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December 15, 2011

Re: San Francisco Bay and Delta Sand Mining DEIR, SCH # 2007072036

Dear Mr. Huitt:

Please accept these comments, submitted on behalf of San Francisco Baykeeper and Save the Bay, regarding the proposed San Francisco Bay and Delta Sand Mining ("Project") Revised Draft Environmental Impact Report ("DEIR"). We appreciate the fact California State Lands Commission ("CSLC") found it appropriate to revise the 2010 DEIR, addressing in part some of the comments received on the 2010 DEIR. Yet the revised DEIR fails to fully address several significant impacts, instead re-wording earlier analysis and relying on similar assumptions and conclusions. Most of the comments made in regards to the 2010 DEIR were not addressed, causing us to repeat several comments herein. We hope that these concerns are adequately resolved and the Project is designed to minimize environmental impacts, while science determines the appropriate and sustainable level of mineral extraction from the San Francisco Estuary.

Particular concerns surround the fact that significant adverse impacts to biological resources, water quality and mineral resources have been assessed in a manner inconsistent with significance criteria stated within the Project DEIR, as well as accepted standards for environmental impact analysis. It is our sincere hope that the State Lands Commission and all other responsible agencies seize this environmental review process as an opportunity to ensure the best possible protections of geologic, hydrologic and wildlife resources during the ten year duration of this proposed Project.

While research proceeds to determine the full extent of sand mining impacts on sediment transport processes in the San Francisco Bay coastal system we encourage the adoption of the Reduced Project Alternative. Extraction rates under this alternative are consistent with average rates from 2002-2007 - an era of significant construction and development that is unlikely to be repeated during the 10-year duration of this Project. To increase the permitted extraction rate by 51% of this baseline level, as proposed under the preferred alternative, is entirely unjustified based on information contained in the DEIR. Further, the DEIR does not demonstrate this allotment would trigger the requirement for imports

from distant sources, particularly in light of the fact that a number of land-based sources can be found in the Bay Area, as depicted on Figure 4.5-1 of the DEIR.

I. SIGNIFICANCE CRITERIA FOR IMPACTS TO MINERAL RESOURCES ARE LIMITED IN SCOPE AND INAPPROPRIATELY APPLIED

As stated in § 4.2.3, adverse impacts to mineral resources are considered significant under the following conditions:

- The loss of availability of a known mineral resource that would be of value to the region and the residents of the State; or
- The loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other use plan.

In comparison with the 2010 DEIR, the significance criteria for impacts to mineral resources are essentially unchanged and fail to address any environmental impacts associated with unsustainable rates of mineral extraction. The 2010 DEIR interprets these criteria to "mean that depletion of the resource through mining does not constitute a significant impact; an impact could only occur where a project prevented or inhibited access to a known mineral resource" (4.2-8). In a similar vein, the revised DEIR states "… these criteria are understood and interpreted as primarily concerning the potential loss of access to known mineral resources." Under this interpretation, no mining operation could ever pose a significant impact to mineral resources unless operations prevented future access to sand or other mineral resources.

Under this flawed interpretation, the DEIR assumes the only geological impact could be one preventing future access to mineral resources for social or economic benefit. These criteria fail to concede that additional significant impacts to geological and mining resources could occur, including, for example, loss of a critical mineral resources for the maintenance and restoration of beaches and wetlands within and outside San Francisco Bay. It is quite conceivable, for instance, that sand mining in San Francisco Bay has resulted in increased erosion along Ocean Beach, an impact that is entirely ignored, despite prior comments.

Additionally, the DEIR admits that mining in Central Bay lease areas is occurring at an unsustainable rate and that sand mined from the Bay and Delta is no longer considered an entirely renewable resource. As such, the impact analysis fails to satisfy the DEIR's own significance criteria, since unsustainable extraction could result in the loss of available mineral resources of value to the region and residents of the State. If unsustainable rates of mining occur over a number of years it is reasonable to assume that an adequate volume of the resource will be unavailable to meet future demand. The cumulative impacts of proceeding under an already unsustainable rate of extraction represent a significant cumulative impact that could only be reasonably mitigated through severe cuts in permitted mining activities.

II. PROPOSED EXTRACTION RATES ARE UNSUSTAINABLE, RESULTING IN FORESEEABLE SIGNIFICANT IMPACTS

Despite the finding in Section 4.2 of the revised DEIR that extraction of non-renewable sand resources in the Delta and Bay "…can generally be expected to eventually deplete the resource", the DEIR curiously fails to identify this as a significant impact; although Significance Criteria established in Section 4.2.3 includes "The loss of availability of a known mineral resource that would be of value to the region and residents of the State". As stated in the DEIR, the Project could in fact result in the loss of a valuable resource, so it is unclear how this impact fails to satisfy this criterion for significance. In reality, this is a significant impact not only to future mineral extraction activities but to the bathymetry and geomorphology of the Bay and surrounding coastline. In addition, unsustainable extraction violates goals of the San Francisco Bay Sub-Tidal Habitat Goals Project, which includes the promotion of no net loss to San Francisco Bay subtidal and intertidal sand habitats.[1]

Through assessment of Impact MIN-1: *Loss of availability of a known mineral resource*, the DEIR suggests that Central Bay lease areas could suffer from resource depletion since deposition of new sand resources have not been observed over the last ten years. This is consistent with a 2004 USGS report, which concludes that "the total volume of sand in the west-central bay shoals that are in active sand mining leases is unknown… The volume of commercially extractable sand and gravel in these shoals needs to be known to prevent resource depletion. Additionally, it is not known whether the sand shoals in west-central bay are being naturally replenished, are in equilibrium, or are eroding".[2] In the absence of appropriate evidence, extraction volumes should be minimized to permit monitoring and adaptive management over the ten year lease cycle.

Although not included in the Revised DEIR, the 2010 DEIR cited Porterfield's 1980 estimates of sand loads from the Delta to the Bay, which at the time ranged from 1.7 to 3.3 million cubic yards.[3] This estimate is based on out-dated data and fails to reflect the well known phenomenon that sediment loads from the Delta have reduced significantly since publication of the Porterfield report.[4] Under the proposed Project, leaseholders would be permitted to extract up to 2,040,000 cubic yards of sand per year, which exceeds Porterfield's lower bound estimate of total sand loads and is a majority of the upper bound estimate. In reality, proposed extraction levels likely approximate or exceed total annual sand loads from the Delta.

The likely fact that extraction rates approximate or exceed total sand inputs from the Delta is consistent with comments to the Notice of Preparation ("NOP") for this Project received from Patrick Bernard of

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[1] San Francisco Bay Subtidal Habitat Goals Report. 2010. Available at http://sfbaysubtidal.org

[2] Chin, JL, FL Wong and PR Charlton. 2004. *Shifting Shoals and Shattered Rocks – How Man Has Transformed the Floor of West-Central San Francisco Bay*. Circular 1259, U.S. Geological Survey, Menlo Park, CA.

[3] Porterfield, G. 1980. *Sediment Transport of Streams Tributary to San Francisco, San Pablo and Suisun Bays, California, 1909-66*. U.S. Geological Survey, Water Resource Investigations 80-64, 92 p.

[4] Schoellhamer, DH. 2011. *Sudden clearing of estuarine waters upon crossing the threshold from transport- to seupply- regulation of sediment transport as an erodible sediment pool is depleted: San Francisco Bay, 1999*. Estuaries & Coasts 34: 885-899.

the USGS.[5] Dr. Barnard pointed out that over 100 million cubic yards of sediment has been lost from the Mouth of San Francisco Bay in the last 50 years, a time period broadly coincident with major sand mining activities in Central San Francisco Bay. This is also consistent with the CHE report prepared in support of this Project, which found that the volume of material mined from 1997 to 2008 is nearly equivalent to the measured erosion inside and surrounding the lease areas. Authors of the CHE report indicated that only approximately 5 percent of the mined sands are replaced under natural processes, suggesting an entirely unsustainable practice that could result in significant erosion and other geomorphological impacts to areas within and outside San Francisco Bay.[6] Accordingly, the DEIR should develop a project alternative that satisfies the project objectives through sustainable practices.

Since sand mining can and should be conducted in a sustainable manner the DEIR should more appropriately assess whether the project has the potential for resource depletion, thereby threatening the availability of a resource of value to the region and the residents of the State. Consistent with other sand and gravel operations, this project should operate under a principal of no-net-loss. For CSLC to allow mining in excess of sustainable loading rates represents an abdication of their public trust duty.

III. DEIR FAILS TO ADDRESS POTENTIAL IMPACTS TO COASTAL SEDIMENT SUPPLY AND BEACH EROSION

Despite the fact that Dr. Patrick Barnard of USGS brought to the attention of SLC in 2007 that the Project "could result in significant erosion and other geomorphological impacts to areas within and outside San Francisco Bay", the DEIR and accompanying CEH report failed to comprehensively assess geomorphological impacts along the coast. As highlighted by Dr. Barnard, evidence supports the likelihood that sand mining has exacerbated the erosion of Ocean Beach and other research supports the likelihood that the San Francisco Estuary is experiencing net erosion due to several factors.

The recent paper by Dr. Barnard et al (2010) describes impacts to bedform of areas in the vicinity of Central Bay lease areas, linking these changes to sand mining activities:

> *"A reduction in sediment supply from the heavy aggregate mining to the southeast (see Physical setting) would explain the shift to ebb transport domination in this region, as well as more rapid bedform migration and thus shifting of bedform orientations along the southern part of the bedform field. Over this time period, the western half of the focus area lost approximately 175,000 m3 of sediment relative to the eastern half."*[7]

This research is not reviewed in the DEIR, yet conclusions made in Section 4.3 of the DEIR do include statements that the Project may contribute to erosion of the San Francisco Bar, resulting in

[5] Barnard, PL. 2007. Letter to Sarah Mongano, Environmental Scientist, California State Lands Commission, Re: comments on EIR for Hanson Sand Mining in San Francisco Bay.

[6] Coast and Harbor Engineering (CHE). 2009. *Sand Mining Resource Evaluation and Impact Analysis*. Included in the DEIR as appendix G.

[7] Barnard, PL, DM Hanes, DM Rubin, P Dartnell. 2010. *Analyzing bedforms mapped using multibeam sonar to determine regional bedload sediment transport patterns in the San Francisco Bay Coastal System*.

geomorphological impacts. However, analysis of these impacts is illegally deferred to a future date, pending a subsequent application for new sand mining leases beyond the Project period.

IV. INADEQUATE ASSESSMENT OF POTENTIAL GEOMOPHOLOGICAL IMPACTS INDICATES AN UNDER-REPRESENTATION OF IMPACTS TO HYDROLOGY OR WATER QUALITY

Among other criteria, a hydrology- or water quality-related impact is considered significant if the Project "…altered the topography in a manner that would result in substantial erosion or sedimentation" (4.3-24). The fact that the DEIR states that depletion of sand resources "is not considered a significant impact of the Project" (4.2-11) suggests a lack of understanding regarding sediment dynamics and potential impacts to coastal geomorphology in the region. Numerical modeling conducted in support of this project did not adequately assess potential geomorphology impacts to beaches and coastlines north and south of the Golden Gate and concerns still exist over whether on-going sand mining operations are exacerbating known erosion issues.

Continuation of sand mining operations at unsustainable extraction rates could result in significant erosion of beaches and bluffs located north and south of the Golden Gate. Unsustainable sand mining operations have occurred in other areas of California, such as Monterey Bay, where accelerated erosion of beaches and bluffs resulted in the termination of sand mining in the area during the 1980s.[8] Baykeeper shares the concerns of USGS that without a reliable supply of course sediment from the Delta to the mouth of San Francisco Bay coastal geomorphology in the region. As a result, permanent alterations to beaches and coastlines may occur, requiring public investment in coastal revetment and restoration. In addition, reliable sediment loads from the San Francisco Estuary are required in efforts to mitigate the effects of sea level rise over the next century.

V. THE DEIR INACCURATELY FORECASTS FUTURE SAND DEMAND

Mineral demand forecasts appear to be based on data from a report published in 2006 at the onset of the current housing crisis.[9] (4.2-3) Recent state-wide housing data indicates that demand for construction services and material is down significantly; housing starts in September 2010 were down 70% compared with 2006 data from the same month.[10] Since economic forecasts over the 10-year lease period indicate prolonged strain on the construction sector it would appear that forecasts for sand over a similar period may be overestimated. Accordingly, assessment of potential impacts to air quality and mineral resources appears to be based on outdated information.

VI. THE DEIR SHOULD EVALUATE PROJECT ALTERNATIVES THAT DEMONSTRATE MINIMUM EXTRACTION RATES TO ACHIEVE ECONOMIC VIABILITY

Project Applicants have identified the objective for the San Francisco Bay and Delta Sand Mining Project to "…continue sand mining at an economically viable level in San Francisco Bay for the next 10 years".

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[8] Griggs, G, K Patsch and L Savoy. 2005. *Living with the Changing California Coast*. University of California Press, Berkeley.
[9] Kohler, S. 2006. *Aggregate Availability in California*. Department of Conservation, California Geological Survey.
[10] Housing start data available through the California Building Industry Association at www.cbia.org

(ES-2) However, the DEIR fails to provide any evidence to determine economic viability or unacceptability. The DEIR evaluates a Reduced Project alternative, which is equivalent to recorded extraction volumes from 2002 to 2007, representing a 37% reduction in allowable extraction levels under the preferred alternative. This period of record coincides with the housing boom and an era of construction material demand that is unlikely to be repeated during the proposed Project. Regardless, Project proponents are likely to view this alternative as too restrictive, yet the DEIR provides no information with which to assess whether this or other project alternatives could meet the only stated project objective. If the Reduced Project alternative is deemed not viable, reasons for this determination must be adequately described and justified.

VII. FORESEEABLE IMPACTS ARISING FROM INEVITABLE SAND MINING OPERATIONS BEYOND THE 10-YEAR LEASE TERM SHOULD BE EVALUATED

More information should be provided in the DEIR the Applicant's potential option to extend the proposed project for an additional 10 years beyond the proposed 10 year lease period. (2-1) The DEIR states that further CEQA review will be required at that time, yet further CEQA review will only occur in the event the option to extend the lease is discretionary, which is not stated in the DEIR. Furthermore, by the very terms of the project proposal, the project intends to continue for another 20 years. Therefore, the DEIR must evaluate the impacts of this project term.

VIII. FORESEEABLE IMPACTS FROM ANCILLARY SAND AND GRAVEL FACILITIES MUST BE CONSIDERED IN THE DEIR

The DEIR inconsistently describes on-shore sand and gravel facilities as part of the Project, and not part of the Project. (2-17) The DEIR admits that activities at sand and gravel facilities occur as a totally foreseeable indirect result of the Project mining. However, the DEIR chooses to omit evaluation of impacts from on-shore facilities, noting that those facilities are required to obtain separate approvals. This approach contradicts CEQA's well established principle that a project is the whole of an action that has a potential to result in a direct or reasonably foreseeable indirect physical impact; a project is not each separate governmental approval required for each foreseeable impact.

To effort to help protect water quality in the Bay, San Francisco Baykeeper has resorted to litigation against permit holders in violation of storm water permits, including sand and gravel storage facilities. Such suits have highlighted the reasonably foreseeable indirect physical impacts associated with sand mining in San Francisco Bay and Delta, despite the fact that such facilities have obtained the required Clean Water Act permits. Baykeeper has brought several lawsuits against on-shore facilities that store sand, including the Tidewater Sand & Gravel Co. (now Hanson Oakland Marine), the Granite Rock Company, and Cemex, Inc.

At the time of Baykeeper's suit against Tidewater Company, sand and gravel stored at facilities immediately adjacent to the Bay was acting as a source of storm water pollution. Permit violations for high suspended sediment concentrations were a direct result of sediment from the sand piles directly contaminating storm water flowing from the facility. Similarly, Baykeeper filed suit against the Granite Rock Company due to storm water violations associated with on-shore storage of sand and other construction materials. Granite Rock operates several concrete and asphalt facilities and maintains

large piles of crushed concrete, sand, and rubble at its facilities. In addition to being a source of wind-borne dust, these uncovered piles were also causing storm water pollution. Granite Rock's own storm water sampling results reported exceedances of EPA Benchmarks for total suspended solids, pH, and iron. Prior to Baykeeper's lawsuit, every storm water sample collected at the site exceeded the benchmark for total suspended solids.

Baykeeper brought a third similar storm water pollution-related lawsuit against Cemex, a corporation specializing in concrete and building supplies. Cemex owns and operates nine concrete ready mix supply facilities in the Bay Area. Raw materials, including sand used in the manufacturing of various ready mix products, are stored and transported at the facilities. Baykeeper's site investigation revealed extensive tracking of dust, sediment, and debris from Cemex's facilities. In addition to air-borne contamination, Cemex's storm water was found to be in violation of EPA Benchmarks for total suspended solids, pH, and iron.

These three facilities are only a small fraction of the many facilities in the Bay Area that store mined sand. On-shore storage of mined sand can cause significant storm water pollution, which can cumulatively have a significant impact on water quality in the Bay. To fully understand the water quality impacts of sand mining, the effects of on-shore storage of the mined material must be considered in the DEIR for public review and comment.

IX. THE ASSESSMENT OF IMPACTS TO BIOLOGICAL RESOURCES IS INCONSISTENT WITH STATED SIGNIFICANCE CRITERIA

Conclusions contained in §4.1.4 of the DEIR fail to adhere to stated thresholds of significance, which claim that a biological resource impact is considered significant if (4.1-40):

- There is a potential for any part of the population of a special status species (such as State or federally endangered species) to be directly affected or indirectly harmed through the disturbance or loss of its habitat;
- A net loss occurs in the functional habitat value of a sensitive biological habitat, or any area of special biological significance;
- There is a potential for the movement or migration of fish to be impeded; or,
- A substantial loss occurs in the population or habitat of any native fish or vegetation or in there is an overall loss of biological diversity, with substantial defined as any change that could be detected over natural variability.

The DEIR states that "noise levels generated by sand mining at the location of the hydraulic dredge are within the sound range that can elicit behavioral responses… ". (4.1-41) The DEIR concludes that these impacts are less than significant, but fails to explain how noise impacts that change the behavior of fish and swimming patterns could not (1) directly affect or indirectly disturb the fish habitat, (2) reduce the value of the habitat by resulting in avoidance, or (3) change the movement or migration of sensitive fish species. In addition, the DEIR fails to consider how increasing noise through increased sand extraction

could exacerbate these effects. The DEIR offers no mitigation measures for this impact, which therefore must be considered to be significant and unmitigated.

Similarly, the DEIR describes in detail numerous impacts to foraging habitat that will likely occur as a result of sand mining but, inexplicably, the DEIR concludes that this impact will be less than significant because "these changes do not appear to last more than a few years…" (4.1-43) However, nothing in the significance criteria suggests that an impact may be less than significant if it lasts "only" a few years. This conclusion is at odds with significant threats faced by endangered, threatened, and sensitive species whose populations could pass a tipping point over the course of a few years, nor does this evaluation account for the increased production proposed by the project that would increase the scope and duration of this multi-year impact above baseline levels. The DEIR offers no mitigation measures for this impact, which therefore must be considered to be significant and unmitigated.

X. THE PROJECT'S IMPACTS TO DELTA SMELT AND OTHER SPECIAL STATUS FISH SHOULD BE CONSIDERED SIGNIFICANT AND UNAVOIDABLE

Based on entrainment estimates the DEIR admits the Project would entrain an estimated 0.3 percent of the regional abundance index for delta smelt within the Bay-Delta region (4.1.49), which clearly qualifies as a significant impact pursuant to the DEIR's stated thresholds significance. However, the DEIR concludes this impact will be less than significant, despite the absence of mitigation measures intended to avoid direct take of listed species. Mitigation of this impact is deferred by delaying consultation with California Department of Fish and Game ("CDFG") to determine whether an Incidental Take Permit ("ITP") under Section 2081 of CDFG code is required. (4.1-51) Nothing in the DEIR's evaluation shows that this impact will be less than any of the significance criteria provided by the DEIR.

Similarly, the DEIR admits the project will cause mortality to other special status fish and implements mitigation measures to reduce the impact, yet fails to provide any comparison of the reduced impacts to the DEIR's standards of significance. Merely implementing some mitigation measures does not necessarily reduce an impact to a less than significant level. Awaiting further review and advice from state and federal wildlife agencies impermissibly defers the evaluation and mitigation of these impacts that must occur in the DEIR.

XI. IMPACTS TO LONGFIN SMELT ARE INADEQUATELY ASSESSED AND FORMULATION OF MITIGATION MEASURES IS ILLEGALLY DEFERRED

Based on projected impacts to longfin smelt and other special status species, CSLC should deny the proposed Project and suspend any ongoing activities that cannot be mitigated to less-than-significant levels. The DEIR notes that formal CDFG consultation has not been initiated over likely take of longfin smelt during project operations and that formulation of mitigation measures is deferred pending further unknown recommendations from CDFG after closure of the public review and comment period on the EIR. Because these mitigation measures are wholly uncertain and would not take effect for a year or more after the project begins, the project should be denied and not permitted to operate in any way that would result in illegal take of longfin smelt.

Mitigation measures intended to reduce impacts to biological resources fail to meet minimum standards for environmental review. In Gentry v. City of Murrieta, the Court of Appeal stated that mitigation measures may be formalized after project approval only if, the lead agency has circulated an environmental review document that (1) identifies and discloses with particularity the project's potentially significant impacts, (2) establishes measurable performance standards that will clearly reduce all of the identified impacts to less-than-significant levels, and (3) describes a range of particularized mitigation measures that, when taken in combination, are able to meet the specified performance standards. (Gentry v. City of Murrieta (1995) 36 Cal.App.4th 1359, 1394-1395; see also CEQA Guidelines § 15126.4.) However, the DEIR simply recommends that Applicants consult with CDFG to determine whether an ITP is required after the CEQA review process is over and public review and comment period closed. (4.1-51) This approach fails to meet the standards established by Gentry for deferral of mitigation measures for several reasons. First, the mitigation measure fails to include any "measurable performance standards"; second, the DEIR fails to describe any "particularized mitigation measures"; and third, the DEIR offers no evidence to support its conclusion that MM BIO-9d would serve to reduce impacts to sensitive species to less-than-significant levels.

XII. REASONABLY FORESEEABLE IMPACTS ASSOCIATED WITH INDIRECT EMISSIONS OF GREENHOUSE GASES AND MERCURY SHOULD BE ADEQUATELY ASSESSED

The DEIR must evaluate the significant environmental impacts that will occur as a result of concrete manufacturing using the mined sand materials. Presumably, the sole, or most significant, outlet for sand mined from this project will be concrete production. This DEIR fails to mention this as a reasonably foreseeable indirect impact of the Project. However, the concrete production that will be fueled by this mining project will have significant and unmitigated impacts to the environment, all of which must be analyzed in a revised DEIR. In particular, the DEIR must evaluate and analyze mitigation measure for the project's indirect effects of increasing emissions of greenhouse gasses, and mercury.

Concrete production is among the most greenhouse gas intensive activities occurring today, responsible for up to 5% of global greenhouse gas emissions annually.[11] The DEIR must evaluate the amount of greenhouse gas production that will occur as a result of the cement production using the sand from this mining project (including the available amount of sand proposed to be increased by this project). The DEIR should evaluate mitigation measures such as funding greenhouse gas controls or sequestration for cement manufacturers, or sponsoring greenhouse gas offset projects at a ratio of at least 3:1.

In addition, cement production also results in a substantial amount of mercury emissions, accounting for the third largest source of mercury emissions in the United States. In addition, the San Francisco Bay is impaired for mercury, and cement production in the Bay Area contributes additional mercury loads to this already impaired water body. The DEIR fails to analyze this significant indirect impact or proposed recommended mitigation measures.

[11] The Cement Sustainability Initiative: Progress report, World Business Council for Sustainable Development, published 2002-06-01.

XIII. CONCLUSION

For the foregoing reasons the proposed Project Alternative should be rejected in favor of a less damaging alternative. The DEIR should be revised and recirculated to provide the public and governmental decision-makers with an opportunity to review each of the project's significant environmental impacts, and the additional mitigation measures and project alternatives that must be considered to reduce or avoid these impacts.

Thank you for your consideration of these comments.

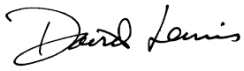
Sincerely,

Ian Wren

Staff Scientist, San Francisco Baykeeper

Jason Flanders

Staff Attorney, San Francisco Baykeeper



David Lewis

Executive Director, Save the Bay