consistent with ACOE policy, those portions of the salt ponds that had been tidal channels subject to the ebb and flow of the tide have remained "waters of the United States." Impoundment, however, expands the size of the natural water body to the new OHWM. Since tidal action has been cut off within the salt ponds, (a)(4) jurisdiction over the salt ponds extends to the OHWM of the ponds that impounded (a)(1) waters. As depicted in Figures 5 and 6, all of the salt ponds impounded (a)(1) waters.

VI. Adjacent Wetlands

The information provided to EPA by Saltworks and ACOE indicates that no wetlands are present within the interior sides of the levees of the salt ponds.[87] EPA, in its limited observations of the Redwood City Salt Ponds, did not identify any wetlands inside the salt ponds.

VII. Significant Nexus

A. The Significant Nexus Framework

The Supreme Court's multiple opinions in *Rapanos v. United States*, 547 U.S. 715 (2006), resulted in two separate standards for determining CWA jurisdiction over waters that are not navigable in the traditional sense. The plurality opinion by Justice Scalia limits jurisdiction to waters that have a "continuous surface connection" to a "relatively permanent" body of water that is a traditional navigable water. *Id.* at 742. The term "relatively permanent" can include "seasonal" water bodies that may lack water during dry months. *Id.* at 733 n.5. Justice Kennedy's opinion concurring in the judgment, rejects this approach and instead requires a case-by-case evaluation of whether a non-navigable water has a "significant nexus" to a TNW. Courts have expressed different views on the applicability of Scalia's standard[88], but they agree that waters meeting Kennedy's significant nexus test are jurisdictional.

Waters may possess a significant nexus if "either alone or in combination with similarly situated lands in the region, [the waters] significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as 'navigable.'" *Id.* at 780 (Kennedy, J., concurring in the judgment). The effect on covered waters must be more than speculative or insubstantial. *Id.* Justice Kennedy did not define "similarly situated lands in the region," but at least one court has addressed the issue in a case of artificially altered waters. In *Precon Dev. Corp. v. U.S. Army Corps of Eng'rs,* 633 F.3d 278, 292 (4th Cir. 2011), the Fourth Circuit accepted ACOE's decision to aggregate the wetlands surrounding two separate artificial ditches because the ditches had originally been part of the same naturally defined wetland drainage feature.

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[86] *Froehlke* subsequently held that RHA jurisdiction extends only to the MHW mark, not the MHHW mark.
[87] AJD Application, Ex. 23.
[88] *See United States v. Robison,* 505 F.3d 1208 (11th Cir. 2007), *cert. denied sub nom McWane v. United States,* 555 U.S. 1045 (2008) (rejecting Scalia's opinion as an alternate basis for jurisdiction).

1. Functions Considered for Purposes of Determining Significant Nexus

Significant nexus includes an assessment of the proximity, and hydrological and ecological factors impacting the integrity of TNWs. The potentially significant chemical, physical, and biological functions include: (1) the capacity to provide and export organic carbon, nutrients and other food resources vital to supporting food webs; (2) nutrient recycling; (3) pollutant trapping, filtering, transformation and transport, including improvement of water quality; (4) sediment trapping; (5) storage (retention) and attenuation of floodwaters; (6) contribution of flow; (7) provision of aquatic habitat supporting the life cycles (*e.g.*, movement and migration, foraging, feeding, resting, nesting, breeding, spawning , and use as a nursery area) and diversity of fish and wildlife species, including habitat for federally-endangered and other environmentally sensitive species; and (8) other relevant factors that contribute to the maintenance of water quality, aquatic life, commerce, navigation, recreation, and public health.[89]

A water body does not need to perform all of these functions in order to have a significant nexus. If a water, either alone or in combination with similarly situated waters, performs any functions that have a significant impact on the integrity of a TNW, that water has significant nexus. *See, e.g., United States v. Cundiff,* 555 F.3d 200, 211 (6th Cir.), *cert. denied,* 130 S. Ct. 74 (2009) (wetlands provide water storage, habitat, and filter acid runoff and sediment); *Precon Dev. Corp., Inc. v. U.S. Army Corps of Eng'rs*, 603 Fed. Appx. 149, 153; 2015 U.S. App. LEXIS 3704 at 11 (4th Cir. March 10, 2015) (wetlands trap nitrogen, store water, slow flow and provide wildlife food and habitat). In some instances, it may be the lack of a hydrologic connection that shows the significance that a water has on the larger aquatic system. *Rapanos* at 786.

2. Consideration of Physical Proximity in Determining Significant Nexus

The potential for a significant nexus is greater with increasing size and decreasing distance of the water from the TNW, and with the increased density of the waters in relation to other similarly situated waters. It is important to consider collectively, or in the aggregate, the relationships of all functions of a water with the functions of similarly situated waters in the region that have a significant effect on the physical, chemical and biological integrity of a TNW.

3. Significant Nexus and the Strength of a Hydrologic Connection

The absence of a hydrologic connection, or the occurrence of an infrequent or short duration hydrologic connection does not preclude a finding that a significant nexus exists between waters. Even in the absence of a hydrologic connection, important chemical or biological connections may exist that demonstrate a significant nexus between the site and a TNW. Justice Kennedy's concurrence in *Rapanos* noted that in some cases "it may well be the absence of hydrologic connection (in the sense of interchange of waters)" that shows the water's integral function in relationship to a TNW (e.g., retention of pollutants, water storage, flood reduction or

[89] ACOE, Approved Jurisdictional Determination Form.
http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/cwa_guide/app_b_approved_jd_form.pdf

attenuation). *Rapanos* at 786.[90] Therefore, the significance of a hydrologic connection to a TNW, or lack thereof, must be considered in the context of the significance of effects of all other potential functions on that water.

B. Significant Nexus Analysis

The Redwood City Salt Ponds are inundated with water originating from San Francisco Bay and from precipitation, on average, six to nine months of the year. During the drought years of 2013 to 2015, all of the ponds were inundated for at least three months of the year. The ponds also have identifiable OHWMs. Therefore, they are "relatively permanent" waters under the *Rapanos* plurality criteria. *Rapanos*, 547 U.S. at 733 n.5.

Artificial structures in the constructed levees, such as gates, pumps, and temporary locks, allow for direct hydrological connections between the ponds and San Francisco Bay. However, the ponds do not currently have a "continuous surface connection" to the Bay. At times, Cargill uses these structures to connect the waters of the ponds to San Francisco Bay.[91] EPA has incomplete information about the historic operation of these structures, but the available information indicates that Cargill manages these connections to prevent flow from the ponds to the Bay most of the time.

Due to the limited and controlled movement of water from the ponds to the Bay, EPA has assessed the potentially significant effects of the Redwood City Salt Ponds, alone and in combination with other similarly situated salt ponds in the region, on the chemical, physical, and biological integrity of Bay waters.

1. Physical Proximity, Size and Density in Relation to San Francisco Bay

For purposes of this significant nexus analysis, San Francisco Bay is the nearest TNW. Specifically, the tidal waters of Redwood Creek, Westpoint Slough, First Slough and Flood Slough, which are navigable-in-fact extensions of San Francisco Bay, border almost half of the Property. In addition, the Bayfront Canal and lowermost Atherton Channel border the south property boundary and are hydrologically connected to Flood Slough through leaky tide gates that allow tidal waters to enter and exit the flood channel twice daily. See Figure 1.

The very close proximity of the Redwood City Salt Ponds to the waters of San Francisco Bay is a major reason the pond waters have significant physical, chemical and biological linkages to San Francisco Bay. The Redwood City Salt Ponds are hydrologically interconnected by surface water pathways to the adjacent tidal waters of San Francisco Bay. Tidal waters surround the salt ponds

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[90] See also, *EPA's Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence*, 2015, and *Technical Support Document for the Clean Water Rule: Definition of Waters of the United States*, May 27, 2015.

[91] Jurisdiction may exist where hydrological connections are artificial, or where movement of the water depends on human intervention. See *Cal. Sportfishing Prot. Alliance v. Diablo Grande, Inc.*, 209 F. Supp. 2d 1059, 1076 (E.D. CA 2002) (creek connected to traditionally navigable water via underground pipeline); *United States v. Adam Bros. Farming, Inc.*, 369 F. Supp. 2d 1166, 1177 (C.D. CA 2003) (existence of a hydrological connection does not turn on a distinction between the "natural" flow of water and the "artificial" flow of water; fact that pumping is intermittent and non-continuous does not affect whether a hydrological connection exists.).

on all sides. The outermost network of dikes dividing the salt ponds from San Francisco Bay are typically approximately 25-40 feet in top width, and therefore the waters of the salt ponds and San Francisco Bay are in very close physical proximity. In addition, during high tides, San Francisco Bay surface water elevations typically are only ≤ 1-2 feet below the top elevation of the outboard dikes and tidal waters from San Francisco Bay may occasionally penetrate the salt ponds as storm waves or spray. All of the salt ponds and some internal dikes, but not including the upland portions of the site's internal dike system and plant site, are below the elevation of MHW. In the absence of protective levees large portions of the Property would either be permanently submerged subtidal or twice-daily inundated intertidal habitats (Figures 4a, 4b, 5 and 6). In addition, the salt ponds cover approximately 1,276 acres and form a dense aggregation of waterbodies that are physically, hydrologically, and biologically interconnected.

The close geographic proximity, size and density of the Redwood City Salt Ponds in relation to the tidal waters of the Bay and other similarly situated or adjacent salt ponds and wetlands (e.g., Ravenswood salt ponds immediately to the east, and the Bair Island and Westpoint Slough tidal wetlands immediately to the west and north, respectively) establish a significant physical and functional relationship between these waters; physical, chemical and biological links between the salt ponds and similarly situated San Francisco Bay waters form clear ecological pathways for the back-and-forth movement of materials, energy and organisms. For example, because the salt ponds are located in very close proximity to San Francisco Bay, they are more likely to be frequently connected biologically to the Bay waters. The fact that hundreds to thousands of migratory and resident birds move between and utilize the salt ponds, often multiple times daily, is direct evidence of the effects of physical proximity, size and density on the strength of the biological connections and exchanges between the salt ponds and Bay waters.

In summary, the Redwood City Salt Ponds are sufficiently proximate to San Francisco Bay to ensure that the hydrological, chemical and biological functions performed by the salt ponds consistently and significantly affect and contribute to the ecological integrity of San Francisco Bay. As sufficiently proximate waters, the salt ponds and nearby San Francisco Bay function together as an integrated ecological system or network. This same pattern of hydrological, chemical, and biological connectivity has been documented in numerous studies for other similarly situated salt ponds and tidal waters in South San Francisco Bay. Therefore, the Redwood City Salt Ponds, alone and in combination with other San Francisco Bay salt ponds in the region, exhibit tight ecological and functional linkages to the adjacent tidal waters of San Francisco Bay. Even to the untrained eye, the salt ponds appear connected to the San Francisco Bay ecosystem by virtue of the close proximity of their surface waters and the conspicuous, persistent back-and-forth movement of migratory and resident birds between the two waters.

2. Hydrologic Nexus

Collectively, the Redwood City Salt Ponds are not hydrologically isolated from the tidal waters of San Francisco Bay. The salt ponds are relatively permanent standing bodies of water that pond water in response to direct precipitation and importation of variable salinity brine water.

The salt ponds, ditches, tide gates and pipes constitute an open hydrologic system that receive, retain, and convey water into, throughout, and out of the Property. All salt pond waters are interconnected by gravity through an integrated surface water conveyance system consisting of dike gates, ditches, pipes, and pumps, which allows water to be moved during normal salt processing operations throughout all salt ponds. All salt ponds are also functionally interchangeable depending on the nature of the salt-making operations. The structural integrity of constructed dikes on the Property must be continuously monitored and maintained in order to prevent seawater from entering, and pond water from exiting, the site. However, these levees and dikes do not prohibit the flow of water between the salt ponds and San Francisco Bay (see following discussion). Notwithstanding the perimeter dike system, the salt ponds and ditches historically and currently have periodic surface, and likely subsurface, hydrologic connections to San Francisco Bay.

Hydrologic imports to the Redwood City Salt Ponds include: (1) precipitation; (2) imported brine which originated as seawater taken directly from San Francisco Bay at Cargill's Newark plant, concentrated by evaporation, then piped to the Property; (3) seawater water exchange through tide gates, pipes and pumps adjacent to tidal First Slough (a part of San Francisco Bay) for use in salt plant operational processes; and (4) periodic sea water exchange between salt ponds and tidal First and Westpoint sloughs during pond access by *The Mallard* via dredge locks associated with levee maintenance and repair activities.

Precipitation. On average, the Property receives approximately 20 inches of annual precipitation (Table 1). Typically, by late-summer to-late fall the salt ponds are dry. Salt harvest is completed in November of each year. During the period of December-April rainwater typically accumulates within and inundates the salt ponds and crystallizer beds.[92] During the winter of 2015-2016 the salt ponds began filling in response to precipitation in November and all salt ponds were completely inundated by January-February 2016.[93]

Imported Brine. Brine is water saturated or highly concentrated with salt. Fully-saturated brine (also referred to as pickle) originates as seawater from San Francisco Bay and an unknown volume is imported annually from Cargill's Newark salt making operations via a transbay pipeline and discharged to fill the Redwood City pickle ponds 7A, 7B, 7C and 8W near Flood Slough. See Figure 1 for pond locations. Salt begins to crystallize and settle out of solution when brine is fully saturated. Beginning in April, brine/pickle is transferred to crystallizer beds 1, 2, 3, 4, 5, 6, 7, 8 and

[92] Douglass letter to ACOE, February 28, 2002.
[93] Periodic site observations and photographs made from November 2015 – February 2016, by Robert A. Leidy, EPA, Region 9.

9 where it remains through September until sodium chloride crystals settle out. When the sodium chloride is removed the remaining liquid is called bittern. Bittern typically consists of 75% water and 25% minerals, originating from San Francisco Bay water.

Redwood City, CA (NOAA Climate Data, Station GHCND:USC00047339)
Elev: 31 ft. Lat: 37.477° N Lon: 122.239° W

Rainfall Summary BY CALENDAR YEAR	Year 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	NR=No record, NOAA reports no data for time period											
January	*NR*	2.25"	0.58"	4.43"	1.18"	6.33"	0.70"	2.82"	0.30"	0.00"	0.00"	5.21"
February	4.47"	*NR*	3.04"	2.42"	4.78"	2.88"	4.36"	1.01"	0.50"	3.59"	0.01"	0.97"
March	4.35"	*NR*	0.26"	NR	2.06"	2.31"	5.44"	6.17"	0.71"	1.60"	0.05"	3.61"
April	1.90"	*NR*	0.46"	0.00"	0.02"	2.83"	0.18"	3.12"	0.51"	0.84"	0.01"	0.69"
May	0.75"	0.47"	0.03"	0.00"	0.43"	0.66"	0.34"	0.02"	0.01"	0.00"	0.04"	0.00"
June	0.27"	0.00"	0.00"	0.00"	0.06"	0.00"	1.04"	0.17"	0.03"	0.00"	0.10"	-
July	*NR*	0.00"	0.00"	0.00"	0.01"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	-
August	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	0.00"	-
September	0.02"	0.00"	0.29"	0.00"	0.24"	0.00"	0.00"	0.00"	0.00"	0.60"	0.01"	-
October	0.00"	*NR*	1.16"	0.00"	3.88"	0.14"	0.97"	1.75"	0.00"	0.35"	0.02"	-
November	*NR*	0.49"	0.01"	0.00"	0.13"	2.50"	1.22"	3.71"	0.53"	1.00"	2.04"	-
December	*NR*	1.98"	2.42"	3.86"	2.26"	1.75"	0.04"	6.40"	0.04"	10.74"	3.89"	-
Totals	**11.76"**	**5.19"**	**8.25"**	**10.71"**	**15.05"**	**19.40"**	**14.29"**	**25.17"**	**2.63"**	**18.72"**	**6.17"**	**10.48"**

Table 1. Table of Monthly Precipitation for Redwood City for the Period 2005 to Present

Seawater. Seawater from San Francisco Bay was imported into the salt ponds for salt making prior to the 1951 construction of the transbay pipeline from Cargill's Newark Plant. Currently, San Francisco Bay seawater is imported into the salt ponds from First Slough via pumps or by hydraulic pressure through water control devices (tidal gates) for use in salt processing operations.[94] This seawater is subsequently transported via a constructed ditch system within the perimeter dikes for distribution into the crystallizer beds 1-9 and Desalting Pond 10.

Hydrologic exports from the salt ponds into San Francisco Bay include: (1) evaporation; (2) intentional, periodic discharges of excess rainwater from the ponds through tide gates and pipes into San Francisco Bay via First Slough; (3) potential unintentional discharges into First Slough through leaky tide gates or pipes; (4) levee seepage; and (5) discharge of salt pond water through the levees breached by the floating, clamshell dredge, *The Mallard*, for the purpose of dredge egress from the salt ponds to San Francisco Bay via dredge locks.

Evaporation. Net evaporation at the Redwood City Salt Ponds is estimated at 27 inches per year.[95] Net evaporation exceeds precipitation at the site; a high E/P ratio is one major reason why solar

[94] R. Leidy, personal communication with Cargill, EPA site visit and photo log, Sept. 30, 2015; Douglass letter to ACOE, February 28, 2002.
[95] Siegel, S.W. and Bachand, P.A.M., Feasibility Analysis of South Bay Salt Pond Restoration, San Francisco Estuary, California, Wetlands and Water Resources, 2002.

salt making operations are located in the San Francisco Bay region. However, between December and April of each year when salt making operations have ceased for winter and precipitation exceeds evaporation the salt ponds typically fill only with rainwater. There is an immediate initiation of surface ponding or inundation in response to the first, precipitation events in the fall.

Discharges into First Slough. Following completion of the desalting process in December and continuing to April, it is typical for rainwater to accumulate in all of the salt ponds. In 2002, Cargill described how it sometimes discharges the accumulated rainwater:

> *This water is periodically drained from the crystallizer beds and Desalting Pond to the previously mentioned constructed ditch. The facility holds an NPDES permit authoring the discharge of this liquid from the ditch (which is the point source) through the water control device (which is the outfall) to First Slough. The Redwood City Plant Site continuously has been used in this fashion from at least 1951 to the present day* [i.e., 2002]. *This water control device serves a dual purpose. It both controls water intake as indicated here and, as noted* [above], *serves as the permitted outfall under an NPDES permit that periodically allows discharge of rainwater.*[96]

Prior to 2005 there appear to be two water control structures that discharged into First Slough See Figure 1. A new tide gate/water control structure was constructed adjacent to the existing outfall into First Slough sometime in 2005.[97] EPA review of aerial photography taken during low tides, subsequent to the 2005 tide gate installation, depicts a newly formed subtidal drainage channel evident within the mud flats beginning at the base of the 2005 outfall into First Slough where none existed prior to the construction of this outfall. Aerial photographs show subtidal drainage emanating from the three water control structures until at least until June 2013. The drainage channels depicted in the aerial photographs provide physical evidence that water from the Redwood City Salt Ponds periodically discharges into First Slough.

Water exchange into First and Westpoint Sloughs from The Mallard egress. The Property's levees and dikes are regularly maintained, in part, by the floating clamshell dredge, *The Mallard*. *The Mallard* accesses the salt ponds by navigating through either of two dredge locks. The Mallard accesses the ponds via an excavated tidal channel at two pre-approved dredge lock locations adjacent to Bittern Ponds 9 and 9A. During excavation for dredge ingress and egress, tidal water from San Francisco Bay is exchanged with the salt ponds through the dredge lock entrance channels.

Levee seepage. All levees in salt operations leak to varying degrees and operators adjust operations to address leakage and precipitation dilution.[98] A 1986 Cargill-funded engineering report found that levee and underlying bay mud permeabilities are very low, but are higher in the

[96] Douglass letter to ACOE, 2002.
[97] Cargill, personal communication, Sept. 30, 2015 EPA site visit.
[98] Ver Planck 1958.

upper three feet of the levee due to desiccation cracks that form when the upper levee surface dries.[99]

3. Characteristics of the Salt Pond Waters

All of the water contributed to the Redwood City Salt Ponds originates from direct precipitation or as Bay seawater. The salt ponds are part of an open hydrologic system that regularly receives substantial annual precipitation, imported brine, and San Francisco Bay seawater. The salinities of these waters vary seasonally and according to source, as they are captured, retained, evaporated, exchanged, and intermixed.

Many natural and human-altered high-salinity waters such as salt ponds, playas and lakes exhibit salinity concentrations similar to those found within the salt ponds. Historically, San Francisco Bay supported many natural salt ponds that exhibited ranges in salinity and other biogeochemical and ecological conditions similar to conditions in industrial salt ponds including the Redwood City Salt Ponds.[100] Pond salinities may vary from 15-60 ppt to > 180 ppt depending on water source and season.[101] These salinity ranges are similar to the ranges in salinities found in nearby similarly situated waters and the waters of San Francisco Bay. Salinities may vary between and within ponds. For example, San Francisco Bay water used for salt processing and direct precipitation results in the reduction of salt pond salinities, or in case of precipitation, the formation of a layer fresh water that lies on top of brines (stratification). In the absence of brines, the salt ponds are seasonally inundated with water of lower salinities due rainfall during winter months (December-April) prior to re-commencement of salt making operations. Annual precipitation is typically of sufficient quantity that excess water was discharged into First Slough.

South Bay salt ponds exhibit wide temporal and spatial variation in salinities.[102] The Redwood City Salt Ponds support extremely high biological productivity and exhibit significant food web support functions over a wide range of salinities that have a substantial effect on San Francisco Bay (see below). Variable pond salinities are important in supporting the high biological

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[99] Purcell, Rhoades & Associates 1986.

[100] Baylands Ecosystem Goals Project, EPA and San Francisco Bay Regional Water Quality Control Board, A report of habitat recommendations prepared by the San Francisco Bay Area Wetlands Ecosystem Goals Project, 1999; Purcell, Rhoades & Associates 1986; Ver Planck, 1958; Ver Planck, W., Salines in the Bay Area, pp. 219-224 in: Geologic Guidebook of the San Francisco Bay Counties: History, Landscape, Geology, Fossils, Minerals, Industry and Routes of Travel, California Department of Natural Resources, Division of Mines, Bulletin 154, 1951; Baye, P.R., *Regulatory Analysis of Clean Water Act § 404 and Rivers and Harbors Act § 10 Jurisdiction at Redwood City Salt Ponds, San Mateo County, California*, prepared for Citizen's Committee to Complete the Refuge, April, 2010, at 11-12; Baye, P. R., *Plants of the San Francisco Bay Salt Ponds*, in San Francisco Bay Area Wetlands Ecosystem Goals Project, Baylands Ecosystem Species and Community Profiles: Life histories and environmental requirements of key plants, fish and wildlife, 2000.

[101] BCDC, Salt Ponds, Staff Report, October 2005; S. R. Hansen and Associates, Report of Acute Biomonitoring Test, rainwater Discharge from Crystallizers Collected March 7, 1996, Redwood City Facility, prepared for Cargill Salt Co., March 26, 1996.

[102] Siegel and Bachand, 2002.

productivity/functioning of the salt ponds and nearby Bay waters. This biological productivity is important at local (site) and broader (regional) scales for a diversity of species located in TNWs.

4. Significant Effects of Salt Pond Functions on San Francisco Bay

Export of organic carbon, nutrients and other food resources vital to supporting food webs. The annual contribution of organic carbon, nutrients and other food resources from the Redwood City Salt Ponds to San Francisco Bay is likely significant and important to maintaining the food webs and therefore, biological integrity of San Francisco Bay. Figure 9 depicts the food webs connected to the Redwood City Salt Ponds. It is well known that globally low-, medium- and high-salinity natural and human managed salt ponds/salterns support highly productive and diverse communities of diatoms, cyanobacteria, bacteria, algae, phytoplankton, zooplankton, invertebrates and vertebrates that comprise complex internal and external food webs with important ramifications for nutrient cycling and export.[103] Invertebrates, birds, and mammals utilize the salt ponds for resting/roosting, breeding/nesting and feeding. These invertebrates, birds, and mammals and are part of complex food webs that extend well beyond the salt pond levee boundaries exchanging carbon, nutrients and other food resources vital to supporting San Francisco Bay food webs.

Waterbird droppings can add to the nutrient load of salt ponds.[104] Birds and other animals that feed on organisms at the base of the salt pond food web export nutrients to other San Francisco Bay waters through their guano and feces. Tens of thousands of waterbirds have been observed over the last 15 years feeding and resting in the Redwood City Salt Ponds.[105] The amount of nutrients exported as guano on a daily basis between the salt ponds and San Francisco Bay waters is likely ecologically significant as birds may move back and forth between tidally influenced foraging areas on San Francisco Bay and the salt ponds up to twice daily in response to the ebb and flow of the tides. Through the transport of nutrients (*e.g.*, nitrogen and phosphorus) and minerals in their guano, birds function as a critical resource linkage between the salt ponds and nearby estuarine, terrestrial and wetland ecosystems.[106]

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[103] Litchfield, C.D., Irby, A., Kis-Papo, T., and A. Oren, Comparative metabolic diversity in two solar salterns. *Hydrobiologia* 466: 73-80, 2001; Javor, B.j., Industrial microbiology of solar salt production, *Journal of Industrial Microbiology and Biotechnology* 28: 42-47. 2002; Takekawa, J.Y., Miles, A.K., and seven others, Trophic structure and avian communities across a salinity gradient in evaporation ponds of the San Francisco Bay estuary, *Hydrobiologia* 567: 307-327; Oren, A. Saltern evaporation ponds as model systems for the study of primary production processes under hypersaline conditions, *Aquatic Microbial Ecology* 56: 193-204, 2009; Asencio, A.D., Permanent salt evaporation ponds in a semi-arid Mediterranean region as model systems to study primary production processes under hypersaline conditions, *Estuarine, Coastal and Shelf Science* 124: 24-33, 2013.

[104] Asencio 2013.

[105] Leddy, M. 2015-2016, Waterbird Counts in Select Redwood City Saltworks Ponds (unpublished data), 2009-2015.

[106] Bosman, A.L., Du Toit, J.T., Hockey, P.R. and G.M. Branch, A field experiment demonstrating the influence of seabird guano on intertidal primary production, *Estuarine, Coastal and Shelf Science* 23: 283-294, 1986; Sekercioglu, C.H., Increasing awareness of avian ecological function, *Trends in Ecology and Evolution* 21: 464-471, 2006; Boros, E.; Forro, L.; Gere, G.; Kiss, O.; Voros, L. and Andrikovics, L., The role of aquatic birds in the regulation of trophic

Waterbirds are have an important role in transporting over significant distances brine shrimp and other aquatic invertebrates between aquatic ecosystems through ingestion and subsequent defecation.[107] In the past, brine shrimp (*Artemia franciscana*) have been found in the Redwood City Salt Ponds at densities high enough to be commercially harvested.[108] A 496-acre salt pond within the San Francisco Bay National Wildlife Refuge was estimated to support a winter population of between 4.5 and 40 billion adult brine shrimp.[109] Therefore, it is highly likely that waterbirds utilizing the salt ponds export brine shrimp to the adjacent waters, wetlands and salt ponds of San Francisco Bay, and vice versa. Brine shrimp are a primary consumer of phytoplankton and blue-green algae.[110] California gulls, whimbrels, Wilson's phalaropes, eared grebes, American avocets, western and least sandpipers, willets and yellowlegs are known to feed on brine shrimp in salt ponds[111] and these bird species have been documented feeding in the Redwood City Salt Ponds.[112] As such, it is likely that brine shrimp originating within the salt ponds provide important food resources, including organic carbon and nutrients, vital to maintaining food webs in other San Francisco Bay aquatic ecosystems.

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relationships of continental soda pans in Hungary, *Act Zoologica Academiae Scientiarum Hungaricae* 54 (Suppl. 1): 189-206, 2008; Post, D.M; Taylor, J.P.; Kitchell, J. F. ; Olson, M.H.; Schindler, D.E. and Herwig, B.R., The role of migratory waterfowl as nutrient vectors in a managed wetland, Conservation Biology 12: 910-920, 2005.

[107] Green, A.J., Sanchez, M.I., Francisco, A., Jordi, F., Francisco, H., Ruiz, O., and F. Hortas., Dispersal of invasive and native brine shrimps *Artemia* (Anostraca) via waterbirds, *Limnology and Oceanography* 50: 737-742, 2005; Sanchez, M.I.; Green, A.J.; Amat, F. and Castellanos, E.M., Transport of brine shrimps via the digestive system of migratory waders: dispersal probabilities depend on diet and season; *Marine Biology* 151: 1407-14156; Sanchez, M.I.; Hortas, F.; Figuerola, J. and Castellanos, E.M., Comparing the potential for dispersal via waterbirds or a native and an invasive brine shrimp, *Freshwater Biology* 57: 1896-1903, 2012; Marta, S.I.; Green, A.J.; Amat, F.; and Castellanos, Transport of brine shrimps via the digestive system of migratory waders: dispersal probabilities depend on diet and season, *Marine Biology* 151:1407-1415, 2007.

[108] J. Siu, EPA, personal communication with Bart Lane, private fisherman, January 2016; J. Siu, EPA, personal communication with Becky Ota, CDFW, January 2016.

[109] Donaldson, M.E., Conklin, D.E. and T.D. Foin, Population dynamics of *Artemia Franciscana* in the San Francisco Bay National Wildlife Refuge: Phase II, Interim Report #2, 1992.

[110] Maiss, F.G. and E.K. Harding-Smith, San Francisco Bay National Wildlife Refuge Final Environmental Assessment of Commercial Brine Shrimp Harvest. U.S. Fish and Wildlife Service, San Francisco NWR, Newark, CA, 1992.

[111] Anderson, W., A preliminary study of the relationship of saltponds and wildlife - South San Francisco Bay, *California Fish and Game* 56: 240-252, 1970; Maiss and Harding-Smith, 1992.

[112] Leddy, 2015-2016.

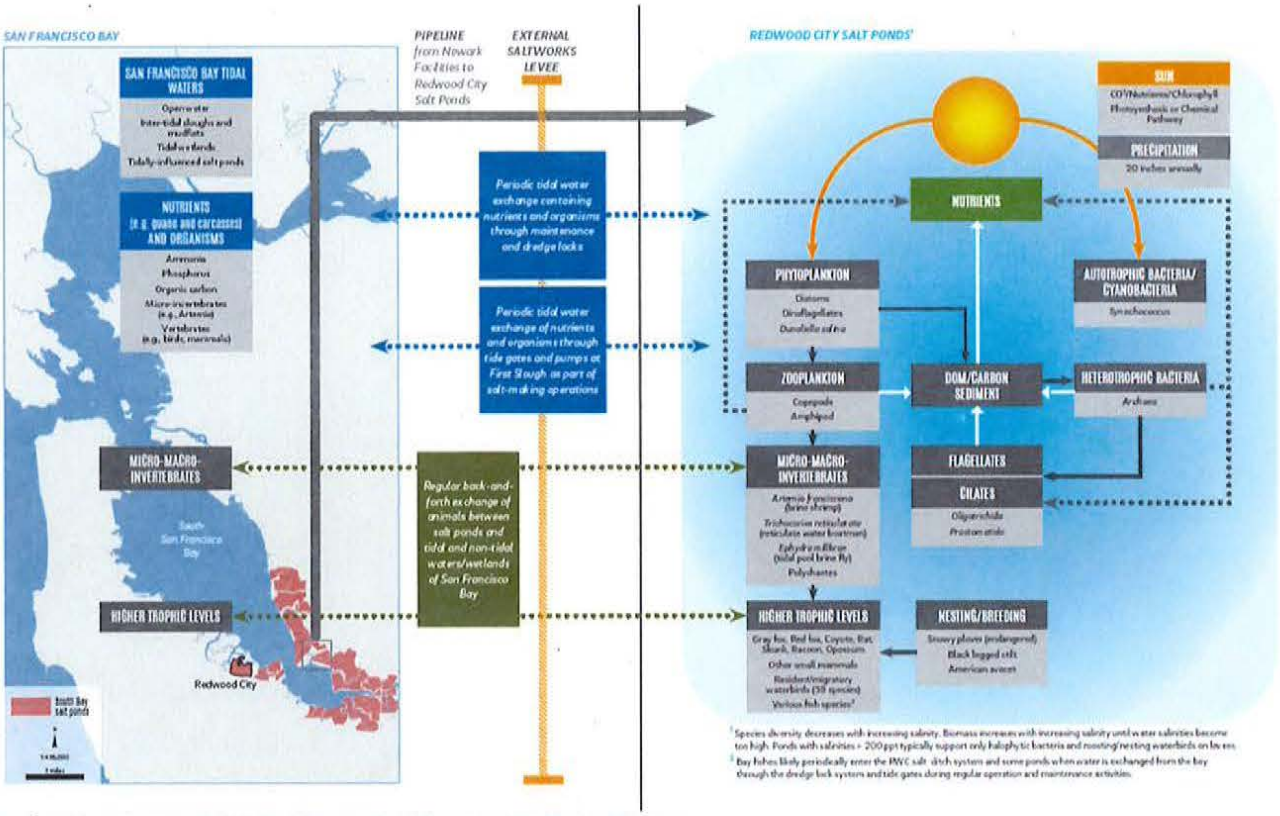

Figure 9. Trophic Structure of Redwood City Salt Ponds

Nutrient recycling. The open waters of the Redwood City Salt Ponds assimilate, transform, and sequester nutrients and chemical contaminants that could degrade water quality in San Francisco Bay waters. Solar salt ponds, including ponds characterized by high salinities, support great microbial diversity that displays high metabolic diversity; these microorganisms are known to effectively consume and recycle nutrients and other organic and inorganic substances.[113] Biogeochemical recycling of nutrients and inorganic and organic substances within the salt ponds allows these materials to be transported through the food web to the other organisms living in the waters of San Francisco Bay.

For example, microbial communities in ponds at Cargill's Solar Salt Plant in Newark have been shown to display greater metabolic diversity than expected where microorganisms consumed nine different carbon sources over 85% of the time.[114] Diverse halophilic microorganisms living at high salinities are known from almost all solar salt ponds and include organisms from three domains:

[113] Litchfield, C.D., Irby, A., and R.H. Vreeland, The Microbial Ecology of Solar Salt Plants, Microbiology and Biogeochemistry of Hypersaline Environments, A, Oren, ed. CRC Press, 1999, at 39-52; Javor 2002; Oren, A., Diversity of halophilic microorganisms: Environments, phylogeny, physiology and applications, *Journal of Industrial Microbiology and Biotechnology*. 28: 56-63, 2002; Asencio, 2013; Oren, A. The ecology of *Dunaliella* in high-salt environments, *Journal of Biological Research* (DOI 10.1186/s40709-014-0023-y), 2014 at 21-23.

[114] Litchfield et al. 2001.

Archaea, Bacteria and Eucarya.[115] Archaea, Bacteria, Eucarya, unicellular algae (*i.e.*, *Dunaliella salina*), macro-invertebrates (*e.g.*, worms, brine flies, water boatman, brine shrimp), and vertebrates (*e.g.*, resident birds, small mammals) are part of an aquatic food web that imports, exports and cycles, and recycles nutrients between the Redwood City Salt Ponds and SF nearby Bay waters. Figure 9. Species generally diversity decreases with increasing pond salinity, but even lower-diversity, high salinity evaporation ponds (> 180 ppt) may have extremely high biomass that provides abundant food for waterbirds.[116]

The import and export of water as part of salt making operations allows for the regular movement of rainwater and brines and the recycling of nutrients and nutrient supplying organisms through biochemical processes between the salt ponds and the waters of San Francisco Bay when water is imported from Flood, First and Westpoint Sloughs, or released into First Slough. Notably, the recycling of nutrients in the salt ponds by microorganisms is important in maintaining water quality promoting the production of higher quality salt.[117]

Pollutant trapping, filtering, transformation and transport, including improvement of water quality. Open waters of the Redwood City Salt Ponds improve water quality through the retention, assimilation and transformation of water- (*i.e.*, imported brines and bittern products), localized runoff from the salt plant facilities and operations, and air-borne (*i.e.*, nitrogen oxides) pollutants that could degrade San Francisco Bay waters. According to Cargill, the brines and bittern are not discharged into San Francisco Bay waters where they could cause serious water quality problems. As such, the salt ponds trap, filter and transport potential pollutants which helps to maintain the water quality of San Francisco Bay.

In addition, polluted local runoff from the salt plant processing facilities, levees and related activities (*e.g.*, pollutants originating from heavy machinery such as trucks and tractors used in salt harvesting and processing) are contained within the salt ponds and related ditches instead of flowing to San Francisco Bay. Thus, the absence of a regular interchange of water of between the Redwood City Salt Ponds and San Francisco Bay serves an important water quality function as the salt ponds function as a sink that filters sediment and pollutants before they reach the Bay.

Also, heavy vehicle traffic in the vicinity of the salt ponds release large amounts of nitrogen oxides (NO_X) daily that are likely deposited through dry and wet atmospheric deposition into adjacent the salt ponds as reactive nitrogen. The ponds act as a repository that retains and recycles atmospheric nitrogen from nearby vehicle emissions that would otherwise be directly deposited into Bay waters. As noted above, the recycling of nutrients, including nitrogen, in the salt ponds by microorganisms is important in maintaining water quality promoting the production of higher

[115] Oren 2002.
[116] Stralberg, D.N., Warnock, N., Nur, N., Spautz, H., and G.W. Page, Predicting the effects of habitat change on South San Francisco Bay bird communities: an analysis of bird-habitat relationships and evaluation of potential restoration scenarios (Contract # 02-009, Title: Habitat Conversion Model), Final Report, California Coastal Conservancy, 2003.
[117] Cargill, San Francisco Bay Sea Salt, Salt Pond Colors, accessed May 3, 2016. http://www.cargill.com/salt/about/san-francisco-bay-salt/sustainable-salt-making/salt-pond-colors/index.jsp .

quality salt. For example, phytoplankton grazing can be important in increased water clarity.[118] The large water surface area of the salt ponds supplement Bay surface waters and this moderates air temperatures and local climate, and acts to reduce smog.[119]

Sediment trapping. All suspended sediment entering the ponds with imported seawater and brine, or as sediment in runoff from bordering uplands (*e.g.*, levees, roads, and processing facilities totaling about 90 acres) is retained within the salt ponds and connecting ditches instead of flowing to San Francisco Bay. The Wash Pond is a former crystallizer bed that was converted to a settling pond. It is largely filled with Bay muds that settle from the wash brine.[120] The Wash Pond functions, in part, to trap sediment as part of the salt making process. Similarly, the entire 1400-acre Property functions as a sediment sink that reduces the total local sediment yield to the waters of San Francisco Bay. Because this function is performed over a relatively large geographic area, the effect on the adjacent waters and sediment dynamics of San Francisco Bay is likely not speculative or insubstantial.

Retention and attenuation of floodwaters. All of the salt ponds lie below Mean High Water. Projected sea level rise for San Francisco Bay over the next 30-50 years is 4-15 feet, respectively.[121] The salt ponds, and associated levee system and outboard tidal wetlands currently function to buffer adjacent developed urban areas from damaging floodwaters caused by tidal storm surges.[122] This flood attenuation function also protects valuable habitat for wildlife that utilize other aquatic habitats in San Francisco Bay.

Contribution of flow. From 1951 until at least 2002 Cargill regularly discharged water from the salt ponds to First Slough as part of its operations.[123] Prior to 2005 there appear to be two water control structures that discharged into First Slough. A new tide gate/water control structure was constructed adjacent to the existing outfall into First Slough sometime in 2005. See Section VII.C.2.

Runoff storage. The salt ponds store local runoff from levees and adjacent upland salt processing facilities totally about 90 acres. The retention of precipitation driven runoff from the salt processing facilities eliminates/reduces the amount of sediment and potential pollutants that could enter San Francisco Bay from the site.

Provision of life-cycle dependent aquatic habitat (such as movement, foraging, feeding, resting, nesting, breeding, spawning, and use as a nursery area) for species located in TNWs, interstate waters, or the territorial seas.

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[118] Asencio 2013.
[119] BCDC 2005.
[120] Douglass letter to ACOE, February 28, 2002.
[121] National Research Council, Sea-level Rise for the Coasts of California, Oregon and Washington: Past, Present and Future, Committee on Sea Level Rise, ISBN 978-0-309-25593, June 2012.
[122] BCDC 2005.
[123] Douglass letter to ACOE, February 28, 2002.

Commercial salt ponds surrounding San Francisco Bay have replaced many of the habitat functions of natural salt pans for resident and migratory birds and wildlife and other species.[124] The Redwood City Salt Ponds are part of a network of aquatic habitats and food webs ecologically-interconnected to the waters of San Francisco Bay.[125] The ponds support animal species that regularly disperse back-and-forth from to the waters of San Francisco Bay. They provide life-cycle dependent aquatic habitat (e.g., foraging, feeding, roosting/resting, breeding, nesting) for resident and migratory birds, mammals, invertebrates, and potentially fish that also utilize nearby Bay waters for at least part of the life cycle of the species. The movement of organisms between the salt ponds and nearby aquatic habitats is important for the survival of individuals, populations and species found in San Francisco Bay. As such, biological and ecological processes that occur in the salt ponds significantly affect the biological integrity of Bay waters. This regular, two-way biological and chemical exchange of organisms, nutrients and energy establishes a significant nexus between the salt ponds and the surrounding waters of San Francisco Bay.

Resident and Migratory Birds. San Francisco Bay salt ponds support annually more than a million waterbirds making these salt pond complexes the most important in the United States.[126] A high diversity of resident and migratory waterbirds have been documented using South San Francisco Bay salt ponds characterized by different salinities and water depths for roosting (resting) and feeding.[127] The wide temporal and spatial ranges in salinities and water depths in South San Francisco Bay salt ponds creates conditions supporting diverse assemblages of invertebrates that are consumed by foraging waterbirds.[128] Waterbirds will regularly move between the salt ponds and nearby San Francisco Bay waters in response to the diurnal tidal cycle (Table 2).[129] Typically during low tides shorebirds feed on tidal mudflats proximate to the Redwood City Salt Ponds, although some birds may also remain in the salt ponds to rest and feed throughout the tidal cycle.[130] During high tides when the tidal mudflats are inundated shorebirds will move to the salt ponds to roost and forage. Salt pond substrates provide waterbird foraging habitat that may functionally compensate for the 40% loss of tidal mudflats in San Francisco Bay due to landfills and dredging over the last 200 years.[131] This daily back-and-forth movement by birds from the

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[124] Siegel and Bachand 2002.
[125] Id.
[126] Page, G.W., Stenzel, L.E., and J.E. Kjelmyr, Overview of shorebird abundance and distribution in wetlands of the Pacific Coast of the contiguous United States, *Condor* 101, 1999, at 461-471.
[127] Warnock, N., Page, G.W., Ruhlen, T.D., Nur, N., Takekawa, J.Y., and J.T. Hanson, Management and conservation of San Francisco Bay salt ponds: effects of pond salinity, area, tide, season on Pacific flyway waterbirds. *Waterbirds 25* (Special Publication 2), 2002, at 79-92.
[128] Murphey, J.L., *Benthic Invertebrate Response to Habitat Complexity in South Bay Salt Ponds* (Masters Theses). Department of Environmental Sciences, San Jose State University, 2013.
[129] Warnock et al. (2002); Takekawa, J.Y.; Woo, I.; Gardiner, R.; Casazza, M.; Ackerman, J.T.; Nur, N.; Liu, L. and Spautz, H. Avian communities in tidal salt marshes of San Francisco Bay; a review of functional groups by foraging guild and habitat association, *San Francisco Estuary and Watershed Science* 9(3): 1-24, 2011.
[130] Takekawa et al. 2011.
[131] Warnock et al. 2002.

Redwood City Salt Ponds to the tidal waters of San Francisco Bay forms a significant biological and chemical linkage or nexus for the transport of organic matter, nutrients and other food resources.

From 1981 to 1984 the California Department of Fish and Game (Wildlife) and the U.S. Fish and Wildlife Service from a low-flying airplane made counts of waterbirds on salt ponds 7A, 7B, 7C, 8, 9 and crystallizer ponds 1-9.[132] These counts recorded thousands of resident and migratory waterbirds utilizing all of the surveyed ponds. During the fall of 1981, a single-day count recorded over 27,000 waterbirds on ponds 7B, 9 and the crystallizers.[133] At least 20 species of waterbirds were recorded; over 12 species were recorded on several survey dates.[134]

Four high-tide ground surveys organized by the Point Reyes Bird Observatory (PRBO) during January 1990 and November 1990, 1991, and 1992, were conducted from levees within the Redwood City facility.[135] At least 15 species of resident and migratory waterbirds were observed.[136] Waterbirds were recorded from all of the Redwood City salt ponds and over 67,000 individual waterbirds were counted for all salt ponds combined during the four sampling dates.[137]

From 2009-2016, thirty-eight species of resident and migratory waterbirds have been observed feeding, roosting, and occasionally breeding/nesting within the Redwood City Salt Ponds. See Table 3.[138] Of the 38 species recorded from the salt ponds, 18 species (47%) are generally considered residents.[139] On April 21, 2016, a total of over 10,000 waterbirds were recorded over a few hours from several salt of the ponds.[140] The number of observed birds represents only a small fraction of the total salt pond bird use as counts were limited to several hours on each of the 143 observation days and covered a small subset of the entire site that was accessible to the observer.[141]

Resident and migratory waterbirds have been documented feeding and resting (roosting) on the Redwood City Salt Ponds. See Table 2.[142] These waterbirds species are also known to feed and

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[132] Kelly, P., Letter to Florence LaRiviere, Citizens to Complete the Refuge, Waterbird counts at the Redwood City Saltworks conducted by the CDFW and USFWS in the 1980s, 2010.
[133] Id.
[134] Id.
[135] Stenzel, L., Informal Presentation of Shorebird Count Data from the Redwood City Salt Plant (unpublished report), July 2011, acquired in 2015 from Bay Area Regional Water Quality Control Board files, Oakland, CA.
[136] Id.
[137] Id.
[138] Leddy, M. 2015-2016. Species total includes only waterbirds and raptors observed utilizing the Redwood City Salt Ponds and excludes additional observed bird species more typical of upland habitats (e.g., levees, roads and plant facility areas) adjacent to the salt ponds.
[139] Id.
[140] Id.
[141] Id. Bird counts covered about 5% of the total possible observation days (*i.e.*, 143 observation days out 2920 possible observation days over an 8 year period).
[142] The following files contain videos with field notes documenting waterbirds feeding and resting on the Redwood City Salt Ponds: (1) Leddy, M., *Shorebirds on Cargill Pond 10 Redwood City, California* [Video file], January 30, 2010, retrieved from https://www.youtube.com/watch?v=AmqTZCnAW6k ; (2) Leddy, M., *San Francisco Bay shorebirds on*

roost within other non-tidal and tidal waters of San Francisco Bay[143] Typically the number and diversity of resting and feeding waterbirds on the Redwood City Salt Ponds is highest during high tide when the adjacent tidal flats of San Francisco Bay are inundated; a pattern documented elsewhere in south San Francisco Bay salt ponds[144]. At low tide the majority of shorebirds in San Francisco Bay salt ponds feed.[145]

Cargill Crystallizer Pond 1, Redwood City, CA [Video file], November 27, 2010, retrieved from https://www.youtube.com/watch?v=JIlapaPHLs0; (3) Leddy, M., *Foraging and roosting shorebirds on Cargill Pond 10, Redwood City CA* [Video file], April 27, 2011, retrieved from https://www.youtube.com/watch?v=poQp-P4Ndyo. (4) Leddy, M., *Shorebirds on Cargill Salt Pond 10* [Video file], April 5, 2012, retrieved from https://www.youtube.com/watch?v=SIyj0LcbOCc; (5) Leddy, M. 2012, *Shorebirds on Cargill Pond 10, Redwood City, CA* [Video file], April 6, 2012, retrieved from https://www.youtube.com/watch?v=DIqhDHP_IVE ; (6) Leddy, M., *Cargill Pond 10, Redwood City, CA* [Video file], April 12, 2012, retrieved from https://www.youtube.com/watch?v=9iPtIczrz_Y; (7) Leddy, M., 2012, *Shorebirds on Cargill Pond 10 Redwood City CA* [Video file], April 22, 2012, retrieved from https://www.youtube.com/watch?v=gMGPLuDl1GU ; (8) Leddy, M., *Black-necked Stilts foraging in Cargill Crystallizer Pond 3, Redwood City, CA* [Video file], December 15etrieved from https://www.youtube.com/watch?v=2PpsHZp40_g; (9) Leddy, M., *Cargill Pond 10 Redwood City, CA, foraging American Avocets* [Video file], December 18, 2012, retrieved from https://www.youtube.com/watch?v=V4W03VF6VNQ; (10) Leddy, M., *Cargill Pond 10 Redwood City, CA* [Video file], February 23, 2013, retrieved from https://www.youtube.com/watch?v=hRkHsQ9ZMuY ; (11) Leddy, M., *American Avocets foraging in Cargill Crystallizer Pond 1, Redwood City, CA* [Video file], March 19, 2013, retrieved from https://www.youtube.com/watch?v=805d7vsB2hE; (12) Leddy, M., *Cargill Pond 10 April 5, 2013 Redwood City, CA. Foraging and roosting shorebirds* [Video file], April 5, 2013, retrieved from https://www.youtube.com/watch?v=pmPdwSwUXq4; (13) Leddy, M., *Least Sandpipers foraging in Cargill Crystallizer Pond 1 south end* [video file], November 3, 2014, retrieved from https://www.youtube.com/watch?v=hQJYUP6lZOE. (14) Leddy, M., *1700 "peeps" foraging in Cargill Crystallizer Pond 2, Redwood City, CA* [Video file], December 9, 2014, retrieved from https://www.youtube.com/watch?v=24GlHq-i_Zg.

[143] Warnock et al. 2002; Stralberg et al. 2003; http://ebird.org/content/ebird/; accessed 2015-2016; Athearn, N.D., Takekawa, J.Y., Bluso-Demers, J.D. Shinn, J.M.; Brand, A.L.; Robinson-Nilsen, C.W. and Strong, C.M., Variability in habitat value of commercial salt pond production ponds: implications for waterbird management and tidal marsh restoration planning, *Hydrobiologia* 691: DOI 10.1007/s10750-012-1177-y, 2012.

[144] Warnock et al. 2002.

[145] Id.

Table 2. Bird species observed at the Redwood City Salt Pond site, their status, foraging guild, observed activity, and recorded occurrence from nearby tidal waters and/or salt ponds.

Family	Common Name	Scientific Name	Status[1]	Foraging Guild[2]	Observed Activity[3]	Recorded From Nearby Tidal Waters/Salt Ponds[4]
Anatidae	Canada goose	*Branta Canadensis*	R/M	Other	F, R	Yes
	Bufflehead	*Bucephala albeola*	M	DB	R	Yes
	Mallard	*Anas platyhynchos*	R	DB	R	
	Northern shoveler	*Anas clypeata*	R/M	DB	R	Yes
	Common goldeneye	*Bucephala clangula*	M	DB	R	Yes
	Lesser scaup	*Aythya affinis*	M	DB	R	Yes
	Great scaup	*Aythya marila*	R/M	DB	R	Yes
	Ruddy duck	*Oxyura jamaicensis*	R	DB	R	Yes
Gaviidae	Red-throated loon	*Gavia stellata*	M	P	R	Yes
Ardeidae	Great egret	*Ardea alba*	R	P	F, R	Yes
	Snowy egret	*Egretta thula*	R	P	F, R	Yes
Pandionidae	Osprey	*Pandion haliaetus*		Other	R	Yes
Charadriidae	Black-bellied plover	*Pluvailis squatarola*	M	SP	R	Yes
	Snowy plover	*Charadrius alexandrinus*	R	SP	F, R, N	Yes
	Semipalmated plover	*Charadrius semipalmatus*	M	SP	F, R	Yes
Recurvirostridae	Black-necked stilt	*Himantopus mexicanus*	R	SF	F, R	Yes
	American avocet	*Recurvirostra americana*	R	SF	F, R	Yes
Scolopacidae	Greater yellowlegs	*Tringa melanoleuca*	M	DP	R	Yes
	Lesser yellowlegs	*Tringa flavipes*	M	DP	R	Yes
	Willet	*Catoptrophorus semipalmatus*	M	DP	R	Yes
	Whimbrel	*Numenius americanus*	M	DP	R	Yes
	Marbled godwit	*Limosa fedona*	M	DP	R	Yes
	Long-billed curlew	*Numenius americanus*	M	DP	R	Yes
	Wilson's phalarope	*Phalaropus tricolor*	M	SF	R	Yes
	Sanderling	*Calidris alba*	M	SP	R	Yes
	Western sandpiper	*Calidris mauri*	M	SP	F, R	Yes
	Least sandpiper	*Calidris minutilla*	M	SP	F, R	Yes

Family	Common Name					
Common Name	Scientific Name	Status[1]	Foraging Guild[2]	Observed Activity[3]	Recorded From Nearby Tidal Waters/Salt Ponds[4]	Yes
	Long-billed dowitcher	*Limnodromus scolopaceus*	M	DP	R	Yes
	Short-billed dowitcher	*Limnodromus griseus*	M	DP	R	Yes
Laridae	California gull	*Larus californicus*	R	Other	F, R	Yes
	Western gull	*Larus occidentalis*	R	Other	F, R	Yes
	Herring gull	*Larus argentatus*	R	Other	F, R	Yes
	Ring-billed gull	*Larus delawarensis*	R	Other	F, R	Yes
Sternidae	Forster's tern	*Sterna forsteri*	R	P	F, R	Yes
Rynchopidae	Black skimmer	*Rynchops niger*	R	P	F, R	Yes
Falconidae	Peregrine falcon	*Falco sparverius*	R	Other	R	Yes
	American kestrel	*Falco peregrinus*	R	Other	R	Yes

[1]R = Resident to San Francisco Bay, M = Migratory

[2]From Takekawa, J.Y., Lu, C.T. and R.T. Pratt. 2001. Avian communities in baylands and artificial salt evaporation ponds of the San Francisco estuary. *Hydrobiologia* 466: 317-328. DB = diving benthivores, P = piscivores, SP = shallow probers, DP = deep probers, SF = surface feeders.

[3]Based on unpublished bird count observations by Matt Leddy (2009-2016) and personal 2015-2016 bird observations of R .A. Leidy, U.S. EPA, San Francisco, CA.

[4]eBird (**http://ebird.org/content/ebird/**). Accessed 2016.

Table 3. Waterbird Counts in Selected Redwood City Salt Ponds between December 2009 and April 21, 2016 (136 observation days). (All counts made by and compiled from Matt Leddy unless otherwise noted).

Species	Crystal. 1	Crystal. 2	Crystal. 3	Pond 5	Pond 6	Pond 7B	Pond 7C	Pond 8W	Pond 10	Totals
Black-bellied Plover		822	112				24		1	**959**
Semipalmated Plover	11623	1				910	1215		2391	**16140**
Snowy Plover	29					4	4			**37**
Killdeer	14					7	37		5	**63**
Black-necked Stilt	761	247	83			361	640		4107	**6199**
American Avocet	264	741	299			287	1103		18448	**21142**
Greater Yellowlegs									10	**10**
Greater/Lesser Yellowlegs						7			23	**30**
Willet			20			270	347		66668	**67305**
Whimbrel									8	**8**
Marbled Godwit									32331	**32331**
Western Sandpiper	2427	687	42			174	1576		25054	**29960**
Least Sandpiper	18992	2210	155			245	646		6345	**28593**
Dunlin	250	899	17			628	507		41442	**43743**
Least Sandpiper/Dunlin	1850									**1850**
Western Sandpiper/Dunlin						3030			8130	**11160**
Western or Least Sandpiper	3415	735				612	118		775	**5655**
Western/Least/Dunlin	790	135	20			4175	633		15255	**21008**
Long-billed Dowitcher									2	**2**
Unidentified Dowitcher species	1	2							22623	**22626**
Great Egret									1	**1**
Mixed flock of American Avocet/Black-necked Stilt/Willet							420			**420**
Calidrid/Charadriid Plover ... unidentified small shorebird/s						4900	3600	50[2]		**8550**
Red-throated Loon	1									**1**
Canada Goose				9[1]	4[1]	8	28		12	**61**
Bufflehead						5	12		401	**418**
Northern Shoveler	76								150	**226**
Great Scaup									40	**40**
Lesser Scaup			1						32	**33**
Greater/Lesser Scaup							20		105	**125**
Common Goldeneye		1				49	26		9	**85**
Forster's Tern									46	**46**

Unidentified Gull	2716	875	189			1176	2089		261	**7306**
Totals	**43209**	**7355**	**938**	**9**	**4**	**16848**	**13045**	**50**	**244675**	**326133**

Waterbirds tend to show a high fidelity within seasons to roost sites in San Francisco Bay, including salt ponds and surrounding tidal mudflats.[146] During winter and spring, western sandpipers on South San Francisco Bay have been shown to consistently move back and forth to the same roost sites in salt ponds and foraging sites on tidal mudflats,[147] a behavior that has been documented for other South San Francisco Bay shorebirds.[148] It is likely that waterbirds documented from the Redwood City Salt Ponds also show a similar level fidelity to roosting and feeding sites and surrounding tidal mudflats in San Francisco Bay.

At least 70 species of waterbirds have been documented feeding in San Francisco Bay salt ponds.[149] Western sandpipers have been documented moving an average of 2.2 km between roosting sites in SB salt ponds to foraging feeding sites on tidal mudflats[150] while dunlin have been documented making 10-15 km daily movements between wetlands.[151] The linear distance between the salt ponds and adjacent tidal mudflats and other waters of San Francisco Bay is generally less than 0.5 km. See Figure 1.

San Francisco Bay waterbirds utilize low-to-high salinity salt ponds. The salinity of South San Francisco Bay salt ponds is known to be an important non-linear predictor of waterbird abundance and diversity and this is likely related in part to prey abundance. [152] The highest number of waterbirds were documented from South San Francisco Bay salt ponds with salinities of about 140 ppt and the greatest species diversity in salinities around 126 ppt, but this varies depending on waterbird group.[153] The expected core salinity ranges for waterbirds species observed within the Redwood City Salt Ponds indicates a wide range of salinity tolerances consistent with other studies (Table 4). In salt ponds, invertebrate species richness declines with increasing salinity but the effect is not linear for invertebrate biomass.[154] Invertebrates that are important in the diets of waterbirds such as Franciscan brine shrimp (*Artemia franciscana*), reticulated water boatman (*Trichocorixa reticulata*) and brine flies (*Ephudra* and *Lipochaeta slossonae*) are at their highest densities at salinities of 60-200 ppt[155] The salt

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[146] Warnock, N., *Synthesis of Scientific Knowledge for Managing Salt Ponds to Protect Bird Populations,* Technical Report of the South Bay Salt Pond Restoration Project, State Coastal Conservancy, 2005.

[147] Warnock, S.E., and J.Y. Takekawa, Habitat preferences of wintering shorebirds in a temporally changing environment: western sandpipers in the San Francisco Bay estuary, *Auk* 112; 920-930, 1995; Warnock, S.E., and J.Y. Takekawa, Wintering site fidelity and movement patterns of western sandpipers, *Calidris mauri*, in the San Francisco Bay estuary. *Ibis* 138: 160-167, 1996.

[148] Kelly, P.R., and H.L. Cogswell, Movements and habitat use by wintering populations of willets and marbled godwits, *Studies in Avian Biology*, no. 2: 69-82, 1979.

[149] Swarth, C.W., Akagi, C., and P. Metripulos, The distribution patterns and ecology of waterbirds using the Coyote Hills salt ponds, Report to the San Francisco Bay National Wildlife Refuge, U.S. Fish and Wildlife Service, Newark, CA 1982; Warnock et al. 2002.

[150] Warnock, S.E., and J.Y. Takekawa, 1996.

[151] Warnock, N., Page, G.W., and L.E. Stenzel, Non-migratory movements of Dunlin on their California wintering grounds. *Wilson Bulletin* 107: 131-139, 1995; Warnock, N., Local and regional differences in habitat utilization by dunlins (*Calidris alpina*) as revealed by radiotelemetry; conservation implications. *International Wader Studies* 8: 35-38, 1996.

[152] Swarth et al. 1982; Takekawa, J.Y., Lu, C.T., and R.T. Pratt, Avian communities in baylands and artificial salt evaporation ponds of the San Francisco Bay estuary, *Hydrobiologia* 466: 317-328, 2001; Warnock et al. 2002; Takekawa, J.Y., Miles, A.K., Schoellhamer, D.H., Athearn, N.D., Saiki, M.K., Duffy, W.D., Kleinschmidt, S., Shellenbarger, G.G., and C.A. Jannusch, Trophic structure and avian communities across a salinity gradient in evaporation ponds of the San Francisco Bay estuary, *Hydrobiologia* 567: 307-327, 2006.

[153] Warnock et al. 2002.

[154] Britton, R.H., and A.R. Johnson, An ecological account of a Mediterranean salina: the Salin de Geraud, Camargue (S. France), *Biological Conservation* 42: 185-230, 1987; Williams, P.B., Boulton, A.J., and R.G. Taaffe, Salinity as a determinate of salt lake fauna: a question of scale, *Hydrobiologia* 197: 257-266, 1990; Murphey, J.L. 2013.

[155] Anderson 1970; Maffei, W.A., Invertebrates: reticulate water boatman, Baylands ecosystem species and community profiles: life histories and environmental requirements of key plants, fish and wildlife, P. Olofson, Ed., prepared by the San Francisco Bay Area

ponds are within this salinity range and documentation of waterbird species with different salinity preferences feeding within the salt ponds suggests suitable prey is available.[156]

Several waterbird species have been documented breeding in South San Francisco Bay salt ponds (*e.g.*, dry pond bottoms, levees, and internal islands) including killdeer, snowy plover, American avocet, Black-necked stilt, least tern, Forster's tern, Caspian Tern, California gull and black skimmer[157] With the exception of Caspian tern, all of these species have been documented from the Redwood City Salt Ponds.[158] Table 2.

Wetlands Ecosystem Goals Project, San Francisco Bay Area Regional Water Quality Control Board, 2000, at 154-156; Maffei, W.A., Invertebrates: brine flies, Ecosystem Goals Project 2000, at 179-182; Murphey, J.L. 2013.

[156] S.R. Hansen and Associates, March 26, 1996.

[157] Gill, R.E., Jr., Breeding avifauna of the South San Francisco Bay estuary, *Western Birds* 8:1-12, 1977; Layne, V., Richmond, R.J., and P.J. Metropulos, First nesting of black skimmers on San Francisco Bay, *Western Birds* 27: 159-162, 1996; Strong, C.M., Spear, L., Ryan, T., and R. Dakin, Forster's tern, Caspian tern and California gull colonies in San Francisco Bay: habitat use, numbers and trends, 1982-2003, *Waterbirds* 27: 411-423, 2004; Rintoul, C., Warnock, N., and G.W. Page, Breeding status and habitat use of black-necked stilts and American avocets in South San Francisco Bay, *Western Birds* 34: 2-14, 2003.

[158] Kelly letter 2010.

Table 4. Classification of core salinity ranges of waterbird species observed within Redwood City Salt Ponds from Leddy (2016)[1] and eBird (2016).[2] Core salinity ranges represent values between the 25th and 75th percentiles and are based upon bird detections in South bay salt ponds from 1999-2001 as presented in Stralbery *et al.* (2003)[3] and Warnock (2005).[4]

	Salt Pond Salinity Ranges (ppt)		
0-60	60-120	120-180	>180
Species			
Forster's Tern	Canada Goose	Ring-billed Gull	Western Sandpiper
Marbled Godwit	Northern Shoveler	Killdeer	California Gull
Great Egret	Common Goldeneye	Snowy Plover	
Snowy Egret	Ruddy Duck	Lesser Scaup	
Red-throated Loon	Mallard	Great Scaup	
Black-skimmer	Black-bellied Plover	American Avocet	
	Long-billed Curlew	Sanderling	
	Dowitcher	Whimbrel	
	Semipalmated Plover	Willet	
	Western Gull	Dunlin	
	Bufflehead	Least Sandpiper	
	Greater Yellowlegs	Western Sandpiper	
	Lesser Yellowlegs	California Gull	
	Wilson's Phalarope		
	Ring-billed gull		
	Killdeer		
	Snowy Plover		
	Lesser Scaup		
	Greater Scaup		
	American Avocet		
	Sanderling		
	Whimbrel		
	Willet		
	Dunlin		
	Least Sandpiper		
	Western Sandpiper		
	California Gull		
N = 23	27	13	2

[1] Leddy, M. 2016. Waterbird counts in Redwood City Salt Ponds between December 2009 and April 21, 2016. Unpublished data.
[2] eBird (http://ebird.org/content/ebird/). Accessed 2016.
[3] Stralbery, D., Warnock, N., Nur, N., Spautz, H., and G.W. Page. 2003. Predicting the effects of habitat change on South San Francisco Bay bird communities: an analysis of bird-habitat relationships and evaluation of potential restoration scenarios. (Contract #02-009, Title: Habitat Conversion Model). Final Report, California Coastal Conservancy, Oakland, CA.
[4] Warnock, N. 2005. Synthesis of scientific knowledge for managing salt ponds to protect bird populations. Draft Final Report. South Bay Salt Pond Restoration Project. PRBO Conservation science contribution no. 1167, Stinson Beach, CA.

Mammals. Both grey fox (*Urocyon cinereoargenteus*) and coyote (*Canis latrans*) have been observed within the Redwood City Salt Ponds. See Figure 10.[159] Gray fox have been regularly documented from the baylands of South San Francisco Bay where they are known support breeding populations and range widely.[160] Other species of small mammals that have been observed within South San Francisco Bay salt ponds and adjoining wetlands include red fox *(Vulpes vulpes*), skunks (*Spilogale gracilis*, *Mephitis mephitis*), raccoons (*Procyon lotor*), opossums (*Didelphus virginiana*), domestic cats (*Felis catus*), and Norwegian rats (*Rattus norvegicus*).[161] Foxes and coyotes have been observed using salt pond levees while hunting, so it is reasonable to expect these mammals to move regularly between the salt ponds and other San Francisco Bay ponds and waters. This represents a notable biological link between the Redwood City Salt Ponds and other Bay waters.

(a) Upper and (b) lower photograph

[159] Matt Leddy observed and photographed two gray foxes on the levee road adjacent to Pond 10, on February 2, 2013. R.A. Leidy observed a single adult coyote emerging from interior southern edge of salt pond 8W and moving over levee and into Bayfront Channel, and continuing along channel in an easterly direction toward Flood Slough, on March 14, 2016.

[160] Urban Wildlife Research Project. https://urbanwildliferesearchproject.com/documentary/.

[161] Western Snowy Plover Monitoring in the San Francisco Bay area, Annual Report 2014, prepared by the San Francisco Bay Bird Observatory for the San Francisco Bay National Wildlife Refuge and CDFW, December 31, 2014; Breaux, A.M., Vertebrates: Norway Rat and Roof Rat, Ecosystem Goals Project 2000 at 249-250; Harding, E.K., Vertebrates: Norway Red Fox, Ecosystem Goals Project 2000 at 251-252.

Figure 10. (a) Two gray foxes (*Urocyon cinereoargenteus*) on Redwood City salt works levee road adjacent to Pond 10. Note roosting and feeding waterbirds within inundated Pond 10. Westpoint Marina in background (b) Single gray fox on levee road adjacent to Pond 10, Redwood City salt ponds. Photographs taken on February 2, 2013 at 11:03 am and 11:06 am by Matt Leddy.

Fishes. Water from San Francisco Bay is regularly imported into the Redwood City Salt Ponds from First Slough via pumps or by hydraulic pressure through water control devices (tidal gates) for use in salt processing operations.[162] This seawater is subsequently transported via a constructed ditch system within the perimeter dikes for distribution into the crystallizer beds 1-9 and Desalting Pond 10. It is likely that fish living in San Francisco Bay are imported into the ditch and ponds through the tide gate(s). Relatedly, rainwater killifish (*Lucania parva*) were observed within a drainage ditch that runs along the northern perimeter of the site between the site and Pacific Shores/Westpoint Marina.[163] Fish likely entered the drainage ditch during high tide through a leaky tide gate that connects the ditch to San Francisco Bay. This suggests that fish would also able to enter the site when the tide gates are open. Any fish entering the site would be subject to predation by waterbirds, thereby providing a biological connection to San Francisco Bay.

Federally-Listed Threatened and Endangered Species. The federally endangered snowy plover has been observed regularly over the last decade roosting and feeding within the Redwood City Salt Ponds (Figure 11).[164] Nine and twelve snowy plovers were reported from the site in 2001 and during summer 2003, respectively.[165] In 2001 snowy plovers were recorded nesting in Pond 1.[166] In 2013 Cargill representatives reported a sighting of one Snowy Plover adult with two chicks in between active Redwood City evaporation ponds on the inboard side of Bittern Pond 9 and Pickle Pond 7b.[167]

Summary.

The functions performed by the Redwood City Salt Ponds considered individually, and collectively in the aggregate with the functions of similarly situated waters within the South San Francisco Bay region, have a significant effect on the physical, chemical and biological integrity of the waters of San Francisco Bay. This is because the salt ponds are sufficiently proximate to San Francisco Bay to ensure that their functions are effectively and consistently affect the waters of San Francisco Bay. The salt ponds and Bay waters function together as an ecological system: (1) Foraging and feeding (food web support) migratory and resident birds use ponds to consume worms, brine flies, water boatman, brine shrimp and birds. (2) Invertebrates feeding on bacteria/algae supports base on food web and species located in TNWs. (3) Hide tide refugia for migratory and resident birds. (4) Nesting habitat for snowy plover. It is well understood and acknowledged that salt ponds exhibit wide temporal variation in salinity and that pond water supports high biological productivity and exhibit significant food web support functions over a wide range of salinities. This biological productivity is important at local (site) and broader

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[162] Cargill, personal communication, September 30, 2015 EPA site visit; Douglass letter to ACOE, February 28, 2002.
[163] R.A. Leidy, EPA, Field Notes, January 21, 2016.
[164] Leddy 2015-2016.
[165] USFWS, Western snowy plover (Charadrius *alexandrinus nivosus*), Pacific Coast Draft Recovery Plan, Portland, OR, 2001; Strong, Cheryl, 2003, as cited in BCDC 2005, at 20.
[166] Clyde Morris, personal communication, as referenced in Siegel and Bachand, 2002 at 32.
[167] Western Snowy Plover Monitoring in the San Francisco Bay area, Annual Report 2014 at 20; P. Mapelli, Cargill, personal communication.

(regional) scales for species located in TNWs. The severing of the existing biological and chemical nexus between the Redwood City Salt Ponds and San Francisco Bay waters would result in a significant, measurable loss of ecological functions of San Francisco Bay.

Figure 11. Federally endangered snowy plover, *Charadrius alexandrinus*, foraging and roosting in Crystallizer 1. Photograph by Matt Leddy, December 22, 2015.

VIII. Conclusion

Within the boundaries of the 1,365-acre subject area, approximately 95 acres of the Property, consisting of levees, building pads and other features that were converted to fast land before passage of the CWA, are not "waters of the United States" where they are above the High Tide Line on the outer side of the perimeter levees bounding the Property, and above the Ordinary High Water Mark on the levee interiors.

The remaining estimated 1,270 acres interior of these levees are "waters of the United States" as defined by the CWA, because: (1) the tidal channels within the Redwood City Salt Ponds were part of the traditionally navigable waters of San Francisco Bay, and were not converted to "fast lands" prior to enactment of the CWA; (2) the salt ponds in their current condition have been shown to be navigable in fact, and are susceptible to use in interstate or foreign commerce with reasonable improvements; (3) the salt ponds are impoundments of waters otherwise defined as

waters of the United States; and (4) the salt ponds have a significant nexus to the traditionally navigable waters of the adjacent San Francisco Bay.

VI. Appendices

- [DRAFT] Subcontractor Report 1 (SFEI)
- [DRAFT] Subcontractor Report 2 (Towill)

EXHIBIT B

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

March 1, 2019

OFFICE OF THE
ADMINISTRATOR

R.D. James
Assistant Secretary of the Army for Civil Works
U.S. Department of the Army
108 Army Pentagon
Washington, D.C. 20310

Dear Mr. James:

This letter transmits the Clean Water Act (CWA) jurisdictional determination for Redwood City Salt Plant site ("the Salt Plant"). On March 18, 2015, EPA designated the Salt Plant as a "special case," as defined by the 1989 Memorandum of Agreement (MOA) between EPA and the Army Corps of Engineers regarding coordination on matters of geographic jurisdiction. Pursuant to the MOA, designation of the special case made EPA responsible for determining the extent to which the Salt Plant contained jurisdictional waters of the United States under the Clean Water Act.

After careful consideration of all relevant facts before the Agency in light of the applicable law and regulations, the EPA has concluded that the Salt Plant is non-jurisdictional fast land. EPA reached this conclusion considering the combination of circumstances at the Salt Plant, including the separation of the Salt Plant over a century ago from the surrounding waters, the federally-authorized excavating, filling, and industrial production and maintenance activities that have taken place at the Salt Plant since that time, and the use of water at the plant as merely a component of a highly engineered industrial operation. EPA's analysis is summarized in the enclosed determination document.

EPA's determination constitutes the position of the federal government on the CWA jurisdictional status of the Salt Plant, and its transmittal concludes the "special case" process. If you have any questions, please contact Lee Forsgren at forsgren.lee@epa.gov or (202) 564-0311.

Sincerely,

Andrew R. Wheeler
Acting Administrator

Enclosure

CC: Lt. General Todd T. Semonite, Commanding General, U.S. Army Corps of Engineers
Matthew Z. Leopold, General Counsel, EPA
Mike Stoker, Regional Administrator, EPA Region 9
Anna Wildeman, Principal Deputy Assistant Administrator, Office of Water, EPA

REDWOOD CITY SALT PLANT JURISDICTIONAL DETERMINATION

This document constitutes the determination by the U.S. Environmental Protection Agency's ("EPA") of the federal jurisdictional status of the Redwood City Salt Plant for purposes of the Clean Water Act ("CWA"). This CWA jurisdictional determination applies to the Redwood City Salt Plant site ("the Salt Plant" or "the site"). The site is approximately 1,365 contiguous acres adjacent to Westpoint Slough, located near Seaport Boulevard, Redwood City, San Mateo County, California. EPA has concluded that the site does not include "waters of the United States" because the site was transformed into fast land before passage of the CWA and has not subsequently been overtaken by jurisdictional waters.

I. Introduction and Scope of Determination

This document constitutes the determination of the federal jurisdictional status of the Salt Plant by EPA for purposes of the CWA. This jurisdictional determination is based on Sections 404 and 502(7) of the CWA, 33 U.S.C. §§ 1344 and 1362(7), regulations of the U.S. Army Corps of Engineers (ACOE) at 33 C.F.R. § 328.3(a) and of EPA at 40 C.F.R. § 230.3(o), relevant case law, and EPA and ACOE guidance, including the agencies' January 19, 1989 "Memorandum of Agreement between the Department of the Army and the Environmental Protection Agency Concerning the Determination of the Geographic Jurisdiction of the Section 404 Program and the Application of the Exemptions under Section 404(f) of the Clean Water Act" ("1989 MOA").

A. Geographic Scope of Determination

This CWA jurisdictional determination applies to the Salt Plant, an area of approximately 1,365 contiguous acres adjacent to Westpoint Slough, located near Seaport Boulevard, Redwood City, San Mateo County, California. This determination does not address the jurisdictional status of the areas on the exterior side of the perimeter levees of the Salt Plant.

B. Procedural Background

1. Requests for a Jurisdictional Determination

On November 12, 2009, DMB Redwood City Saltworks ("Saltworks") requested that the San Francisco District of ACOE prepare a preliminary jurisdictional determination ("PJD") under Section 10 of the Rivers and Harbors Act ("RHA") and Section 404 of the CWA for 1,478 acres in and adjacent to the Salt Plant.[1] Saltworks made this request in conjunction with a permit application, filed with Redwood City, for a proposed urban development and tidal marsh restoration project on the site. On April 14, 2010, ACOE issued a PJD in accordance with ACOE Regulatory Guidance Letter 08-02, stating that wetlands and other waters on the site may

[1] According to its submission, Saltworks is a venture whose principals are DMB Pacific Ventures, LLC, and Westpoint Slough, LLC, which is an affiliate of Cargill, Incorporated. The Salt Plant is owned by Cargill Point, LLC, an affiliate of Cargill, Inc. Request for Approved Jurisdictional Determination, from David C. Smith, DMB Redwood City Saltworks, to Jane Hicks, Chief, Regulatory Division, ACOE, and Jason Brush, Manager, Wetlands Office, EPA Region 9, May 30, 2012, with exhibits ("AJD Application").

be jurisdictional under the RHA and CWA.[2] Saltworks engaged in public outreach for the proposed project, but withdrew its application with Redwood City on May 4, 2012.[3]

On May 30, 2012, Saltworks requested that ACOE and EPA prepare final jurisdictional determinations (referred to as "Approved Jurisdictional Determinations" or "AJDs" by ACOE) under the RHA and CWA for the site.

2. EPA "Special Case" for Clean Water Act Jurisdictional Determination

A definitive, official determination as to the presence of jurisdictional aquatic resources can only be made by means of an approved jurisdictional determination.[4] The 1989 MOA between EPA and ACOE provides that, for purposes of Section 404 of the CWA, EPA may designate certain jurisdictional determinations as "special cases" and make the final determination on the jurisdictional status of potential waters of the United States. These determinations are binding on the United States and represent its position in any subsequent federal action or litigation.

In 2014, the Chief Counsel for ACOE prepared two memoranda outlining "Legal Principles to Guide the Approved Jurisdictional Determination for the Redwood City Salt Plant."[5] The Chief Counsel stated that "[t]he site has been highly altered to facilitate the salt manufacturing process," and "[t]his alteration of the site and a century of industrial salt making have eliminated any trace of the prior marshland or wetland character of the site."[6] Furthermore, he concluded that "areas that were lawfully filled, either before the passage of the CWA or pursuant to a CWA permit, are no longer subject to CWA jurisdiction."[7] The Chief Counsel's conclusion was that "the Corps should not assert CWA jurisdiction over the industrial process (pickle and bittern) liquids at the Redwood City site."[8]

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[2] Letter from Jane M. Hicks, Chief, Regulatory Division, ACOE San Francisco District, to David Smith, DMB Associates (Apr. 14, 2010), AJD Application, Ex. 22.
[3] Letter from John Paul Bruno, General Manager and Senior Vice President, Redwood City Saltworks, to the Honorable Alicia Aguirre, Mayor, City of Redwood City (May 4, 2012), AJD Application, Ex. 25.
[4] ACOE Regulatory Guidance Letter No. 16-01 at 2 (Oct. 2016).
[5] Memorandum from Earl H. Stockdale, Chief Counsel, ACOE, "Legal Principles to Guide the Approved Jurisdictional Determination for the Redwood City Salt Plant," (Jan. 9, 2004) ("Stockdale Memo"); Memorandum from Earl H. Stockdale, Chief Counsel, ACOE, "Supplement to 'Legal Principles to Guide the Approved Jurisdictional Determination for the Redwood City Salt Plant' 9 January 2014," (Mar. 25, 2014) ("Stockdale Supplement").
[6] Stockdale Memo at 16.
[7] *Id.* at 17. The Chief Counsel also concluded that "The fact that the majority of the area within the Redwood City site was improved in a manner that did not necessarily raise the elevation above that of the MHW does not make this principal any less applicable. A CWA jurisdictional determination must be based on the site conditions today and not some prior site condition that no longer exists." *Id*. at 17-18 (citing *United States v. Milner*, 583 F.3d 1174, 1195 (9th Cir. 2009).
[8] *Id*. at 23.

On March 18, 2015, ACOE sent an email to EPA indicating that ACOE intended to "finalize and sign" a determination that "the site is not jurisdictional under the CWA" and attaching an unsigned memorandum for the record explaining the basis for this conclusion.[9] That same day, EPA sent a letter to ACOE designating the site's CWA jurisdictional determination as a special case under the 1989 MOA.

3. ACOE Rivers and Harbors Act Section 10

Congress enacted the Rivers and Harbors Act of 1899 to promote water transportation and commerce by protecting the navigability of the nation's waterways. Section 13 of the RHA, 33 U.S.C. § 407, which prohibited the discharge of "refuse" into any "navigable water" or its tributaries, or on the banks of a navigable water or its tributaries "whereby navigation shall or may be impeded or obstructed," provided an exception for refuse "flowing from streets and sewers . . . in a liquid state," and authorized the Secretary of War to issue permits for deposits of refuse if "anchorage and navigation will not be injured." 33 U.S.C. § 407. Because of this focus on navigability, the Corps defines "navigable waters of the United States" as "those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce." 33 C.F.R. § 329.4.

Notwithstanding EPA's designation of the site's CWA jurisdictional determination as a special case, ACOE retained the authority to determine RHA jurisdiction. ACOE issued an AJD with respect to the RHA on March 19, 2015.[10] ACOE determined that only certain areas in the eastern section of the site are jurisdictional under Section 10 of the RHA. The total area of these double-sided sloughs was calculated to be 56.87 acres. ACOE did not find RHA jurisdiction for any part of the western section of the site, stating that in the past the Army had either portrayed that portion as non-jurisdictional improved lands, or had explicitly determined that the area was non-jurisdictional.

The scope of RHA jurisdiction is relevant to the permitting history of the Salt Plant, but not to EPA's determination as to whether the site is jurisdictional under the CWA.

II. The Redwood City Salt Plant

Prior to development, the Salt Plant was an area of tidal marsh interspersed with numerous sloughs. Currently, the site consists of levees, building pads, and industrial ponds constructed for salt production.

A. Early History

At the turn of the twentieth century, a number of commercial-scale salt production operations began along the edges of San Francisco Bay. The lands and waterways around the Port of

[9] Email from Major General John W. Peabody, ACOE, to Kenneth J. Kopocis, Deputy Assistant Administrator for Water, EPA (Mar. 18, 2015).

[10] Major General John W. Peabody, ACOE, "Basis for Rivers and Harbors Act of 1899 Section 10 Approved Jurisdictional Determination, Redwood City Saltworks" (Mar. 19, 2015).

Redwood City underwent intensive commercial development. Development of the Salt Plant began in 1901. By 1902, the Redwood City Salt Company and the West Shore Salt Company leased or owned portions of the site.[11] The Redwood City Salt Company operated its salt works, including evaporators, crystallizers, and other industrial ponds constructed for salt production, on approximately 432 acres (of a total 1,784 acres of leased land) east of Redwood Creek and southwest of First Slough. West Shore Salt Company owned and operated 192 acres of additional salt works on the southern portion of the present-day crystallizers. According to the local newspaper, the industrial salt production ponds produced their first salt crops in October 1902. "Water was taken in from San Francisco Bay by pumps and/or inlets, concentrated into brines by solar evaporation in sequential basins, and moved into small rectangular crystallizers to eventually crystallize as salt that was then harvested by hand."[12]

The Stauffer Chemical Company consolidated these operations in 1907. By approximately 1930, the operators in the western section had dredged the bottoms of most of the salt production ponds and eventually obliterated the traces of some, but not all, original tidal sloughs. In addition, by 1931, the Redwood City Harbor Company, the salt companies, and ACOE had erected levees separating the former marshlands between Redwood Creek, Westpoint Slough, and First Slough from San Francisco Bay and the adjacent sloughs.[13] A 1931 survey of the Salt Plant shows that the 603-acre area had been converted into industrial salt making facilities, filled areas, and reclaimed marsh.[14] Stauffer later became the Leslie Salt Company. Cargill, Inc. purchased Leslie Salt in 1978.

ACOE began issuing permits pursuant to Section 10 of the Rivers and Harbor Act (RHA) in the early twentieth century. EPA is not aware of any RHA permits issued for salt processing operations at the Salt Plant prior to 1940. There are records indicating that ACOE did issue some RHA permits to construct salt processing infrastructure (e.g. levees, dams, siphons, and pipelines) by various companies in south San Francisco Bay in the 1920-1960s, including permits for expansion of the Salt Plant.[15] The RHA permit record shows the intensive expansion of salt pond facilities in the South Bay during this time, including the establishment of pipeline connections among plant sites to consolidate operations.

[11] San Francisco Estuary Institute, *Redwood City Draft Technical Memo*, March 22, 2016, ("SFEI 2016").
[12] Michael Josselyn, Ph.D., WRA, Inc., *Early History of Redwood City Salt Plant Site* (Feb. 27, 2012), AJD Application, Ex. 5 ("Early History Report").
[13] *See* WRA, Inc., Summary of Historic Levee Construction (Feb 2012), AJD Application, Ex. 6.
[14] Michael Josselyn, Ph.D., WRA, Inc., Topographic Sheets Denote Marsh Elevations Above Mean High Water (Feb. 27, 2012) ("Marsh Elevations Report"), AJD Application, Ex. 7, at 2-3 and Attachments B, C, USGS Sheet 4643 (Jul. 1, 1931).
[15] Department of the Army, ACOE, San Francisco District, June 20, 2013. Permit summary for South Bay projects from 1905-2010.

B. Permit History

1. 1940 RHA Section 10 Permit

On December 8, 1939, Leslie Salt's predecessor, Stauffer Chemical, submitted a permit application to the War Department to dam First Slough, which separated the existing industrial salt production ponds from the undeveloped eastern section of the site, and to construct levees around the eastern section.[16] The application shows the base of the proposed dam five feet below Mean Lower Low Water (MLLW) and 13 feet below Mean Higher High Water (MHHW) in First Slough. It also shows "marsh land" to be at the elevation of MHHW. The plan accompanying the application also shows that the former marshland areas between Redwood Creek, Westpoint Slough, and First Slough had been converted to salt making operations previously, so the permit only authorized obstruction and conversion of the areas of the Salt Plant that ACOE deemed subject to RHA jurisdiction, First Slough and Westpoint Slough.

Pursuant to Section 10 of the RHA, on January 14, 1940, the War Department granted the permit:

> To construct an earth dyke or levee across and along the bank of First Slough, and along the banks of Westpoint Slough and an unnamed tributary thereof, in Westpoint Slough, at about 1.0 mile southeasterly of the mouth of Redwood Creek, San Mateo County, in accordance with the plans shown on the drawing attached hereto marked "Proposed Dam and Levee East of Redwood Cr., San Mateo County, California, Application by Stauffer Chemical Co., Dated Dec. 1939"[.]

The War Department's December 9, 1939, public notice for the permit included a map, attached to the application and incorporated into the permit, showing most of the western section of the site as "Salt Evaporating Ponds," west of an "Existing Levee," and a smaller part to the north as "Reclaimed Marsh." The map shows the eastern section of the site as marshland with large and minor sloughs throughout.

In 1941, Leslie Salt began construction of the current facilities at the Salt Plant, including the large rectangular crystallizer beds in the western section of the site.[17] Leslie Salt initiated construction of the First Slough dam and the levees along Westpoint Slough in 1943 and worked throughout the 1940s to construct the Salt Plant by leveeing, excavating, filling, and compacting the Salt Plant to create the crystallizer beds, pickle ponds, bittern ponds, facility headquarters, and multi-use areas. The levees authorized under the 1940 permit were completed in or around 1946, and the crystallizers were completed in 1950.[18]

Construction drawings for the crystallizer beds show that these structures were constructed with a clay bottom that would be flat and hard, such that the crystallizers would be graded and leveled

[16] War Department, Section 10 Permit issued to Stauffer Chemical Company, January 16, 1940.
[17] Ver Planck, W.E., *Salt in California*, State of California Department of Natural Resources, Division of Geology and Mines, Bulletin 175 (1958).
[18] Early History Report at 18 & Figures 11, 12; 1946 aerial photographs of First Slough dam, Westpoint Slough, and Food Slough levees.

after each salt harvest.[19] By 1951, all of the Salt Plant work was completed and the current borders and operations of the Salt Plant established, and the plant first began shipping salt product. Since that time, the Salt Plant has continuously produced salt, using its construction equipment and grading and leveling the crystallizers with each salt crop.

2. 1947 Dredging Permit

On March 19, 1947, Leslie Salt submitted to the War Department a permit application to dredge parts of Redwood Creek, a salt pond adjacent to Redwood Creek, and an area in Westpoint Slough.[20] The dredged material was proposed to be placed in the western section of the enclosed evaporation ponds, in the location of the present-day crystallizers. The discharge location was identified generally as "Area to be Filled." It is likely that the dredged material was used to create and maintain internal levees within the industrial salt production ponds, since spreading the material across the western section would have interfered with salt production, and later aerial photographs do not show filled areas, other than the levees.

On April 28, 1947, the War Department issued a permit allowing Leslie Salt to dredge a total of 1.5 million cubic yards of material from the four discrete areas. From 1950 to 1951, Leslie Salt constructed the current large crystallizer beds and internal levees within the "Area to be Filled".[21]

3. Pipeline Connection to Newark

On February 9, 1951, ACOE issued a permit for Leslie Salt to construct an eight-inch pipeline across the Dumbarton Strait, apparently between the Newark and Redwood City plant sites.[22] The available records show that this was the first pipeline constructed to facilitate brine transfer between the two salt pond complexes. ACOE permitted a larger 20-inch pipeline across the Dumbarton Strait in 1964. According to a report from 1972, all of Leslie Salt's plants could be operated as independent units, although the pipelines facilitated pond utilization as needed.[23] System maps from the 1980s and 1990s depict unidirectional flow from the Newark plant to the Redwood City plant.[24] Prior to connecting the Redwood City plant to the Newark plant, and at subsequent times, the Redwood City plant took seawater directly into some of the industrial salt production ponds, via intake manifolds and pumps.[25] From 1951 to at least 2002, Leslie Salt (later Cargill) imported seawater through the intake pipe and tide gate structure located at First Slough (between ponds 4 and 8E) to desalt the crystallizer beds and desalting pond (Pond 10).[26] In 2000 and 2001, Cargill constructed new intake pipes on Pond 1 of the Ravenswood Complex

[19] Redwood City Salt Plant Crystallizer Grading Drawings 772 (1949), AJD Application, Ex. 10.
[20] War Department, Permit Issued to Leslie Salt Company, April 28, 1947.
[21] Early History Report, AJD Application, Ex. 5.
[22] ACOE Permit summary (2013).
[23] CDM Inc., Report on Proposed Discharge of Bittern to San Francisco Bay, prepared for Leslie Salt (Mar. 31, 1972).
[24] Leslie Salt Company, Southbay Production Facilities, base aerial photography (Apr. 1985).
[25] Early History Report; *see also* Cargill Salt Division, Letter to ACOE requesting disclaimer of jurisdiction for Cargill's Redwood City Plant Site, (Feb. 28, 2002).
[26] Cargill Salt Maintenance Work Plan Report 2002-2003 (Apr. 2002).

(formerly part of the Redwood City plant) to bring in seawater to improve brine flow.[27] In addition, stormwater that fell on the industrial salt production ponds was periodically discharged from the First Slough pipe to the Bay, authorized first by a San Francisco Regional Water Quality Control Board (Regional Board) Individual NPDES permit and Waste Discharge Requirements (WDR) (CA0028690, Orders 82-59 and 88-163),[28] then later by a State Water Resources Control Board General NPDES permit (91-13DWQ; 97-03DWQ).[29] The site remains under General NPDES permit coverage, but it is unclear whether discharges via the First Slough pipe still occur and, if so, at what frequency.

4. Later State and Federal Permits

Since 1972, Leslie Salt and Cargill have considered options for disposal of bittern into the San Francisco Bay. According to available documentation, bittern has been stored onsite in various industrial salt production ponds at different times (ponds 4, 8E, 9, 9A, and 10)[30] and sent to the Newark plant via Cargill's transbay pipeline or barges.[31]

By the 1980s, Cargill was subject to federal and state permits pertaining to operations improvement and maintenance (O&M) activities, such as dredge lock construction, levee repair, rip-rap renewal, and replacement of gates, pipes, pumps and siphons. In some instances, the O&M permits covered new system improvement work, such as spot repairs with land-based equipment of the crystallizer beds and installation of a new 16-inch pipeline and associated infrastructure to pump brines and bittern from the Redwood City plant to the Newark plant.[32] Cargill modified the pipeline to better control the brines and bittern within its entire South Bay salt production system as it was reduced by the transfer of vast acres to the South Bay Salt Ponds Restoration Project.

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[27] Cargill Salt Maintenance Report, (Mar. 22, 1999).

[28] San Francisco Regional Water Quality Control Board: WDID 2417125001, Order No. 82-59, NPDES No. CA0028690, Waste Discharge Requirements for Leslie Salt Company, Redwood City Facility (Nov. 1982); WDID 2417125001, Order No. 88-163, NPDES No. CA0028690, Waste Discharge Requirements for Leslie Salt Company, Redwood City Facility, (Nov. 1988); Administrative Extension of NPDES Permit Nos. CA0028703, CA0028690, and CA0028681 for Cargill's Newark, Redwood City, and Napa facilities (Nov. 1, 1993).

[29] SWRCB, Notice of Intent for General Permit to Discharge Stormwater Associated with Industrial Activity, WQ Order No. 91-13-DWQ (Apr. 1, 1992); Notice of Intent for Existing Facility Operators to Comply with the Terms of the General Permit to Discharge Stormwater Associated with Industrial Activity, WQ Order No. 97-03-DWQ (June 11, 1997).

[30] Regional Board, November 30, 2012 Inspection of Cargill, Inc.'s Redwood City Salt Plant in San Mateo County and Newark Plant in Alameda County; Regional Board, Staff handwritten notes for August 9, 1990 inspections conducted on Leslie Salt's Newark and Redwood City plants ("1990 Staff Notes"); Cargill Salt 2001-02 Maintenance Report (Oct. 2002); Cargill Salt 1999-2000 Maintenance Report (Sept. 2000); Cargill Salt 1998-99 Maintenance Report (Aug. 1999).

[31] 1990 Staff Notes.

[32] Cargill Salt Maintenance Reports, *supra* n.30.

Starting in 1988, ACOE issued permits under CWA Section 404 to Cargill for operations and maintenance covering existing levees and infrastructure for Cargill's facilities around the San Francisco Bay area.[33] Cargill regularly stated that it reserved the right to claim that the type and location of the work described in the permits and work plans is outside ACOE jurisdiction and/or exempt from 404 CWA permit requirements. Specifically, the cover letters to Cargill's ACOE permit applications and annual reports pursuant to permit requirements have typically included the following language:

> Cargill historically has reserved its right to argue that the type and location of the work described in the enclosed work plan is outside the jurisdiction of the Corps and/or exempt from permit requirements under section 404(f) of the [CWA] . . . [and in its current permit application/report] Cargill does not waive—and expressly reserves—its position that the work described in [the] work plan is outside Corps jurisdiction and/or exempt from permit requirements.[34]

In another letter connected with its Section 404 permit application, Cargill has definitively stated its position that the activities authorized by its permit are "exempt from regulation" under CWA section 404 and that "a permit for such activities is not required."[35]

Cargill has received a water quality certification for Cargill's salt pond maintenance activities from the Regional Board.[36] In addition, the San Francisco Bay Conservation and Development Commission (BCDC) also issued permits covering the O&M activities under the McAteer-Petris Act.[37]

C. The Nature of the Salt Production Process

1. The Nature of the Industrial Salt Production Ponds

[33] Department of the Army Regional Permit No. 17040E98 (Aug. 30, 1988); Department of the Army Regional Permit No. 19009S98 (July 10, 1995); Department of the Army Regional Permit No. 19009S98 (Nov. 29, 1995); Department of the Army authorization for coverage under Nationwide Permits 3 and 18, File No. 2008-00146S (Apr. 16, 2008); Department of the Army authorization for coverage under Nationwide Permits 3 and 18, File No. 2008-00146S (Oct. 2, 2008); Department of the Army Permit, File No. 2008-00160S (Sept. 10, 2010).

[34] *See, e.g.*, Cover Letters to the Cargill Maintenance Work Plan 2015-2016, Feb. 26, 2015, ACOE Permit 2008-00146S; Advance Notification of Proposed Work, Cargill Salt's June 2014-May 2015 Maintenance Work Plan, ACOE Permit 2008-00146S; and Cargill Salt Completed Work Plan, June 2013-May 2014, ACOE Permit 2008-00146S.

[35] Letter from Cargill to Lt. Col. Michael J. Walsh, District Engineer, San Francisco District, ACOE at 2 (Jan. 13, 1995).

[36] Regional Board, Water Quality Certification for Maintenance Activities and System Improvements to be Conducted Between November of 2009 and November of 2019 at the Cargill Solar Salt Systems in Alameda and San Mateo Counties, Site No. 02-01-C-994, August 3, 2010.

[37] San Francisco Bay Conservation and Development Commission, Permit No. 4-93 (Mar.14, 1995, as amended through Aug. 29, 2002), Amendment Three to Permit No. 4-93 (Aug. 29, 2002).

Cargill and its predecessors configured the levees on the site to move highly saline process water and brines sequentially through a series of industrial salt production ponds to produce salt and hold residual bitterns. The levees are intended to separate the salt production process from direct inputs of San Francisco Bay, except for limited circumstances when water is pumped in or out of the ponds, and occasions when Cargill moves its floating dredge, *The Mallard*, into the industrial salt production ponds. The industrial salt production ponds were not excavated from dry land.

2. The Salt Production Process

The salt production process begins when Cargill pumps seawater into evaporation ponds at its Newark plant, across San Francisco Bay from the site. The seawater is moved through a series of containment cells as the salinity increases. According to Cargill, after approximately four to five years of solar evaporation at the Newark plant, the highly saline process water is transferred by pipe to the Salt Plant.

The industrial salt production ponds at the Salt Plant are connected to each other. Process water pumped from the Newark plant first enters Ponds 7a, 7b, 7c and 8w (the "pickle complex") at the Salt Plant, where additional solar evaporation occurs until the solution is saturated, at which point the highly saline process water is transferred to Ponds 1-9, a series of "crystallizer" cells where the salt precipitates out of suspension. The residual bittern is pumped into Ponds 8e, 9, and 9a, where it is stored until sold, taken by barge to the Newark plant, or recycled back into the salt production process.[38]

The salt that remains on the surface of the crystallizer cells is mechanically scraped from the ground and loaded into trucks to be moved offsite. There is also a "desalting pond" (Pond 10) on the northwest side of the crystallizer ponds, where salt is further removed from the bittern liquid. A water intake is located on Pond 4, which connects to First Slough, where Cargill has at times brought water in from the Bay.[39]

Cargill's levees are periodically maintained by a floating clamshell dredge, *The Mallard*, which accesses them via an excavated tidal channel at either of two pre-approved dredge lock locations.[40] *The Mallard* is the only dredge that operates within the salt ponds; the site lacks the physical capacity to support navigation for interstate commerce.

III. CWA jurisdiction over waters of the United States

1. The definition of waters of the United States

The Clean Water Act prohibits any discharge of pollutants, including dredged or fill material, into navigable waters except as permitted by the CWA. 33 U.S.C. § 1311(a). The Act defines

[38] AJD Application, Attachment B, at 3-4.
[39] Letter from Mr. Robert Douglass, Cargill Salt, to Lt. Col. Timothy S. O'Rourke, District Engineer, ACOE, San Francisco District, re: Disclaimer of Jurisdiction for Cargill's Redwood City Plant Site (Feb. 28, 2002).
[40] For additional information as to how *The Mallard* accesses the salt ponds, see the descriptions contained in the following documents: U.S. Fish and Wildlife Service (USFWS) (1995), WRA (2000), BCDC (1995), and BayKeeper (2015).

"discharge of a pollutant" to include "any addition of any pollutant to navigable waters from any point source." *Id*. § 1362(12)(A). The "navigable waters" over which the CWA exercises this protective jurisdiction are defined in Section 502(7) of the CWA as "the waters of the United States, including the territorial seas." *Id.* § 1362(7). EPA and ACOE regulations currently in effect in the State of California define the scope of waters of the United States to include traditional navigable waters, interstate waters, the territorial seas, tributaries of any of the above-mentioned waters, impoundments of jurisdictional waters, waters adjacent to any of the above-mentioned waters, and certain types of waters that have a significant nexus to traditional navigable waters, interstate waters, or the territorial seas. *See* 40 C.F.R. § 230.3(o); *see also* 33 C.F.R. § 328.3(a) (ACOE regulation). This regulatory definition is the subject of litigation. EPA and ACOE have proposed regulations that would repeal and revise this definition. *See* Proposal to Recodify Preexisting Rule, 82 Fed. Reg. 34,889 (July 27, 2017); Supplemental Notice of Recodification of Preexisting Rule, 83 Fed. Reg. 32,337 (July 12, 2018); Proposal to Revise the Definition of "Waters of the United States," 84 Fed. Reg. 4,154 (Feb. 14, 2019). This determination does not implicate either the litigation or the scope of the regulatory definition currently in effect, however, because it is based on the transformation of the site into fast land prior to passage of the CWA.

2. CWA Jurisdiction over Fast Land

The CWA requires a permit for the discharge of dredged and fill material into "the waters of the United States." 33 U.S.C. § 1362(7). A statute is presumed not to be retroactive, and nothing in the CWA suggests that Congress intended to override that presumption. *See Landgraf v. USI Film Prods*, 511 U.S. 244, 270-71 (1994) (explaining presumption against retroactive application of statutes); *see also Golden Gate Audubon Soc., Inc. v. U.S. Army Corps of Engineers*, 717 F. Supp. 1417, 1422 (N.D. Cal. 1988) (amended order) ("[T]he regulatory definition does not retroactively extend the Corps' jurisdiction over areas that have been transformed into dry land."). As discussed further below, CWA jurisdiction includes only areas that are currently waters, not areas that were legally converted to fast land, or converted to fast land prior to passage of the CWA.

In 1978, the Ninth Circuit Court of Appeals held that salt ponds belonging to the Leslie Salt Company, which were separated by dikes from regular tidal inundation, were subject to the CWA, but declined to hold that jurisdiction extended to areas that were "fast land" or "improved solid upland" as of the date of the passage of the CWA. *Leslie Salt Co. v. Froehlke*, 578 F. 2d 742, 756 (9th Cir.1978). In *United States v. Milner*, 583 F.3d 1174 (9th Cir. 2009), the Ninth Circuit more directly addressed the limits of CWA jurisdiction over areas that were dry upland when the statute was passed, holding that "if land was dry upland at the time the CWA was enacted, it will not be considered part of the waters of the United States unless the waters actually overtake the land, even if it at one point had been submerged before the CWA was enacted or if there have been subsequent lawful improvements to the land in its dry state." *Milner*, 583 F.3d at 1195. The court explained that even if fast land has been maintained and prevented from becoming submerged through artificial means, if the activity does not affect waters, excavating, filling, and other work does not pose the type of concern that the CWA is meant to address. *Id*.

ACOE and EPA addressed the absence of CWA jurisdiction over fast land in developing the regulatory definition of "waters of the United States." In 1977, ACOE issued revised final

regulations implementing its CWA Section 404 program, following adverse court decisions which found the original definition to be too limited. 42 Fed. Reg. 37,122 (July 19, 1977). In the preamble, ACOE expressed its policy on previously impacted waters of the United States: "Our intent under Section 404 is to regulate discharges of dredged and fill material into the aquatic system as it exists and not as it may have existed over a record period of time." *Id.* at 37,128. In 1980, EPA stated "[w]hen a portion of the Waters of the United States has been legally converted to fast land by a discharge of dredged or fill material, it does not remain waters of the United States subject to section 301(a). The discharge may be legal because it was authorized by a permit or because it was made before there was a permit requirement." 45 Fed. Reg. 85,336, 85,340 (Dec. 24, 1980). Former waters converted to fast lands before enactment of the CWA (or legally by permit) are not "waters of the United States" for purposes of the CWA.

IV. The Salt Plant is Non-Jurisdictional Fast Land

The Salt Plant was transformed from tidal marsh and sloughs into upland—a highly managed industrial salt processing facility separated from the aquatic environment of the San Francisco Bay—decades prior to the passage of the CWA, and therefore is fast land not subject to the CWA. Ninth Circuit case law and the agencies' interpretations of CWA jurisdiction leave no doubt that a water converted to fast land prior to the enactment of the CWA is not jurisdictional. Neither the relevant judicial opinions nor prior agency interpretations define with precision the meaning of areas that are nonjurisdictional fast land as of the passage of the CWA. However, certain key principles derived from the cases and prior agency interpretations, when applied to the history and characteristics of the Salt Plant, provide the basis for determining that this salt facility is nonjurisdictional fast land. These facts include: (1) the development of the site and its transformation into upland and separation from Bay waters 70 years before passage of the CWA; (2) the numerous federal permitting actions authorizing development of the site and its separation from Bay waters beginning 50 years prior to passage of the CWA; (3) the highly managed industrial operations of the Salt Plant, including the movement of the salt processing substances to successive clay-bottomed crystallizer basins; (4) that the water present at the plant is piped in from another plant after processing there; and (5) that the water at the plant is merely a component of the plant's industrial processing activity until ultimately it evaporates or turns into a byproduct. All of these facts when considered together support the conclusion that the Salt Plant is nonjurisdictional fast land.

The first fact described above, that the site was converted to upland containing a highly managed industrial salt processing facility separated from the aquatic environment of the San Francisco Bay prior to passage of the CWA, is the most significant to this determination. Though some of the characteristics of the site are different from the shore defense structures that the Ninth Circuit viewed as fast land in *Milner*, the court's reasoning and analysis in that case directly supports this determination. Specifically, the fact that the tidal waters were transformed into upland prior to the passage of the CWA was central to the court's holding in *Milner* that the area at issue was no longer a water of the United States. As described above and in the above-cited documents, the Salt Plant was developed beginning in 1901, including the construction of levees and dikes separating the site from surrounding waters as well as basins for evaporation, rectangular crystallizers, and other steps in the production process. By 1930, the bottoms of most of the ponds were dredged and the western section of the site was separated from the Bay. Beginning in 1940, the additional extensive excavating, filling, and compacting of the eastern section of the site converted the entire area into an industrial facility, complete with crystallizer beds, pickle

ponds, bittern ponds, facility headquarters, and a multi-use area. This development was completed prior to the passage of the CWA in 1972, a fact critical to the Ninth Circuit's holding that the land in *Milner* is not jurisdictional. Present-day management of the facility is consistent with its historical conversion to fast land.

In *Leslie Salt Co.*, the Ninth Circuit held that navigable waters extend to the water's reach in its "unobstructed, natural state," and that CWA jurisdiction does not terminate once waters pass through tide gates into salt ponds. 578 F. 2d at 754-55. The Ninth Circuit clarified in *Milner*, however, that *Leslie Salt* did not extend CWA jurisdiction to all places "the water would theoretically reach, partly out of concerns that such a ruling swept too broadly and unnecessarily included 'fast land' or 'improved solid upland.'" 583 F. 3d at 1194. Rather, *Milner* emphasizes that upland at the time the CWA was passed is not jurisdictional "unless the waters actually overtake the land, even if it at one point had been submerged before the CWA was enacted or if there have been subsequent lawful improvements to the land in its dry state." *Id.* at 1195. The Salt Plant was fast land when the CWA was enacted, and it has not since been overtaken by surrounding waters; therefore, consistent with Ninth Circuit precedent, it is not jurisdictional under the CWA.

The separation of the site from the surrounding aquatic system further reinforces a determination that the site is not jurisdictional. The Salt Plant is separated from the surrounding water by levees; the only exchange of water occurs for purposes of occasional operation and maintenance of the Salt Plant's industrial operations. The primary example of this is the activity of the maintenance dredge, *The Mallard.* As described above, when necessary to repair dikes, *The Mallard* excavates a channel between the surrounding waters and the site. When *The Mallard* completes its maintenance work, the locks separating the Salt Plant from the surrounding marsh and Bay waters are closed. Pipes exist that may discharge stormwater that falls on the site into the surrounding waters, but the fact that an industrial facility discharges stormwater through pipes into a nearby water of the United States does not create the type of connection to the water necessary to render the site jurisdictional. The occasional exchange of water through the levees between the San Francisco Bay and the salt ponds for purposes of operating and maintaining the salt processing does not constitute waters "overtak[ing] the land," *see Milner*, 583 F.3d at 1195, and therefore does not render the Site jurisdictional under the CWA.

The fact that the site was developed pursuant to numerous federal government authorizations over the course of many decades also supports a finding that the site has been transformed into fast land. As described above and in the above-cited documents, beginning in 1920 and extending through the 1960s, ACOE issued permits for salt processing infrastructure such as levees, dams, siphons, and pipelines in the western section of the site. In 1940, the War Department issued a RHA Section 10 permit to construct levees around the eastern section of the site and further develop the entire site, followed by another permit in 1947 to dredge parts of Redwood Creek and fill areas that would become levees on the site. In 1951 and again in 1964, ACOE issued permits for the construction of pipelines to carry brine between Redwood City and the Newark plant site. Before the CWA was passed, the federal government authorized the conversion of the site from tidal marshland and sloughs to upland containing an industrial salt production facility.

EPA recognizes that the Salt Plant has different factual characteristics than the area the Ninth Circuit held to be fast land in *Milner*, most notably that process water and brine is at various

times present in some of the industrial salt production ponds at the site. Some might view the mere presence of process water in the industrial salt production ponds during the earlier stages of the evaporation process as counter to a determination that the site is fast land. However, this is not the case. The presence of process water in the industrial salt production ponds does not transform non-jurisdictional upland containing an industrial facility into a water of the United States. The operation encompasses a series of containment cells with flat, hard clay bottoms graded and leveled with earthmoving equipment following every round of salt production. The brine used for salt production at the Salt Plant does not typically come directly onto the site from the San Francisco Bay, but rather is piped in from another facility where it has already undergone processing for four to five years. The brine that is regularly moved from one pond to the next, undergoing further evaporation, until it is transferred to crystallizer cells, where the salt is removed for production and the residual bittern, essentially a waste product, is disposed of. To the extent brines are pooled at the facility, they are integral to, and carefully managed as a part of, the industrial process of salt production. Process water and brine at the plant is simply a component of a highly engineered industrial operation that bears no relationship to the aquatic system. The process water and brine in the salt ponds is used in a controlled industrial process to create salt until the water essentially disappears through evaporation or becomes bittern.

Finally, that Salt Plant has sought coverage for its operation and maintenance activities under a CWA section 404 permit does not undermine EPA's determination that the Salt Plant is not jurisdictional. A definitive, official determination as to the presence of jurisdictional aquatic resources can only be made by means of an approved jurisdictional determination.[41] No approved jurisdictional determination has been issued for the Salt Plant. In fact, no jurisdictional analysis of any kind was conducted in connection with the issuance of the Section 404 permits. A facility's choice to apply for a permit does not convert a nonjurisdictional site into a water of the United States subject to the authority of the federal government. Nonjurisdictional status is not something that can be waived through a permit application, and even if it could be waived, the Site's permit applications have been clear that they reserve the right to assert that its facilities are not jurisdictional.

In summary, considering the combination of circumstances at the Salt Plant, including the separation of the plant over a century ago from the surrounding waters, the federally-authorized excavating, filling, and industrial production and maintenance activities that have taken place at the site since that time and through today, and the regular manipulation of the process water and brine in the ponds through the industrial process until the waters no longer exist, EPA has determined that the Salt Plant is nonjurisdictional fast land.

V. Conclusion

Within the boundaries of the 1,365-acre site, EPA concludes that there are no "waters of the United States" for purposes of the Clean Water Act.

[41] ACOE Regulatory Guidance Letter No. 16-01 at 2 (Oct. 2016).