San Francisco Bay Regional Water Quality Control Board

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September 16, 2024

San Francisco Bay Conservation and Development Commission
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375 Beale Street, Suite 510
San Francisco, CA 94105

Subject: Water Board Comments on the Recirculated Draft Environmental Assessment Cargill, Incorporated Solar Sea Salt System Maintenance and Operations Activities
SCH #2020080442

Dear Mr. Fielding:

San Francisco Bay Regional Water Quality Control Board (Water Board) staff appreciates the opportunity to review the *Recirculated Draft Environmental Assessment, Cargill, Incorporated, Solar Sea Salt System Maintenance and Operations Activities* (Draft EA) (Gaia Consulting, Inc., August 2024). The Draft EA analyzes the environmental impacts of proposed continued maintenance and operation activities of Cargill, Incorporated's (Cargill's) Solar Salt System in Newark and Redwood City, California (Project). Cargill's continuation of its current maintenance and operation activities will be conducted in furtherance of salt production using a systematic process of evaporation along the San Francisco Bay shoreline and within historic salt flat areas.

Summary

As is discussed below, we have the following concerns with the Draft EA

- The Draft EA appears to understate, and should be revised to more-accurately estimate, the likely extent of newly armored outboard berms over the 10-year lifetime of the proposed operations and maintenance permits.
- The Draft EA does not support the conclusion that the armoring of currently unarmored outboard berms will have a less than significant impact, and it should be revised to more clearly require evaluation and implementation of appropriate nature-based solutions, some of which could serve as mitigation for newly armored areas.
- The Draft EA does not yet provide adequate mitigation for potential impacts to aquatic species associated with pumping water from the Bay into the solar salt

> system, but should be revised to required screening of intakes; a proposed study of potential impacts is provided in concept, but must be provided in greater detail sufficient to allow its evaluation during CEQA.

Comment 1.
Section 2.10 Proposed Work
According to Table 2-8, Projected Annual Average Maintenance Activity Quantities, 2025-2034, over the 10-year lifetime of the operation and maintenance permits, 390 linear feet of outboard berm slopes will be armored with new riprap. However, Cargill's annual proposed workplans consistently request approval to armor between 5,000 and 7,000 linear feet of currently unarmored outboard berm surfaces. During its current programmatic operation and maintenance authorization, Cargill has consistently requested permission to armor more linear feet of outboard berm slopes than are authorized. As such, the estimated impact in Table 2-8 appear to substantially understate the amount of potential impact during the 10-year period of analysis.

Unarmored shorelines provide valuable rearing habitat for fish species, including listed salmonids and longfin smelt; this is acknowledged in Draft EA Section 3.4.4.2. As shorelines become exposed to greater erosional forces in response to sea level rise, many landowners will attempt to armor their eroding shorelines. A multitude of small-scale shoreline armoring projects will inevitably result in a significant reduction in the abundance of near shore habitat for foraging and rearing fish. Therefore, the loss of unarmored shorelines would be a significant impact to fish habitat in the Bay. The EA should be revised to identify alternatives to shoreline armoring, where appropriate, and to require mitigation for the loss of unarmored shoreline habitat (See Comments 6 and 10).

Comment 2.
Section 2.10.3.3 Riprap Requirements
Text under the subheading, *Riprap Material Size and Weight*, states that:

> For outboard slopes, Cargill would also evaluate the feasibility of implementing nature-based solutions instead of using riprap, as required by the best management practices for riprap placement described in Section 2.13.

However, the following sentence states:

> Because the majority of the riprap placement is for riprap repairs, and new riprap placement typically occurs for very short sections of berms, nature-based solutions are not expected to be feasible for most outboard riprap placement.

We support the proposed evaluation and subsequent implementation of appropriate nature-based solutions. Further, incremental placement of additional new armoring has the potential to be cumulatively significant, as indicated in part by Cargill's current-year

armoring request of about a mile of new armoring. The EA does not yet include an adequate commitment to investigating the feasibility of nature-based bank stabilization measures. In addition to preventing the armoring of currently unarmored outer berms, nature-based bank stabilization may also enhance habitat values along shorelines that are currently armored. This could be an opportunity to provide mitigation for other locations where longer reaches of armoring may be necessary, and for cumulatively significant impacts.

The lack of a detailed assessment of the feasibility of nature-based bank stabilization measures is also inconsistent with BCDC's San Francisco Bay Plan (Bay Plan) Shoreline Protection Policies 5 and 7. We note these because those Bay Plan policies are consistent with Water Board policies and related work supporting project designs that result in the minimum impact necessary to accomplish their basic project purpose, and incorporate nature-based solutions that can more sustainably support beneficial uses over time.

> ***Shoreline Protection Policy 5*:** All shoreline protection projects should evaluate the use of natural and nature-based features such as marsh vegetation, levees with transitional ecotone habitat, mudflats, beaches, and oyster reefs, and should incorporate these features to the greatest extent practicable. Ecosystem benefits, including habitat and water quality improvement, should be considered in determining the amount of fill necessary for the project purpose. Suitability and sustainability of proposed shoreline protection and restoration strategies at the project site should be determined using the best available science on shoreline adaptation and restoration. Airports may be exempt from incorporating natural and nature-based features that could endanger public safety by attracting potentially hazardous wildlife.
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> ***Shoreline Protection Policy 7*:** The Commission should encourage pilot and demonstration projects to research and demonstrate the benefits of incorporating natural and nature-based techniques in San Francisco Bay.

Comment 3.
Section 2.10.8, Monitoring Program and Supplemental Protection Measures.
The second paragraph of Draft EA Section 2.10.8 describes Cargill's proposed monitoring program intended to avoid fish take by Cargill intakes:

> To assess the potential for longfin smelt and other sensitive fish species to be present in the vicinity of its other intakes, Cargill intends to develop and implement a monitoring program. The purpose of the monitoring program would be to assess physical conditions (such as intake approach velocities, and temperature and salinity in outboard waters) in key locations in the Project area. Monitoring activities would most likely occur over a multi-year timeframe. In addition, monitoring of physical parameters may be supplemented by targeted fish monitoring. Fish monitoring, if needed, would

> occur in locations initially identified as potentially being suitable for sensitive fish species of interest during the time that Bay water intake would occur at these locations. The monitoring program would be reviewed by and would have to be accepted by CDFW, NMFS, USFWS, and the RWQCB.

The EA inappropriately limits consideration of reasonably foreseeable impacts resulting from intakes to special status species. Intakes have the potential to impact fish species beyond those listed as special status and potential impacts to all fish should be considered in the EA. In the *San Francisco Bay Basin Water Quality Control Plan* (Basin Plan), the Bay has the designated beneficial uses of wildlife habitat, estuarine habitat, and fish migration, in addition to the preservation of rare and endangered species. Part II of BCDC's Bay Plan includes policies for Fish, Other Aquatic Organisms and Wildlife. Policies 1 and 2 in this section of the Bay Plan require protection for all native fish.

Section 2.10.8 also states that:

> The results of the monitoring program would be used to prioritize the implementation of other fish protection measures, if needed. These measures could include, among others, installation of additional fish screens, rerouting piping systems to reduce the number of intake locations or modify the locations of intakes, modifying the time period during which intake occurs.

In ongoing discussions with BCDC, National Marine Fisheries Service (NFMS), U.S. Fish and Wildlife Service (USFWS), and California Department of Fish and Wildlife (CDFW) staff, we have been clear that we do not consider a fish monitoring program to be an appropriate alternative to installing fish screens on all intakes of Bay water, because such a program appears unlikely to fully avoid impacts to fish.

Further, the proposed monitoring program is backwards, in that it proposes to use salinity and temperature as surrogates for the presence of fish without collecting site-specific data on the actual presence of fish during periods of differing temperature and salinity. Although the literature on specific fish species may indicate a salinity range and temperature range that have been observed to support that species, local subpopulations may adapt to slightly higher salinities and temperatures.

In addition to screening intakes, Cargill could also develop a fish monitoring program for all of the intakes of Bay water into the solar salt works. This monitoring program should assess the presence of fish species in the vicinity of the intakes during seasons of the year when the intakes could be in use either to take in or discharge water and collect seasonal data on physical parameters (e.g., temperature and salinity) of the Bay water at the intakes. Since the salinity in the Bay and tidal sloughs can vary significantly with variations of annual rainfall, BCDC should consider requiring a data collection period that can consider the likely range of conditions over time, such as a multi-year program on fish presence and physical parameters; these data can be used to determine if

temperature and salinity can be used as a surrogate for monitoring the actual presence of fish near the water intakes.

At this time, Cargill has not submitted a proposed fish monitoring plan to the Water Board for review. Therefore, it is premature to conclude that a fish monitoring plan can be used to reduce the impacts of pumping on fish to a less than significant level. A monitoring plan to be developed at an unspecified future time, and for which there is an insufficiently detailed framework specified in the associated CEQA document, cannot be used to reduce an impact to a less than significant level in that CEQA document.

Comment 4.
Section 2.13.2 Riprap Placement
The first two bullets in this section state:

- **Riprap Placement–1: Nature-Based Solutions.** Wherever feasible, nature-based solutions will be used for shoreline repair and protection on outboard berm slopes.
- **Riprap Placement–2: Riprap Amount.** Where nature-based solutions are not feasible for outboard berm slopes, the minimum amount of riprap necessary will be placed to protect the existing berm, in accordance with the draft specifications for riprap shoreline protection by Anchor QEA (2024. Riprap pieces will be sized in accordance with the dimensions provided in Section 2.10.3.3, and/or as specified in the proposed permit.

While the Draft EA states that nature-based solutions will be used “wherever feasible” it does not include procedures for assessing the feasibility of nature-based shoreline stabilization solutions. The Draft EA should be revised to provide more detail on proposed assessments of the feasibility of nature-based solutions.

Comment 5.
Section 2.13.7 Effectiveness of BMPs
This section includes the following:

> Cargill conducted an assessment to monitor the effectiveness of BMPs implemented as part of the previous permitting period (WRA 2016). Monitoring was conducted from 2010 to 2015. The results of the monitoring indicated that BMPs were effective at minimizing maintenance-related impacts on the environment, and that BMPs were implemented consistently (WRA 2016).

The cited assessment of BMPs did not consider the impacts of pumping on aquatic life, including fish. The BMP assessment must be expanded to include an assessment of the impact on aquatic life forms of pumping Bay water into the solar salt system.

Comment 6.
Section 3.4.1.2 Outboard Sides of Outboard Berms and Adjacent Habitats
This section discusses the habitats along the outboard sides of outboard berms. However, the discussions of intertidal mudflats and intertidal open water do not include a discussion of the emerging science on the significant habitat value of unarmored shorelines. This research is mentioned in Section 3.4.4.2. Please revise Section 3.4.1.2 to reference the discussion of the significant value of unarmored shoreline habitat in Section 3.4.4.2.

Comment 7.
Section 3.4.3 Regulatory Setting
3.4.3.2 Bay Conservation and Development Commission
This section quotes several policies in BCDC's Bay Plan. Part III of the Bay Plan includes policies for Fish, Other Aquatic Organisms and Wildlife.

> **Policy 1.** To assure the benefits of fish, other aquatic organisms and wildlife for future generations, to the greatest extent feasible, the Bay's tidal marshes, tidal flats, and subtidal habitat should be conserved, restored and increased.
>
> **Policy 2.** Native species, including candidate, threatened, and endangered species; species that the California Department of Fish and Wildlife, the National Marine Fisheries Service, and/or the U.S. Fish and Wildlife Service have listed under the California or Federal Endangered Species Act; and any species that provides substantial public benefits, as well as specific habitats that are needed to conserve, increase, or prevent the extinction of these species, should be protected, whether in the Bay or behind dikes. Protection of fish, other aquatic organisms, and wildlife and their habitats may entail placement of fill to enhance the Bay's ecological function in the near-term and to ensure that they persist into the future with sea level rise.

These policies highlight the value of protecting native fish and other aquatic organisms in the Bay and they are consistent with the Water Board's mandate to protect and enhance the Bay's beneficial uses. We encourage BCDC to expand the Draft EA's discussion of impacts to fish to cover, at a minimum, native fish species that are not listed as threatened or endangered. The many unscreened intakes to pumps in the solar salt production system are likely to be causing the take of a significant number of native fish in each year of operation. Fish monitoring at the pump intakes would be useful to assess the impact of pumping on native fish.

Comment 8.
Section 3.4.4.1 Impact BIO-1: Substantial Adverse Effect on Candidate, Sensitive, or Special Status Species.
At this time, the full extent of impacts on special status species at the pumping intakes is unknown, since the presence of fish at the various intakes has not been assessed. Fish surveys should be conducted at all of the intakes to the solar salt system, with the

highest priority placed on fish surveys at the Coyote Intakes on Lower Alameda Creek and the Plummer Creek intakes. Plummer Creek may have suitable habitat for longfin smelt and the proposed increase in diversions from Plummer Creek to support the Mixed Sea Salts (MSS) program (i.e., bittern reduction program) has the potential to negatively impact this species.

As we noted in our comments on Section 2.10.8 (Comment 3), the current proposal for a monitoring program does not include sufficient monitoring of fish populations. At this time, there are insufficient data on actual fish species presence to support a conclusion of Less than Significant with Mitigation for Impact BIO-1.

The discussion of Impact BIO-1 includes a discussion of the impact of new riprap placement on outer berms. This discussion states that over the 10-year lifetime of the permit, 7,800 square feet of new riprap would be placed over 390 linear feet of unarmored outer berms. However, in each recent annual workplan that Cargill has submitted to the Water Board during the current Operation and Maintenance authorization, Cargill has requested approval to armor between 5,000 and 7,000 linear feet of unarmored outer berms. Therefore, the estimated 390 linear feet of new armoring to be placed on unarmored outboard berms over the lifetime of the proposed maintenance permit appears likely to substantially underestimate the proposed future extent of outboard berm hardening.

Comment 9.
Section 3.4.4.1 Mitigation Measure BIO-2: Avoid, Minimize, and Mitigate Impacts Associated with Water Intake.
The proposed avoidance measures for potential impacts to juvenile and adult steelhead and to longfin smelt associated with the pump intakes are based on the proposed fish monitoring plan in Section 2.10.8. However, the monitoring proposal in Section 2.10.8 is insufficiently detailed to allow us to evaluate it. As such, the proposed monitoring plan is insufficient to support a conclusion of a Less than Significant Impact with Mitigation. We suggest above (Comment 3) opportunities to revise the plan to make it more sufficient.

Comment 10.
Section 3.4.4.2, Impact BIO-2: Substantial Adverse Effect on Riparian Habitat or Other Sensitive Natural Community
Text on page 3-86 of this section acknowledges the negative biological impacts of armoring shorelines:

> Armoring of shorelines using riprap has, in recent years, been shown to have potential adverse consequences on habitat and biota, including impairing migration, refugia, and conditions for rearing and spawning (NMFS 2022b). In particular, armoring of shorelines can reduce shallow-water and intertidal habitat, lead to coarsening of substrates, and reduce organic debris. This in turn can alter macroinvertebrate assemblages and reduce prey sources for fish (Sobocinski et al. 2010, as cited in NMFS 2022b). For example, in Puget Sound, Washington, epibenthic invertebrate densities were over ten times

> greater on unarmored shorelines, and species richness was twice that of armored locations (Morley et al. 2012, as cited in NMFS 2022b). Changes in habitat characteristics of shorelines can also reduce habitat suitability for a variety of organisms, including small pelagic fish (Toft et al. 2007, as cited in NMFS 2022b) and may affect microclimate (such as temperature and light).

Text on page 3-88 attempts to minimize the significance of this impact to aquatic habitat.

> Construction of new fish screens and new riprap placement on outboard berms would result in permanent impacts to Estuaries HAPC. Adverse effects would include alteration of substrate and temporary disturbance of the benthic community. These adverse effects would result in a slight reduction (approximately up to approximately 0.5 acre) in the overall area of Estuaries HAPC available for Pacific coast groundfish and Pacific coast salmon. Although adverse effects and permanent loss of Estuaries HAPC may occur, the impacts to Pacific coast groundfish and Pacific coast salmon would be minimal given the amount of this habitat type available to these organisms.

As noted above in Comment 1, we are concerned that the actual amount of impacts to unarmored outboard berms is likely to be significantly greater than the estimate provided in the Draft EA.

The Draft EA attempts to minimize impacts associated with armoring by stating that:

> . . . the impacts to Pacific coast groundfish and Pacific coast salmon would be minimal given the amount of this habitat type available to these organisms

However, the Draft EA does not quantify the actual “amount of this habitat type available.” The Draft EA should be revised to include an estimate of the remaining linear feet of unarmored shoreline in the Bay (especially in the vicinity of salmonid streams and sloughs that support longfin smelt), and to estimate the rate of loss of this habitat. Rising sea levels have triggered erosion along many unarmored shorelines in the Bay. The Water Board is receiving an accelerating number of requests from landowners to stabilize these eroding shorelines with rock armoring. Thus, the significance of unarmored, intertidal habitat loss at the Cargill facility should be assessed in the context of cumulative losses of this habitat type as landowners throughout the Bay attempt to halt shoreline erosion by installing armoring. Without such an analysis, we do not agree with the conclusion that the armoring of unarmored shorelines at the Cargill facilities is a less than significant impact. Rather, it is likely that there is a potentially significant adverse effect for which mitigation should be identified as we describe above (Comment 1).

Comment 11.
Section 3.4.4.4 Impact BIO-4: Interference with Wildlife Movement or Wildlife Corridors, or Use of Native Wildlife Nursery Sites.
This section of the Draft EA asserts that Impact BIO-4 can be mitigated to a Less than Significant Level with Mitigation. The impacts associated with pumping of water are summarized in the following text:

> As discussed in more detail in Impact BIO-2, pumping of water would be confined to occur between June 1 to October 31 to the maximum extent feasible (**EN and SNR-17: Pumping**), and June 15 to October 31 at the Coyote intake to the maximum extent feasible which would avoid and/or minimize pumping during migratory movements of steelhead and longfin smelt and avoid and/or minimize the potential for entrainment of these and other fish species. Any residual impacts of pumping during fish migration periods would be mitigated through implementation of Mitigation Measure BIO-2.

The conclusion that pumping will have a less than significant impact on steelhead is based on typical migratory periods for steelhead and the conclusion that pumping will have a less than significant impact on longfin smelt is based on literature values of longfin smelt tolerance of temperature and salinity ranges. These conclusions are not based on site-specific monitoring of fish species. Finally, the conclusion that pumping will not impact “other fish species” is unsupported by any data on fish presence at the Project sites. The finding of no impact to any other fish species seems likely only if no fish are present at those locations. Thus, the information provided in the Draft EA does not support a conclusion that impacts associated with pumping can be reduced to a less than significant level with mitigation.

Comment 12.
Section 3.15.1 Cumulative Effects.
Section 3.5.1.2 Biological Resources
This section acknowledges several changes from the baseline operations in the prior Operations and Maintenance permit, including:

> • Placement of a small quantity of new riprap (i.e., riprap placed in areas that are currently not armored),

This is expanded on in the following text:

> Placement of up to 7,800 square feet of new riprap (of which only a portion would be in the intertidal zone) would not make cumulatively considerable contributions to adverse effects of riprap placement or loss of sensitive habitat. The total quantity of new riprap placed would be small, and the cumulative projects identified in this analysis also have little or no riprap placement. Consequently, there is little regional impact, and the cumulative effect of the proposed riprap placement would be less than significant.

As noted above (Comments 1 and 10), we are skeptical that the new armoring over the 10-year life of the new Operations and Maintenance Permit is likely to consist of no more than 7,800 square feet of new outboard armoring. We are also concerned that the Draft EA does not assess the significance of new outboard armoring in the context of an increasing number of requests for bank armoring along the Bay shoreline, in response to increased shoreline erosion resulting from sea level rise.

Conclusion

In summary, the Draft EA does not yet adequately resolve concerns associated with the armoring of outboard berm surfaces and the reasonably foreseeable impacts of pumping water from the Bay on all aquatic species in the vicinity of the pump intakes. We urge BCDC to revise the Draft EA to include the expectations that: intakes include fish screens; and the feasibility of nature-based solutions instead of rock armoring for outboard berms be evaluated and implemented; and to require appropriate mitigation for the hard armoring that is allowed, along with estimates for the amount of armoring that reflect the extent likely to be proposed by Cargill over the 10-year project period.

The proposed minimization measures for impacts at pump intakes are based on a fish monitoring program that has not yet been developed. In a CEQA document, a project's potential impacts and proposed mitigation measures should be presented in sufficient detail for readers of the CEQA document to evaluate the likelihood that the proposed remedy will reduce impacts to a less than significant level. CEQA requires that mitigation measures for each significant environmental effect be adequate, timely, and resolved by the lead agency. In an adequate CEQA document, mitigation measures must be feasible and fully enforceable through permit conditions, agreements, or other legally binding instruments (CEQA Guidelines Section 15126.4). Mitigation measures to be identified at some future time are not acceptable, in part because such mitigation measures would be improperly excluded from the process of public and governmental scrutiny which is required under the California Environmental Quality Act. The fish monitoring plan in Section 2.10.8 does not yet meet the standard of an adequate CEQA mitigation measure.

Should the Draft EA be finalized without resolving our concerns with respect to the loss of unarmored intertidal shoreline habitat, limited evaluation and implementation of nature-based solutions, and impacts to fish species at pump intakes, we would evaluate appropriate measures for consideration in a future Water Board authorization for the Operations and Maintenance Program.

If you have any questions, please contact me at (510) 622-5680 or via e-mail to brian.wines@waterboards.ca.gov.

Sincerely,

Brian Wines

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South and East Bay Watershed Section

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