



US Army Corps  
of Engineers®  
San Francisco District

SAN FRANCISCO DISTRICT

Regulatory Division  
1455 Market Street, 16<sup>th</sup> Floor  
San Francisco, CA 94103-1398

# PUBLIC NOTICE

PROJECT: Hanson Middle Ground Sand Mining Operations

PUBLIC NOTICE NUMBER: 2013-00131S

PUBLIC NOTICE DATE: April 22, 2013

COMMENTS DUE DATE: June 7, 2013

PERMIT MANAGER: Sahrye Cohen

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1. **INTRODUCTION:** This Public Notice is reissued with the webpage address for the Public Notice corrected. An electronic version of this public notice may be viewed under the *Public Notices* tab on the USACE website: <http://www.spn.usace.army.mil/Missions/Regulatory>. The comment due date is hereby revised to June 7, 2013.

Hanson Aggregates (POC: Mr. Michael Roth, 925-244-6561), 12667 Alcosta Blvd Suite 4, San Ramon, California, through agent, Boudreau Associates LLC, (POC: Ms. Christine Boudreau (415-296-1155), 327 Jersey St, San Francisco, California, has applied to the U.S. Army Corps of Engineers (USACE), San Francisco District, for a Department of the Army Permit to conduct sand mining operations of up to 50,000 cubic yards annually over the next 10 years within a 367-acre area of submerged lands known as Middle Ground Island Sand Shoals in Suisun Bay leased from the Grossi Family. This Department of the Army permit application is being processed pursuant to the provisions of Section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 *et seq.*). Sand Mining activities in the area were previously authorized under USACE permit 1999-256530.

## 2. PROPOSED PROJECT:

**Project Site Location:** The project site is located in open water in western Suisun Bay at 38°03'47" N and -121°58'57" W. The Middle Ground shoal is located in the middle of the waterway south of Snag Island, north of the City of Bay Point, Between Honker Bay and Suisun Bay.

**Project Site Description:** The project site is a 367 acre sand shoal with open water ranging in water depths from 15 to 45 feet. Suisun Bay is located between San Francisco Bay and the confluence of the Sacramento and

San Joaquin rivers in the San Francisco Bay-Delta Estuary. Suisun Bay is highly bathymetrically variable and the salinity and turbidity of this area has been greatly impacted over historic time due to freshwater demand, hydraulic mining and ship channel deepening.

**Project Description:** Two marine aggregate companies, Hanson Marine Operations (Hanson), and Jerico Products, Inc. (Jerico) currently harvest sand commercially from the San Francisco Bay and the western Delta (the Bay-Delta estuary). The Sand Miners harvest sand from specified areas of San Francisco Bay that are leased from the California State Lands Commission (SLC). Jerico has also requested authorization for sand mining at Middle Ground Shoal, see the public notice for USACE permit 2013-00129 for more information.

Marine sand mining obtains a marine aggregate that is primarily used for construction activities within the greater San Francisco Bay area, either as fill and base material or as an ingredient in readymix concrete and hot mix asphalt. Sand obtained from the San Francisco estuary is used, for example, in the construction and maintenance of highway and freeway systems, commercial and public buildings, and residential construction.

Hanson uses two methods of hydraulic sand mining: stationary potholing, moving potholing. Stationary potholing which is the most common method of mining involves an initial search for an appropriate sand source, followed by "stationary" mining of sand at a site, by burying the drag head into the substrate and controlling the drag head from moving by either anchoring or engine thrust. Moving potholing may involve mining more than one specific location during a mining event, and may involve some movement within a general site. Moving

potholing is similar to stationary potholing, in that it involves mining in a “stationary” position when an appropriate sand source is found, but also involves mining while moving in search of another appropriate stationary source. This method is only used when the substrate is particularly challenging to remove.

Hanson currently utilizes one tugboat/barge pair for sand mining, the tug San Joaquin River with the trailing suction hopper barge the Sand Merchant (aka TSG230) , which is equipped with suction mining equipment. The Sand Merchant is 230’ long by 55’ wide, with an approximate cargo capacity of 2,400 cubic yards. The Sand Merchant can either offload using a conveyor offloading system (dry offload), or hydraulically offload by re-slurrying the cargo and pumping the sand ashore (wet offload). The Sand Merchant is limited by draft and other practical operating constraints to mining in water with a minimum depth of -20 feet (ft) MLLW, and can mine in water up to about -80 ft MLLW.

The suction mining equipment used in sand mining on the Sand Merchant consists of a trailing suction pipe, the “drag arm” assembly. The drag arm is comprised of a 24-inch diameter pipe, 120 ft long, hinged in the middle (the knuckle) and mounted through the forward starboard side of the barge using a ball and socket joint. A “drag head” is attached to the end of the suction pipe. The drag head’s mining face (the open area where the sand is sucked into) measuring 36x36 inches is equipped with a 6-inch “grizzly”, a square grid to prevent material 6 inches or larger from being picked up. This is mounted to the drag head’s “visor”. The visor is hinged to the body of the drag head, so the mining face is kept flat to the substrate when mining. Sand is drawn into the drag arm assembly using a 22-inch centrifugal pump, mounted in the engine room of the barge, capable of pumping 15,000 gallons per minute (gpm).

During a mining event, the tug positions the barge above the sand shoal. Once in position, the drag arm assembly is lowered, using two cable winches, until the drag head is positioned just above the substrate, then the centrifugal pump is primed and the drag head is lowered into the substrate, and mining begins. The drag head is buried about 6-18 inches into the sand substrate. Water and sand is drawn into the drag head by the suction of the centrifugal pump from beneath and around the sides of the drag head. A maximum vacuum is regulated at the drag head by a vacuum relief vent (vent pipe), an 8 inch diameter water intake riser pipe on the top of the drag head. Water drawn into the drag head through the substrate creates a sand-water slurry (slurry) that allows

the sand to be suspended and sucked up into the hopper barge. If the slurry becomes too dense resulting in increasing vacuum, water will be drawn in through the vent pipe to thin the sand slurry. As sand is withdrawn from the substrate area a “pothole” is created and the entire drag head assembly is continually lowered and pushed into the substrate to maintain its position within the sand substrate. During mining the tug maintains the barge’s position and allows the barge to “rest” on the drag head assembly, effectively forcing the drag head into the substrate using the barge’s weight. Mining is always done in the direction of the current, with the tug and barge “pushing” against the upstream current. This allows the tug to use forward thrust against the current to maintain position and allows the barge to “rest back” on the drag head assembly with the current pushing the drag head into the substrate. The proportion of sand to water in the slurry may vary, depending on the quality and consolidation of sand being mined. Hanson’s mining operations typically experience slurry proportions of approximately 17% sand and 83% water for fill sand and 12 % sand and 88% water for coarse sand.

The sand-water slurry is loaded into the barge from the drag arm into the loading chute, which runs lengthwise along the centerline of the cargo hopper. The loading chute is equipped with ten gates distributed evenly along the bottom of the chute. The gate openings have a screen mesh over the openings to exclude oversized material. The mesh size over the opening varies but is typically between 1/2 inch to 5/16 inch square opening (mesh). The oversize material flows to the end of the chute and is discharged overboard through a pipe extending through the bottom of the barge. The gates in the chute articulate fore and aft and side to side to distribute the sand evenly in the hopper, keeping the barge level. During loading the water from the sand water slurry is displaced by the accumulating sand in the cargo hopper. The water is discharged through overflow pipes on either side at the rear of the cargo hopper that extend down below the waterline on the outside of the barge. The overflow water can contain fine grained sediments and other material, which do not settle out in the cargo hopper and are returned to the receiving waters. The bottom of the cargo hopper is also fitted with a hopper dewatering system. A pipe along the centerline, at the bottom of the hopper, has five fine mesh screened openings where water that has filtered through the sand is suck in and pumped overboard.

The overflow and overflowed discharge may contain aggregates, fine sediments, aeration bubbles, and plankton, and due to these discharges a visible plume may

occur around the barge. Based on the equipment and methods used for sand mining within the estuary, commercial sand characteristically ranges in size from approximately 1 mm to 12 mm (1/2 inch), with larger and smaller particles discharged overboard. The volume of sediment discharged overboard during a typical mining event within the estuary has not been quantified.

The Sand Merchant has been modified to utilize subsurface discharge pipes to release the overflow below the water line. These modifications are intended to reduce any developing discharge plumes by increasing the rate of turbulent mixing, dispersion, and decrease the duration of the overflow plume. Once mining is completed, the barge is taken to a site for offloading.

The duration and timing of individual mining events reflect differences in equipment, equipment and dredging efficiencies, weather, availability of sand at the selected mining site, and other factors. Sand mining activity may occur at any time of day. The timing is influenced by tidal schedules, which dictate when loaded barges can navigate to the various offload locations. Sand mining events generally last from 3 to 5.5 hours. Duration of mining events was examined in the 2004 “Assessment and Evaluation of the Effects of Sand Mining on Aquatic Habitat and Fishery Populations of Central San Francisco Bay and the Sacramento-San Joaquin Estuary”, Hanson et al. For Hanson mining operations in the Middle Ground Shoal and Suisun Bay areas, studied during the period March 2002 through February 2003, the monthly mean event duration ranged from 2-3.1 hours, and no event lasted longer than 7.5 hours. Monthly mean yield per event ranged from 1,490 cy to 1,768 cy (Hanson et al. 2004).

The amount and seasonal timing of mining volumes are largely dictated by demand for sand, the weather (seasonality), and regulatory and resource agency permitting conditions. Mining volumes may also be limited by the maximum cubic yardage allowed under the respective leases and permits.

**Project Purpose and Need:** The basic project purpose comprises the fundamental, essential, or irreducible purpose of the project, and is used by USACE to determine whether the project is water dependent. The basic project purpose is to obtain aggregate. The overall project purpose is to mine sand in Suisun Bay for commercial resale in the San Francisco Bay Area.

**Project Impacts:** The applicant has submitted an application for sand mining 50,000 cubic yards of sand annually between 2013 and 2023 from a 367-acre area known as the Middle Ground Sand Shoals. This would result in a maximum of 500,000 cubic yards for the period between 2013 and 2023.

**Proposed Mitigation:** The applicant has proposed avoidance and minimization measures for impacts to jurisdictional waters of the U.S. These include: turbidity reduction during mining, limited annual mining volumes; water depth limitation to avoid sensitive water column habitats, limited mining areas, monitoring of mining events and locations, hazardous material control and spill prevention and response, sand replenishment and monitoring, limited pumping depths and installation of a positive barrier fish screen on the mining suction head. There is no compensatory mitigation proposed for this project.

Specific avoidance and minimization measures are listed below:

- When priming the pump or clearing the pipe, the end of the pipe shall be held at a height in the water column no greater than 3 ft off the bottom.
- Water depth limitation to avoid sensitive habitat for delta smelt and other pelagic species.
- Limited mining areas: sand mining is restricted to specific designated lease areas. Mining is not permitted outside of the lease areas. The lease areas and specific locations within the lease areas where sand deposits occur and mining activity is most frequent are characterized by relatively high tidal current velocities, are areas of sediment (sand) accumulations that have a low percentage of fine sediments, and are dynamic areas with frequent natural disturbance, as evidenced by the presence of sand wave formations. These limitations reduce and avoid the risk of mining in sensitive subtidal habitat, located outside the designated lease areas.
- Monitoring actual mining locations: current sand mining permits require detailed tracking and accounting of the specific locations of each mining event. Results of the tracking are submitted to BCDC and CSLC quarterly in accordance with permit conditions. Tracking mining locations serves to ensure that mining occurs only within designated lease areas and that mining avoids sensitive subtidal habitat located outside of a lease area.

- The applicants shall keep the end of the pipe and drag head as close to the bottom as possible, and no more than three feet from the bottom, whenever feasible when priming the pump or clearing the pipe.
- Fish screen mounted on mining equipment that would effectively exclude juvenile fish and adult fish from entrainment during sand mining.

**Project Alternatives:** USACE staff has requested that the applicant submit an alternatives analysis for this project.

### 3. STATE AND LOCAL APPROVALS:

**Water Quality Certification:** State water quality certification or a waiver is a prerequisite for the issuance of a Department of the Army Permit to conduct any activity which may result in a fill or pollutant discharge into waters of the United States, pursuant to Section 401 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1341 *et seq.*). Current sand mining activities are approved under Regional Board Order No. 00-048, amending Order No. 95-177 on June 21, 2000. The applicant has recently submitted an application to the California Regional Water Quality Control Board (RWQCB) to obtain water quality certification for the project.

Water quality issues should be directed to the Executive Officer, California Regional Water Quality Control Board, San Francisco Bay Region, 1515 Clay Street, Suite 1400, Oakland, California 94612, by the close of the comment period.

**Coastal Zone Management:** Section 307(c) of the Coastal Zone Management Act of 1972, as amended (16 U.S.C. § 1456(c) *et seq.*), requires a non-Federal applicant seeking a federal license or permit to conduct any activity occurring in or affecting the coastal zone to obtain a Consistency Certification that indicates the activity conforms with the State's coastal zone management program. Generally, no federal license or permit will be granted until the appropriate State agency has issued a Consistency Certification or has waived its right to do so. Since the project occurs in the coastal zone or may affect coastal zone resources, the applicant has applied for a major permit from the San Francisco Bay Conservation and Development Commission to comply with this requirement.

Coastal zone management issues should be directed to the Executive Director, San Francisco Bay Conservation

and Development Commission, 50 California Street, Suite 2600, San Francisco, California 94111, by the close of the comment period.

**Other Local Approvals:** The applicant has applied for the following additional governmental authorizations for the project: California Department of Fish and Wildlife Incidental Take Statement, California State Lands Commission CEQA process.

### 4. COMPLIANCE WITH VARIOUS FEDERAL LAWS:

**National Environmental Policy Act (NEPA):** Upon review of the Department of the Army permit application and other supporting documentation, USACE has made a *preliminary* determination that the project neither qualifies for a Categorical Exclusion nor requires the preparation of an Environmental Impact Statement for the purposes of NEPA. At the conclusion of the public comment period, USACE will assess the environmental impacts of the project in accordance with the requirements of the National Environmental Policy Act of 1969 (42 U.S.C. §§ 4321-4347), the Council on Environmental Quality's Regulations at 40 C.F.R. Parts 1500-1508, and USACE Regulations at 33 C.F.R. Part 325. The final NEPA analysis will normally address the direct, indirect, and cumulative impacts that result from regulated activities within the jurisdiction of USACE and other non-regulated activities USACE determines to be within its purview of Federal control and responsibility to justify an expanded scope of analysis for NEPA purposes. The final NEPA analysis will be incorporated in the decision documentation that provides the rationale for issuing or denying a Department of the Army Permit for the project. The final NEPA analysis and supporting documentation will be on file with the San Francisco District, Regulatory Division.

**Endangered Species Act (ESA):** Section 7(a)(2) of the ESA of 1973, as amended (16 U.S.C. § 1531 *et seq.*), requires Federal agencies to consult with either the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) to ensure actions authorized, funded, or undertaken by the agency are not likely to jeopardize the continued existence of any Federally-listed species or result in the adverse modification of designated critical habitat. As the Federal lead agency for this project, USACE has conducted a review of the California Natural Diversity Data Base, digital maps prepared by USFWS and NMFS depicting critical habitat, and other information provided by the

applicant, to determine the presence or absence of such species and critical habitat in the project area. Based on this review, USACE has made a preliminary determination that the following Federally-listed species and designated critical habitat are present at the project location or in its vicinity, and may be affected by project implementation. The project area in Middle Ground shoal is critical habitat for the federally-threatened delta smelt (*Hypomesus transpacificus*). The delta smelt is a small pelagic species that is endemic to the SF Bay-Delta estuary. The project could potentially impact the delta smelt through direct entrainment of individuals, and indirectly through impacts to foraging and spawning habitat. Other federally-listed species that may be affected by the project are: Sacramento River winter-run Chinook salmon ESU (*Oncorhynchus tshawytscha*), Central Valley spring-run Chinook salmon ESU (*Oncorhynchus tshawytscha*), Central California Coast steelhead DPS (*Oncorhynchus mykiss*), Central Valley steelhead DPS (*Oncorhynchus mykiss*), and Green sturgeon DPS (*Acipenser medirostris*). The project could potentially impact these species through direct entrainment of individuals, and indirectly through impacts to foraging habitat. To address project related impacts to these species designated critical habitat, USACE has initiated formal consultation with USFWS and NMFS, pursuant to Section 7(a) of the Act. Any required consultation must be concluded prior to the issuance of a Department of the Army Permit for the project

**Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA):** Section 305(b)(2) of the MSFCMA of 1966, as amended (16 U.S.C. § 1801 *et seq.*), requires Federal agencies to consult with the NMFS on all proposed actions authorized, funded, or undertaken by the agency that may adversely affect essential fish habitat (EFH). EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. EFH is designated only for those species managed under a Federal Fisheries Management Plan (FMP), such as the *Pacific Groundfish FMP*, the *Coastal Pelagics FMP*, and the *Pacific Coast Salmon FMP*. As the Federal lead agency for this project, USACE has conducted a review of digital maps prepared by NMFS depicting EFH to determine the presence or absence of EFH in the project area. Based on this review, USACE has made a *preliminary* determination that EFH for Chinook salmon (*Oncorhynchus tshawytscha*) is present at the project location or in its vicinity, and that the critical elements of EFH may be adversely affected by project implementation. To address project related impacts to EFH, USACE will initiate consultation with NMFS,

pursuant to Section 305(5)(b)(2) of the Act. Any required consultation must be concluded prior to the issuance of a Department of the Army Permit for the project.

**Marine Protection, Research, and Sanctuaries Act (MPRSA):** Section 302 of the MPRS of 1972, as amended (16 U.S.C. § 1432 *et seq.*), authorizes the Secretary of Commerce, in part, to designate areas of ocean waters, such as the Cordell Bank, Gulf of the Farallones, and Monterey Bay, as National Marine Sanctuaries for the purpose of preserving or restoring such areas for their conservation, recreational, ecological, or aesthetic values. After such designation, activities in sanctuary waters authorized under other authorities are valid only if the Secretary of Commerce certifies that the activities are consistent with Title III of the Act. No Department of the Army Permit will be issued until the applicant obtains the required certification or permit. The project does not occur in sanctuary waters, and a *preliminary* review by USACE indicates the project would not likely affect sanctuary resources. This presumption of effect, however, remains subject to a final determination by the Secretary of Commerce, or his designee.

**National Historic Preservation Act (NHPA):** Section 106 of the NHPA of 1966, as amended (16 U.S.C. § 470 *et seq.*), requires Federal agencies to consult with the appropriate State Historic Preservation Officer to take into account the effects of their undertakings on historic properties listed in or eligible for listing in the *National Register of Historic Places*. Section 106 of the Act further requires Federal agencies to consult with the appropriate Tribal Historic Preservation Officer or any Indian tribe to take into account the effects of their undertakings on historic properties, including traditional cultural properties, trust resources, and sacred sites, to which Indian tribes attach historic, religious, and cultural significance. As the Federal lead agency for this undertaking, USACE has conducted a review of latest published version of the *National Register of Historic Places*, survey information on file with various city and county municipalities, and other information provided by the applicant, to determine the presence or absence of historic and archaeological resources within the permit area. Based on this review, USACE has made a *preliminary* determination that historic or archaeological resources are not likely to be present in the permit area, and that the project either has no potential to cause effects to these resources or has no effect to these resources. USACE will render a final determination on the need for consultation at the close of the comment period, taking into account any comments provided by the State Historic Preservation Officer, the Tribal Historic Preservation

Officer, the Advisory Council on Historic Preservation, and Native American Nations or other tribal governments. If archaeological resources are discovered during project implementation, those operations affecting such resources will be temporarily suspended until USACE concludes Section 106 consultation with the State Historic Preservation Officer or the Tribal Historic Preservation Officer to take into account any project related impacts to those resources.

**5. PUBLIC INTEREST EVALUTION:** The decision on whether to issue a Department of the Army Permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the project and its intended use on the public interest. Evaluation of the probable impacts requires a careful weighing of the public interest factors relevant in each particular case. The benefits that may accrue from the project must be balanced against any reasonably foreseeable detriments of project implementation. The decision on permit issuance will, therefore, reflect the national concern for both protection and utilization of important resources. Public interest factors which may be relevant to the decision process include conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

**6. CONSIDERATION OF COMMENTS:** USACE is soliciting comments from the public; Federal, State and local agencies and officials; Native American Nations or other tribal governments; and other interested parties in order to consider and evaluate the impacts of the project. All comments received by USACE will be considered in the decision on whether to issue, modify, condition, or deny a Department of the Army Permit for the project. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, and other environmental or public interest factors addressed in a final environmental assessment or environmental impact statement. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the project.

**7. SUBMITTING COMMENTS:** During the specified comment period, interested parties may submit written comments to Sahrye Cohen, San Francisco District, Regulatory Division, 1455 Market Street, 16<sup>th</sup> Floor, San

Francisco, California 94103-1398; comment letters should cite the project name, applicant name, and public notice number to facilitate review by the Regulatory Permit Manager. Comments may include a request for a public hearing on the project prior to a determination on the Department of the Army permit application; such requests shall state, with particularity, the reasons for holding a public hearing. All substantive comments will be forwarded to the applicant for resolution or rebuttal. Additional project information or details on any subsequent project modifications of a minor nature may be obtained from the applicant and/or agent, or by contacting the Regulatory Permit Manager by telephone or e-mail cited in the public notice letterhead. An electronic version of this public notice may be viewed under the *Public Notices* tab on the USACE website: <http://www.spn.usace.army.mil/Missions/Regulatory>.

# GENERAL SITE MAP

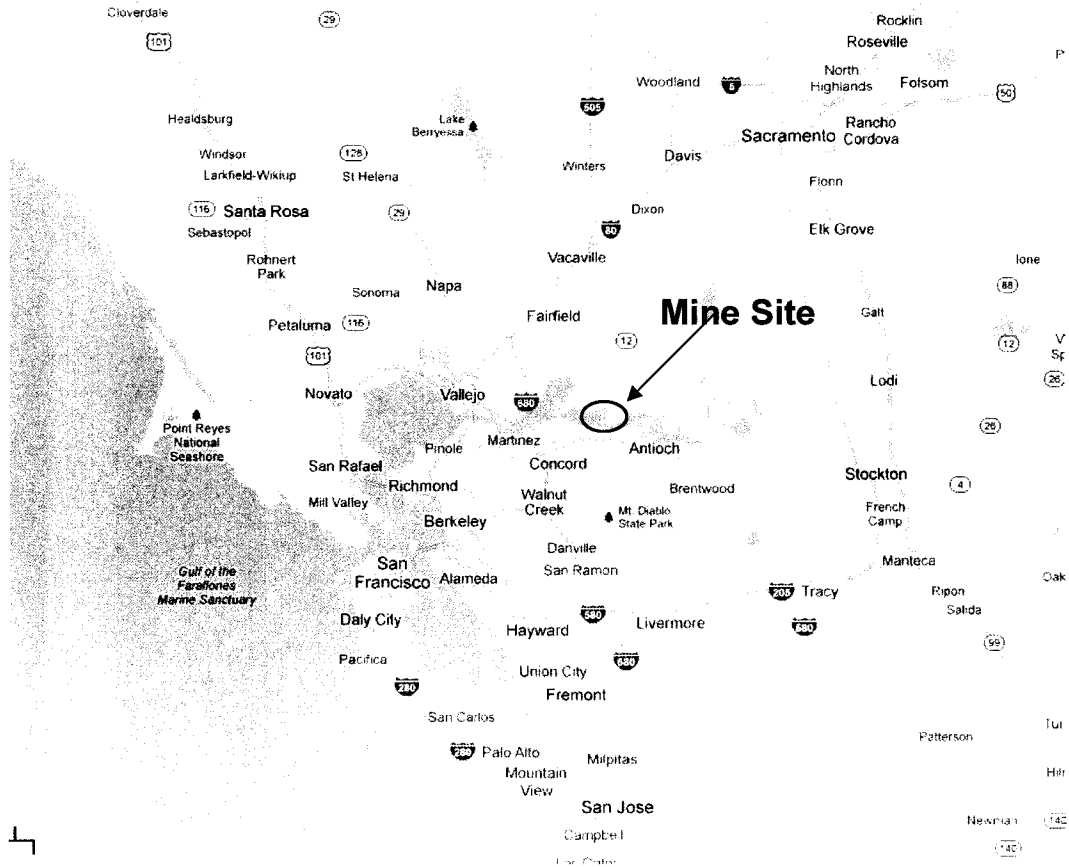
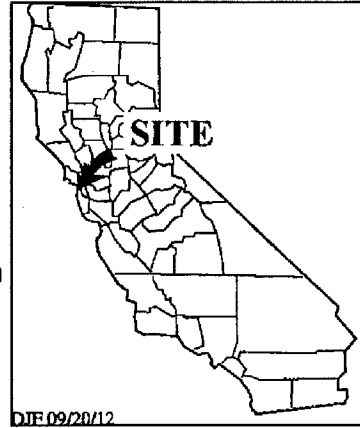
**Application By:-** Hanson Marine Operations  
12667 Alcosta Blvd. Suite 400  
San Ramon, CA 94583

**Purpose:-** Extract sand for construction use

**In:-** Suisun Bay

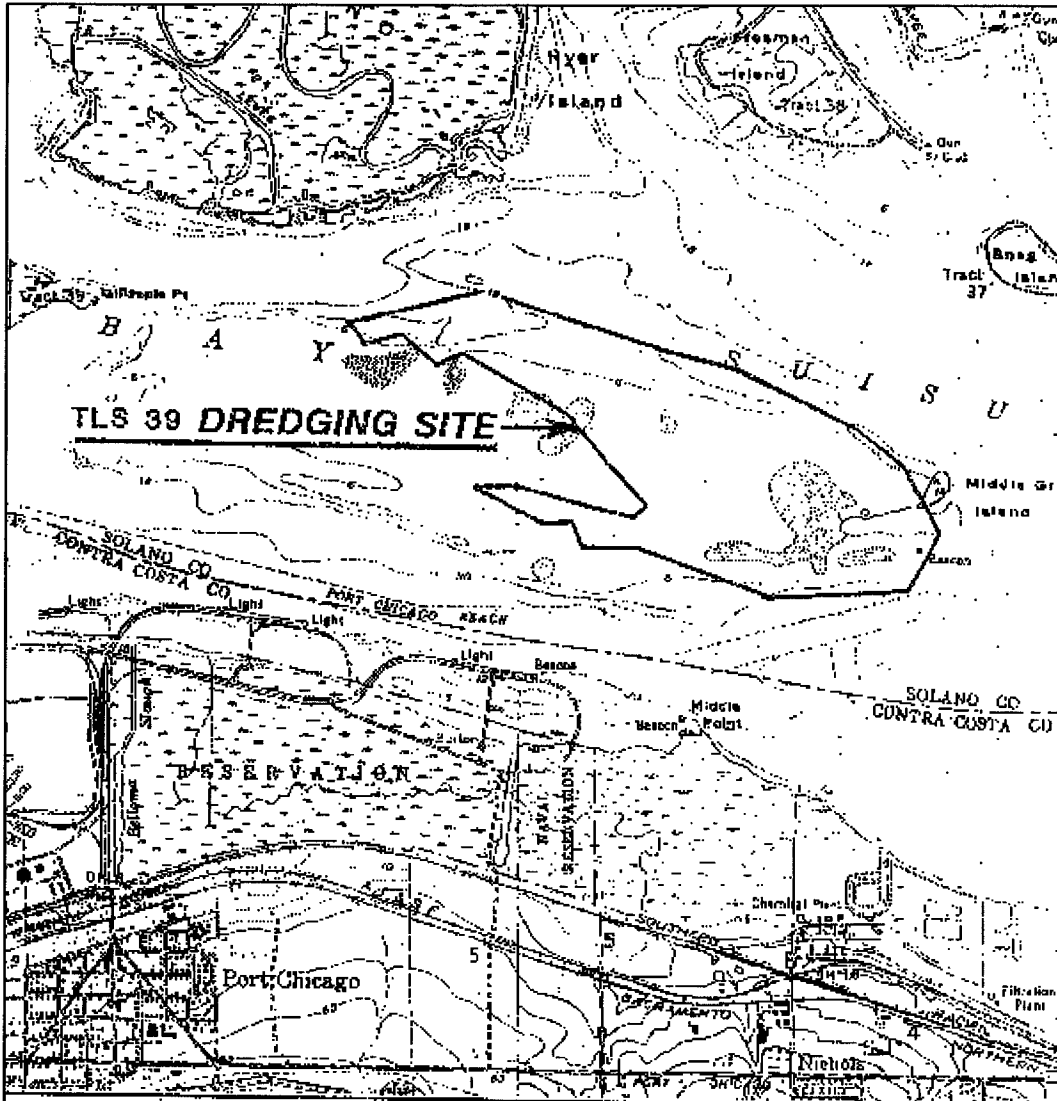
**Datum:-** MLLW

**Adjacent Property Owners:-** State Lands Commission



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