CALIFORNIA COASTAL COMMISSION

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Hearing Date: October 8-12, 2001
Commission Action:

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STAFF REPORT: REGULAR CALENDAR

APPLICATION NUMBER: 5-00-463

APPLICANTS: Regional Water Quality Control Board, Santa Ana
Merkel & Associates
Seagate Lagoons Homeowners Association

PROJECT LOCATION: Seagate Lagoons and Huntington Harbor south of Edinger Avenue, north of Trinidad Island, east of Contender Drive and west of Bonaire Circle, City of Huntington Beach, Orange County.

PROJECT DESCRIPTION: Eradication of Caulerpa taxifolia, a non-native, invasive aquatic algae, from an approximately 3 acre infested area within the harbor. Eradication includes placement of rope and PVC pipe for surveying and monitoring and placement of plastic tarps secured by sandbags over the infested areas. Solid chlorine pucks are placed under the tarping which slowly dissolve and kill the algae.

SUMMARY OF STAFF RECOMMENDATION:

The major issues of this staff report relate to the placement of structures within coastal waters and the use of toxic chemicals within an aquatic environment. The proposed project represents an important effort to protect California's coastal ecosystems from an extremely invasive, non-native aquatic algae that threatens to displace native plant and animal species. The subject application would serve as the follow-up coastal development permit to Emergency Coastal Development Permits 5-00-463-G (Merkel & Associates) and 5-00-403-G (Merkel & Associates). Staff recommends **APPROVAL** of the proposed development with special conditions which require: 1) conformance with the proposed project plans as submitted; 2) identification of the scope and term of approval; 3) requirements for monitoring and reporting; and 4) a requirement that the applicant remove structures placed in coastal waters upon completion of the project .

OTHER APPROVALS RECEIVED: City of Huntington Beach approval-in-concept dated March 12, 2001; U.S. Army Corps of Engineers Nationwide Permit Authorization dated October 13, 2000; California State Lands Commission dated December 4, 2000; Letter of support by the California Department of Fish and Game dated December 14, 2000; Pesticide Research Authorization by the California Department of Pesticide Regulation dated July 13, 2000.

SUBSTANTIVE FILE DOCUMENTS: Emergency Coastal Development Permit files 5-00-463-G (Merkel & Associates) and 5-00-403-G (Merkel & Associates)

I. MOTION, STAFF RECOMMENDATION, AND RESOLUTION OF APPROVAL.

MOTION: I move that the Commission approve Coastal Development Permit No. 5-00-463 pursuant to the staff recommendation.

STAFF RECOMMENDATION OF APPROVAL:

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

RESOLUTION TO APPROVE THE PERMIT:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS:

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. Expiration. If development has not commenced, the permit will expire two years from the date this permit is reported to the Commission. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS:

1. COMPLIANCE WITH PLANS SUBMITTED

All development shall occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth herein. Any deviation from the approved plans must be reviewed and approved by the Executive Director and may require Commission approval.

2. TERM AND SCOPE OF APPROVAL

A. This coastal development permit shall be effective retroactively for work performed in accordance with the emergency permit *and* prospectively for a period of 3 years from the date of approval of this permit by the Commission. Subject to the review and approval of the Executive Director, the term of approval may be extended through an amendment to this permit.

B. Re-application of chlorine and re-tarping of existing treatment areas as well as tarping and treating of additional area within the boundary of the project site, defined as the area within Tax Assessors Parcels 178-700-01, 178-640-01, 178-640-03, 178-640-04, 178-641-31, 178-641-32, 178-641-34, 178-642-25 and 178-643-53 and generally depicted on Exhibit 2, is authorized under this coastal development permit. The applicant shall provide written notification to the Executive Director at least 10 business days prior to the commencement of any re-application of chlorine or placement of additional tarping. Written notification shall identify the specific location of the proposed activity. No change to the project boundary may occur without an amendment to this permit or a new coastal development permit, unless the Executive Director determines that no amendment or new permit is required. In addition, no change to the proposed method of chlorine containment shall occur without an amendment to this permit or a new coastal development permit, unless the Executive Director determines that no amendment or new permit is required. Subject to a determination by the Executive Director, changes to the boundary of the project area and method of chlorine containment may be processed as an immaterial amendment to this permit in accordance with Section 13166 of the California Code of Regulations.

3. MONITORING AND REPORTING

In consultation with the Executive Director of the Coastal Commission and the members of Southern California Caulerpa Action Team (SCCAT) or any successor to SCCAT, the applicant shall monitor the results of the eradication program and the effect of the eradication upon biological resources within the project area including monitoring of biological resources which are not the target of the eradication program. At minimum, the applicant shall provide a written report to the Executive Director of the Commission and the members of SCCAT documenting the results of the monitoring on an annual basis during the term of the permit as established in Special Condition 2. The written report shall identify a) activity undertaken since the last report; b) the condition of C. taxifolia in the treatment area; c) identification of any new C. taxifolia infestations; d) any impacts the project has had upon biological resources within the project area; e) recommendations for future action regarding the eradication of C. taxifolia and/or actions to minimize or avoid any significant adverse impacts upon biological resources that monitoring may identify. Unless the Executive Director determines that no permit amendment or new permit is required, the applicant shall apply for an amendment or a new coastal development permit to implement

any mitigation measures necessary to address any significant adverse effects the project may have upon biological resources that are not the target of the eradication program.

4. **POST PROJECT REMOVAL OF STRUCTURES FROM COASTAL WATERS**

The applicant shall completely remove all structures approved for placement in coastal waters by this coastal development permit upon a determination by the applicant that the project has been successfully completed, or upon implementation of alternative means of C. taxifolia eradication which do not rely upon utilization of the structures, or at the expiration of this permit, whichever occurs first.

IV. FINDINGS AND DECLARATIONS:

The Commission hereby finds and declares:

A. Project Description and Location

The applicant is proposing the eradication of *Caulerpa taxifolia*, a non-native, invasive aquatic algae, from an approximately 3 acre infested area within Huntington Harbor (Exhibit 1 and 2). The 3 acre project area consists of two irregularly shaped bulkhead-lined lagoons (herein 'east lagoon' and 'west lagoon') and a bulkhead lined channel (Exhibit 2). According to the last survey, the west lagoon has an approximately 0.37 acre infested area, the east lagoon has 1.9 acres of infestation, and the adjoining channel has 0.74 acres of infestation. Eradication includes placement of rope and PVC pipe for surveying and monitoring and placement of light-proof plastic tarps secured by sandbags over the infested areas. Solid chlorine pucks are placed under the tarping to kill the algae. The chlorine used is similar to the solid chlorine pucks used as an algaecide in swimming pools. These chlorine pucks dissolve slowly over a 30 day period.

The proposed project is located in the City of Huntington Beach, Orange County, within the man-made Seagate Lagoons and within a channel adjacent to the lagoons which connects with Huntington Harbor. The project area is bounded by Edinger Avenue to the north, Trinidad Island to the south, Contender Drive to the west and Bonaire Circle to the east. The lagoons are owned by the Seagate Lagoons and Westchester Bay Homeowners Associations and the channel area is owned by Harbour-Pacific Limited. While the community is not gated, use of the privately owned lagoons and channel area is limited to the residents of the Seagate Lagoons and Westchester Bay communities.

The proposed project is funded by the Regional Water Quality Control Board and has been designed in consultation with a multi-agency team known as the Southern California Caulerpa Action Team (SCCAT) which consists of the Santa Ana and San Diego Regional Water Quality Control Boards, U.S. Department of Agriculture, California Department of Food and Agriculture, National Marine Fisheries Service, U.S. Fish and Wildlife Service, California Department of Fish and Game and the California Coastal Commission. The goal of SCCAT is to completely eradicate all *C. taxifolia* infestations. Merkel and Associates is implementing the project at Huntington Harbour.

The subject coastal development permit is the follow-up to Emergency Coastal Development Permits 5-00-403-G and 5-00-463-G which were issued in October 2000 and January 2001, respectively (Exhibit 3). Treatment of *C. taxifolia* began in the winter of 2000 and was completed by April 2001. This treatment occurred during a period of reduced coverage when the algae lay dormant in the sediment of the lagoon. Surveys taken earlier this summer found that, except for a

few cases, the treatment was successful. However, the surveys also revealed that additional occurrences of the algae were present in some portions of the lagoon where treatment had not occurred. The applicant intends to continue to monitor the project area for re-growth and new occurrences of the algae and to re-treat areas of re-growth and to tarp and chlorinate new occurrences of the algae. Recent surveys of the remainder of the harbor did not identify any new occurrences of the algae outside of the project area.

The subject coastal development permit request is to provide follow-up authorization to the work approved by the Executive Director under the emergency permits. In addition, the permit request is to allow for re-treatment of existing tarped areas and any additional tarping and chlorination needed to treat new occurrences in the project area. The project area is defined as the east and west lagoons and the channel adjacent to the lagoons. More specifically, the project area is defined as the area within Tax Assessors Parcels 178-700-01, 178-640-01, 178-640-03, 178-640-04, 178-641-31, 178-641-32, 178-641-34, 178-642-25 and 178-643-53 (Exhibit 2).

The applicant has engaged in efforts to notify residents in the area of the eradication program and the role that individuals may have in preventing spread of the algae. These efforts have included informational workshops, advertisements within community newsletters and newspapers, and contact with the local diving and aquarium industries. The applicant has also held workshops and provided similar outreach in coastal communities throughout southern California. Other outreach efforts have included informational web sites and press releases in regional newspapers.

The proposed development is located in the City of Huntington Beach which has a certified local coastal program for this portion of the city. However, the proposed project is located below the mean high tide line. Therefore the proposed work is within an area over which the Commission retains coastal development permit jurisdiction pursuant to Section 30519(b) of the Coastal Act. Accordingly, the project requires a coastal development permit from the California Coastal Commission rather than from the City of Huntington Beach.

B. Marine Habitat

1. Marine Resource Impacts

Section 30230 of the Coastal Act requires that marine resources shall be maintained, enhanced, and where feasible, restored. Section 30230 of the Coastal Act states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation,*

maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30230 of the Coastal Act requires that marine resources be protected and that the use of the marine environment be carried out in a manner that will sustain the biological productivity of coastal waters. Section 30231 of the Coastal Act requires that the quality of coastal waters be maintained and restored. The proposed project would introduce structures and chlorine to coastal waters in order to eradicate an invasive algae that threatens California's coastal ecosystems. The placement of these structures and use of toxic chemicals in coastal waters has the potential to adversely impact certain individual biological resources. However, if successful, the project will prevent a problem which, on a larger scale, has the potential to displace many more marine resources and to decrease the biological productivity of California's coastal ecosystems. The California Department of Fish and Game is supportive of the project (Exhibit 7). In addition, the California Department of Pesticide Regulation has authorized the use of chlorine, as proposed (Exhibit 8).

C. taxifolia is a tropical green marine alga that is popular in the aquarium trade because of its attractive appearance and hardy nature (Exhibit 6). In 1984, this seaweed was introduced into the northern Mediterranean. From an initial infestation of about 1 square yard it grew to cover about 2 acres by 1989, and by 1997 blanketed about 10,000 acres along the coasts of France and Italy. Genetic studies demonstrated that those populations were from the same clone, possibly originating from a single introduction. This seaweed spreads asexually from fragments and creates a dense monoculture displacing native plant and animal species. In the Mediterranean, it grows on sand, mud and rock surfaces from the very shallow subtidal to about 250 ft depth. Because of toxins in its tissues, *C. taxifolia* is not eaten by herbivores in areas where it has invaded. The infestation in the Mediterranean has had serious negative economic and social consequences because of impacts to tourism, recreational diving, and commercial fishing.

Because of the grave risk to native habitats, in 1999 *C. taxifolia* was designated a prohibited species in the United States under the Federal Noxious Weed Act. However, its possession is still legal in California. In June 2000, *C. taxifolia* was discovered in Aqua Hedionda Lagoon in San Diego County, and in August of that year an infestation was discovered at the subject site in Huntington Harbor in Orange County. Genetic studies show that this is the same clone as that released in the Mediterranean. Other infestations are likely. Although a tropical species, *C. taxifolia* has been shown to tolerate water temperatures down to at least 50° F. Although warmer southern California habitats are most vulnerable, until better information if available, it must be assumed that the whole California coast is at risk. All shallow marine habitats could be impacted.[1]

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[1] References

- Meinesz, A. (Translated by D. Simberloff) 1999. Killer Algae. University of Chicago Press
- Chisholm, J.R.M., M. Marchioretti, and J.M. Jaubert. Effect of low water temperature on metabolism and growth of a subtropical strain of Caulerpa taxifolia (Chlorophyta). Marine Ecology Progress Series 201:189-198
- Ceccherelli, G. and F. Cinelli. 1999. The role of vegetative fragmentation in dispersal of the invasive alga Caulerpa taxifolia in the Mediterranean. Marine Ecology Progress Series 182:299-303
- Smith C.M. and L.J. Walters. 1999. Fragmentation as a strategy for Caulerpa species: Fates of fragments and implications for management of an invasive weed. Marine Ecology 20:307-319.
- Jousson, O., J. Pawlowski, L. Zaninetti, A. Meinesz, and C.F. Boudouresque. 1998. Molecular evidence for the aquarium origin of the green alga Caulerpa taxifolia introduced to the Mediterranean Sea. Marine Ecology Progress Series 172:275-280.
- Komatsu, T. A. Meinesz, and D. Buckles. 1997. Temperature and light responses of the alga Caulerpa taxifolia introduced into the Mediterranean Sea. Marine Ecology Progress Series 146:145-153.
- Gacia, E. C. Rodriquez-Prieto, O. Delgado, and E. Ballesteros. 1996. Seasonal light and temperature responses of Caulerpa taxifolia from the northwestern Mediterranean. Aquatic Botany 53:215-225.
- Belsher, T. and A. Meinesz. 1995. Deep-water dispersal of the tropical alga Caulerpa taxifolia introduced into the Mediterranean. Aquatic Botany 51:163-169.

C. taxifolia can grow in large monotypic stands that can displace native seaweeds, seagrasses, and kelp forests. This displacement of native aquatic plant species can adversely impact marine biodiversity with associated impacts upon fishing, recreational diving, and tourism. *C. taxifolia* is known to grow on sand or mud substrates in both shallow and deep water areas. Since eelgrass grows in shallow sandy areas, *C. taxifolia* could displace eelgrass in Huntington Harbour.

Eelgrass (Zostera marina) is an aquatic plant consisting of tough cellulose leaves which grows in dense beds in shallow, subtidal or intertidal unconsolidated sediments. Eelgrass is considered worthy of protection because it functions as important habitat for a variety of fish and other wildlife, according to the Southern California Eelgrass Mitigation Policy (SCEMP) adopted by the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (CDFG). For instance, eelgrass beds provide areas for fish egg laying, juvenile fish rearing, and water fowl foraging. Sensitive species, such as the California least tern, a federally listed endangered species, utilize eelgrass beds as foraging grounds. If *C. taxifolia* were allowed to reproduce unchecked within the harbor, sensitive eelgrass beds and the wildlife which depend upon them would be adversely impacted. Therefore, eradication of *C. taxifolia* would be beneficial for native habitat and wildlife.

In addition, the proposed project is not anticipated to have any significant adverse impact upon biological resources within the treatment area or adjacent to the treatment area. According to a letter prepared by Merkel & Associates dated May 31, 2001, there are limited biological resources within the project area. For instance, no eelgrass is present in the project area and only a small amount of widgeon grass (Ruppia maratima) was observed in the west lagoon. In addition, the lagoons are primarily occupied by non-native fish and large game fish which were intentionally introduced to the lagoons by local residents. No information has been submitted to the Commission which suggests that sensitive biological resources are present in the project area. Regarding biological impacts, Merkel & Associates states in their May 31, 2001 letter:

> *Placing tarps over the Caulerpa facilitates the maintenance of a high concentration of herbicide on the target species under the tarp, allowing the surrounding water body to remain uncontaminated by the herbicide. All organisms under the tarp are killed by the treatment. This small loss has been determined by the SCCAT to be acceptable and justifiable when weighed against the potential loss that could results* [sic] *from inaction. During eradication technique development and implementation at Agua Hedionda Lagoon and during eradication at Huntington Harbour, water samples were collected from under the tarp, immediately adjacent to the tarp, and from the water column in the vicinity of the tarp. Free chlorine was undetectable outside the tarps in all cases, while concentrations remained adequate under the tarp to treat the Caulerpa. Chlorine demand under the tarp is high due to the large amount of organic material. Any chlorine that is not consumed through reactions with Caulerpa is quickly consumed by the substrate which has a high organic content. Measurements have indicated that once the treatment pucks have fully dissolved, chlorine is undetectable under the tarps within 24 hours.*
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> *In the event that the security of a tarp would be compromised in some way, any release of water from underneath would be immediately diluted by the surrounding water column. When considering the volume of water in the immediate area of the tarp in relation to the volume under the tarp, it is clear that any escaped chlorine wound be diluted to an undetectable level and of no threat to marine life. In addition to taking physical measurements, divers working on the project have not observed any ill effects on plants or animals of chlorine treatment beyond the tarped areas. This is true in spite of the fact that some fish are attracted to the structure provided by the tarps. The non-native yellowfin goby (Acanthogobius flavimanus), which is the most abundant species in the ponds, quickly colonize the margins of the tarps and fastening-*

sand bags in large numbers during treatment. It is expected that if there were inhospitable conditions around the tarps that these fish would move elsewhere or be found expired, neither has been observed.

The proposed project would protect sensitive native marine resources, such as eelgrass, by eliminating a non-native invasive aquatic algae that threatens to displace native marine life. The method of eradicating C. taxifolia described above has the potential for short term impacts upon biological resources in the project area. For instance, as noted above, all organisms under the tarped areas are killed by the treatment. However, no sensitive biological resources are known to exist in the project area. Therefore, in this case, the loss of individuals would not have a significant adverse impact upon biological resources because those individuals are not part of a species population that is particularly rare or valuable. In addition, surveys of the project area during implementation of the project under the emergency coastal development permits indicate that the project does not have any adverse impact upon biological resources located outside of the tarps. Moreover, although it does have immediate adverse impacts on the biological resources under the tarp, the broader impacts (both geographically and temporally) on biological resources in the area are positive. For instance, once the eradication is complete, the area would be re-colonized by marine life. In sum, the loss of individual organisms which are not known to be rare or particularly significant in order to prevent the large scale, ecosystem-wide impacts which are expected to occur if C. taxifolia is not eradicated from the coastal waters of California is consistent with Section 30230 of the Coastal Act because the eradication of the algae would protect the biological productivity of coastal waters and improve the potential of maintaining healthy populations of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

As noted above, the applicant is proposing to monitor the eradication effort. The stated purpose of the monitoring is to monitor the success of the eradication effort and to provide recommendations to the SCCAT regarding future management of C. taxifolia infestations. The proposed monitoring would occur quarterly and would include the submittal of quarterly monitoring reports. In order to assure that the proposed project is effective and monitoring is undertaken, as proposed, the Commission imposes Special Condition 3. Special Condition 3 requires the applicant to undertake the proposed monitoring. Meanwhile, the proposed monitoring does not specify that impacts upon biological resources in the project area will be monitored. Therefore, Special Condition 3 specifies that monitoring include identification of impacts upon biological resources caused by the project and the development of recommendations to address any significant adverse impacts upon biological resources caused by the project. If monitoring indicates that significant adverse impacts upon biological resources is occurring, Special Condition 3 requires the applicant to seek a new permit or seek an amendment to this permit to modify the project to mitigate the adverse impacts.

Monitoring may identify areas of re-growth of C. taxifolia or additional infestation sites within the project area which were not previously identified. In such cases, the applicant is proposing to treat re-growth or additional infestation sites. Special Condition 2 specifies that re-treatment of existing sites and treatment of additional infestation sites within the boundary of the project area is authorized under this coastal development permit. Special Condition 2 requires the applicant to notify the Executive Director of re-treatment or treatment of new infestations at least 10 business days prior to the treatment event.

Also, the method of treatment and containment of the chlorine (i.e. tarps secured by sandbags or other devices) has been shown to be effective at eradicating C. taxifolia without significant adverse impacts upon biological resources outside of the containment area. If the method of treatment and containment were to change, the impacts upon biological resources could change. Therefore, in order to assure that any such changes are analyzed for consistency with the Coastal Act, Special Condition 2 specifies that changes to the method of treatment and containment requires an

amendment to this coastal permit or a new coastal permit unless the Executive Director determines that no amendment or new permit is required.

Also, biological surveys indicate that eelgrass beds are present in areas of Huntington Harbour near the project site. However surveys have also indicated that there are no eelgrass beds within the boundary of the project area. Therefore, re-treatment of known infestations and treatment of new infestations within the boundary of the project area are not anticipated to have any significant adverse impacts upon eelgrass beds. However, if the boundary of the project area were to change, impacts upon eelgrass beds could occur. Such impacts, if found to be significant, would need to be mitigated. Therefore, Special Condition 1 requires the applicant to conform with plans submitted, assuring that impacts upon marine resources are known, avoided, minimized and mitigated, as necessary. In addition, Special Condition 2 specifies that any change to the boundary of the project area or a change to the method of chlorine containment requires an amendment to this permit or a new permit unless the Executive Director determines that no amendment or new permit is required.

As conditioned, the Commission finds that the proposed project is consistent with Section 30230 of the Coastal Act.

2. Fill of Coastal Waters

The proposed project includes placing rope and PVC pipe for surveying and monitoring and placement of plastic tarps secured by sandbags over the infested areas. The placement of structures is fill of coastal waters as defined by Section 30108.2 of the Coastal Act. Section 30233 of the Coastal Act allows the filling of coastal waters or wetlands only where feasible mitigation measures have been provided to minimize adverse environmental effects, and for only the eight uses listed in Section 30233 of the Coastal Act, as follows:

> *(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
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> *(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
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> *(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*
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> *(3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and necessary support service facilities, shall not exceed 25 percent of the degraded wetland.*
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> *(4) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*

(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

(6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

(7) Restoration purposes.

(8) Nature study, aquaculture, or similar resource dependent activities.

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable long shore current systems.

In this case, the proposed fill would be for the purpose of restoring open coastal water habitat. These proposed activities are allowable pursuant to Section 30233(a)(7) of the Coastal Act.

Section 30233 of the Coastal Act also requires that the proposed fill be the least environmentally-damaging feasible alternative including the use of feasible mitigation measures to reduce adverse environmental effects. The applicant has proposed measures to ensure that the proposed project is the least environmentally-damaging feasible alternative and has included mitigation measures to avoid adverse effects on the marine environment.

Alternatives to the proposed project include the no action alternative and the use of mechanical means to remove the algae. Under the no action alternative, the C. taxifolia infestation would persist unabated. Given the invasive nature of C. taxifolia, it is anticipated that the algae would continue to spread within Seagate Lagoons, Huntington Harbor, and within any areas suitable for to the growth of the algae. As described above, C. taxifolia would displace native aquatic vegetation. Within Huntington Harbor, sensitive eelgrass habitat would be displaced, having significant adverse impacts upon native fish reproduction. Since the no project alternative would have a significant adverse impact upon aquatic ecosystems, the no project alternative was rejected.

The second alternative would be to utilize mechanical means to remove the algae, rather than chemical methods. Under this alternative, the algae would be physically removed by hand or with tools. However, C. taxifolia can easily fragment when removed using mechanical means. Since C. taxifolia spreads asexually from fragments, the disturbance and fragmentation of individual plants would like contribute to the spread of the algae rather than its eradication. Since use of mechanical means would not feasibly eradicate the algae, this alternative was rejected.

The proposed project would use rope and pipe for surveying and plastic tarps secured by sandbags to kill the algae. If these materials were left in place they could contribute to the degradation of the marine environment. For instance, the persistence of the structures could displace soft bottom habitat and associated organisms. In addition, free floating fragments of plastic tarp could be mistaken for food by marine mammals and birds which could suffocate or starve as a result of consuming the plastic. However, the proposed structures may be removed upon completion of the project. Removal of the rope, pipe, plastic tarps and sandbags would avoid the potential adverse impact and would be considered a feasible mitigation measure. In addition, removal of these materials would also restore the benthic habitat to it pre-infestation condition and facilitate re-colonization of the habitat by native organisms. In order to assure that the structures are removed upon completion of the project and that this feasible mitigation measure is

implemented as required by Section 30233(a) of the Coastal Act, the Commission imposes Special Condition 4. As conditioned, the Commission finds the proposed project consistent with Section 30233(a) of the Coastal Act.

C. Public Access

Section 30604(c) of the Coastal Act requires that every coastal development permit issued for any development between the first public road and the sea include a specific finding regarding the conformity of the proposed development with the public access and recreation policies of Chapter 3 of the Coastal Act. The proposed development is located between the first public road in the area (Edinger Avenue) and Huntington Harbor.

Section 30210 of the Coastal Act requires that maximum public access and recreation opportunities be provided. Section 30210 states as follows:

> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Section 30212 of the Coastal Act states in relevant part:

> *(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:*
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> *(2) adequate access exists nearby, or,*
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> *(b) For purposes of this section, "new development" does not include:*
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> *(4) The reconstruction or repair of any seawall; provided, however, that the reconstructed or repaired seawall is not a seaward of the location of the former structure.*

The proposed project would be located within the waters of Seagate Lagoons and within a small privately owned waterway that branches off from Huntington Harbor. These water areas are privately owned by the single and multi-family residential community that surrounds them (Exhibit 5). The Seagate Lagoons are bulkheaded and surrounded by single and multi-family residences. These lagoons are connected via culverts to Huntington Harbor, however, there is no direct boating access between the lagoons and Huntington Harbor. Boating use of the lagoons, which are not open to the public, is limited to small watercraft launched from private property.

As noted above, part of the project area is within a small branch of privately owned waterway that is contiguous with Huntington Harbor. Larger boats are berthed in private docks within this area. There are no public docking or launching facilities in this part of the waterway.

The grounds and streets of the residential community surrounding the project area are privately owned. However, the community is not gated.

The proposed project involves placing temporary structures under water and applying chemicals to eradicate C. taxifolia. Access to the water in the project area would be temporarily restricted during monitoring surveys and placement of structures and chlorine. However, upon completion of work, access to the area would be available to the property owners within the community. Since the

work is occurring within a private waterway that is not open to the public, the proposed project would not have any adverse impact upon public access.

Public access is available near the project area. For instance, Sunset Aquatic Park, which is a public marina and boat launching facility is located approximately ½ mile west of the project site at the end of Edinger Avenue. The proposed project would not disrupt access to this facility. Therefore, the Commission finds that the proposed project is consistent with Sections 30210 and 30212 of the Coastal Act.

D. Local Coastal Program

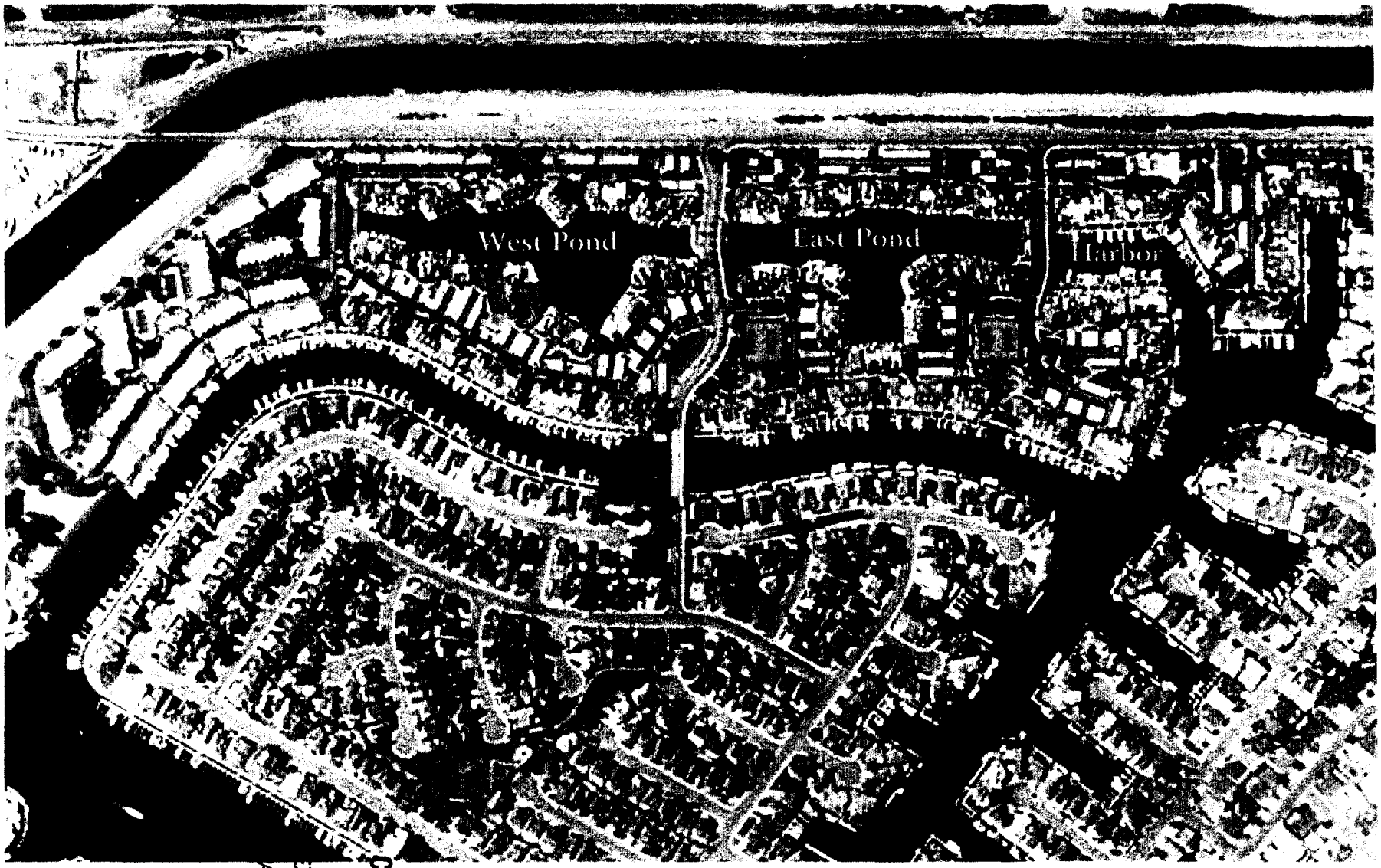
The City of Huntington Beach local coastal program ("LCP") is effectively certified. However, the proposed project is located seaward of the mean high tide line and thus is within the Coastal Commission's original permit jurisdiction area. Therefore, pursuant to Section 30519 of the Coastal Act, the LCP does not apply to the proposed project. However, the certified LCP may be used for guidance in evaluating the proposed project for consistency with the Chapter 3 policies of the Coastal Act.

The City's LCP contains policies regarding the protection of water quality and marine resources, including incorporation of Sections 30230, 30231, and 30233 of the Coastal Act. In addition, the City's LCP has policies protecting environmentally sensitive habitat areas. The Commission has found that the project, as conditioned, is consistent with the Chapter 3 policies of the Coastal Act. Since the same policies are incorporated in the City's LCP, the project as conditioned is consistent with the LCP.

E. California Environmental Quality Act

Section 13096 of the Commission's regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

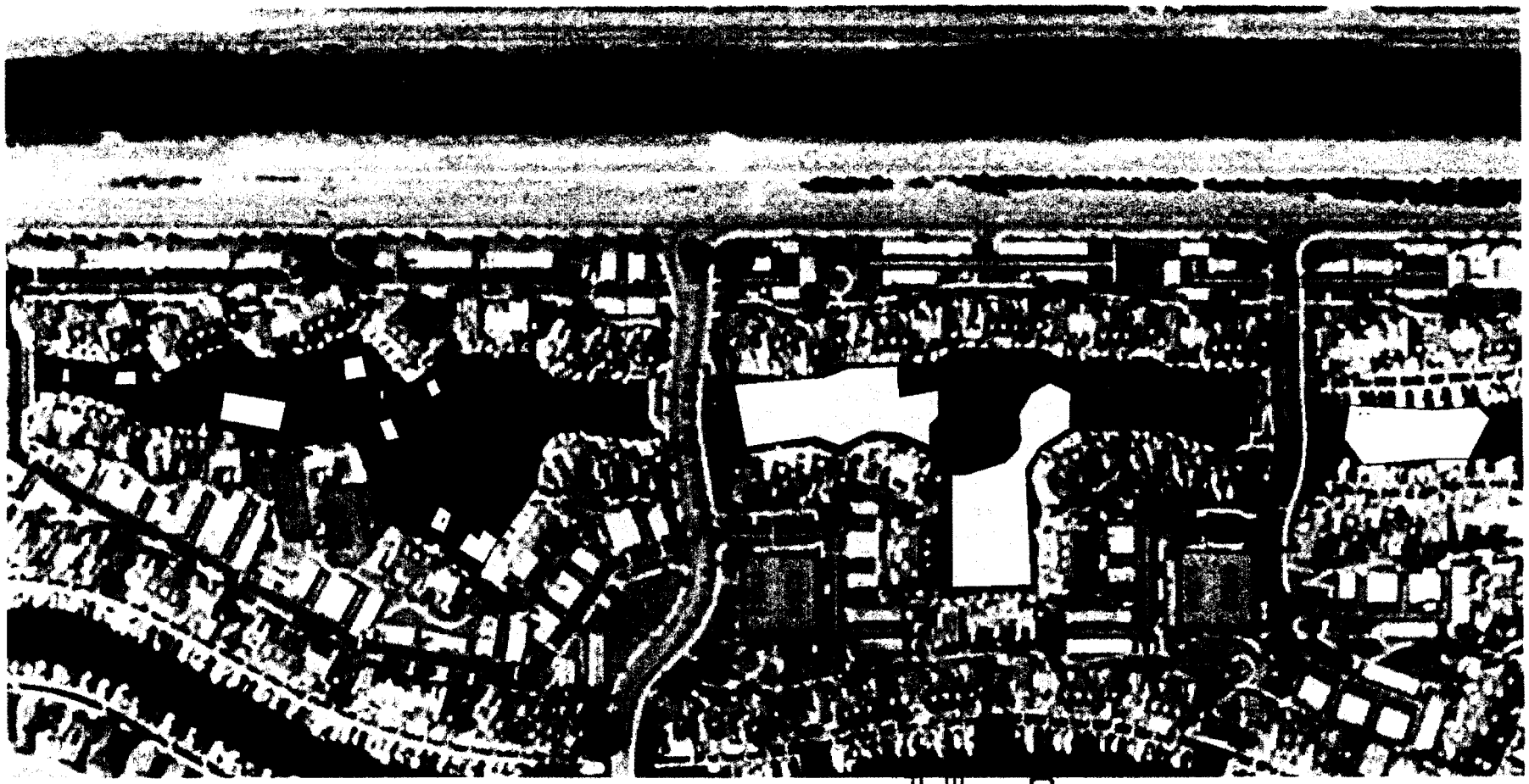
The project is located in an existing harbor in an urbanized area. The project site does not contain any known sensitive marine resources, therefore the impacts arising from the proposed project will be minimal. The proposed project is anticipated to improve marine habitat by eradicating and invasive algae which threatens to displace native habitat. In addition, the proposed development has been conditioned to assure the proposed project is consistent with the resource protection policies of the Coastal Act. The conditions also serve to mitigate significant adverse impacts under CEQA. The conditions are: 1) conformance with the proposed project plans as submitted; 2) identification of the scope and term of approval; 3) requirements for monitoring and reporting; and 4) a requirement that the applicant remove structures placed in coastal waters upon completion of the project . There are no other feasible alternatives or mitigation measures available which will lessen any significant adverse impact the activity would have on the environment. Therefore, the Commission finds that the proposed project, as conditioned, can be found consistent with the requirements of CEQA.



Caulerpa taxifolia infestation locations in Huntington Harbour as discussed in August 2001 letter Huntington Beach, CA

Figure 1

Merkel & Associates, Inc.



Infested/tarped area January 2001

Infested/tarped area August 2001

Caulerpa to be treated August 2001

Status of *Caulerpa taxifolia* in Huntington Harbour
August 23, 2001
Huntington Beach, CA

Figure 2

Merkel & Associates, Inc.

CALIFORNIA COASTAL COMMISSION
South Coast Area Office
200 Oceangate, Suite 1000
Long Beach, CA 90802-4302
(562) 590-5071

EMERGENCY PERMIT

TO: **Merkel & Associates**
3944 Murphy Canyon Road, Suite C106
San Diego, CA 92123

Date: **October 6, 2000**

Agent: **Keith Merkel**

Emergency Permit No. **5-00-403-G**

Location of Emergency Work: **The eastern of the two ponds located on the north side of Huntington Harbour, near the intersection of Trinidad Lane and Edinger Way in the City of Huntington Beach, Orange County.**

Work Proposed: **Identification of the areas infested with *Caulerpa taxifolia* at the project location followed by eradication. Eradication will be accomplished through a combination of techniques including hand retrieval as well as the placement of plastic tarps over large patches. The tarps will be anchored to the bottom of the pond and solid chlorine pellets will be placed under the tarps. The tarps will be left in place until the end of the next growing season to ensure that any rhizoids which may have survived to not re-grow.**

This letter constitutes approval of the emergency work you or your representative has requested to be done at the location listed above. I understand from your information that an unexpected occurrence in the form of an infestation of ***Caulerpa taxifolia*** requires immediate action to prevent or mitigate loss or damage to life, health, property or essential public services. 14 Cal. Admin. Code Section 13009. The Executive Director hereby finds that:

(a) An emergency exists which requires action more quickly than permitted by the procedures for administrative or ordinary permits and the development can and will be completed within 30 days unless otherwise specified by the terms of the permit;
(b) Public comment on the proposed emergency action has been reviewed if time allows; and
(c) As conditioned the work proposed would be consistent with the requirements of the California Coastal Act of 1976.

The work is hereby approved, subject to the conditions listed on the reverse.

Very Truly Yours,

Peter M. Douglas
Executive Director

By: Deborah Lee
Deputy Director

COASTAL COMMISSION

EXHIBIT # 3a
PAGE 1 OF 1

JAN 08 2001

STATE OF CALIFORNIA - THE RESOURCES AGENCY GRAY DAVIS, *Governor*

CALIFORNIA COASTAL COMMISSION
South Coast Area Office
200 Oceangate, Suite 1000
Long Beach, CA 90802-4302
(562) 590-5071

EMERGENCY PERMIT 5-00-463

TO: **Merkel & Associates**
3944 Murphy Canyon Road, Suite C106
San Diego, CA 92123

Date: **January 4, 2001**

Agent: **Keith Merkel**

Emergency Permit No. **5-00-463-G**

Location of Emergency Work: **Various locations of Huntington Harbour on property owned by Seagate Lagoons in the City of Huntington Beach, Orange County.**

Work Proposed: **Identification of the areas infested with *Caulerpa taxifolia* followed by eradication. Eradication will be accomplished through a combination of techniques including hand retrieval as well as the placement of plastic tarps over large patches. The tarps will be anchored to the bottom of the pond and solid chlorine pellets will be placed under the tarps. The tarps will be left in place until the end of the next growing season to ensure that any rhizoids which may have survived do not re-grow.**

This letter constitutes approval of the emergency work you or your representative has requested to be done at the location listed above. I understand from your information that an unexpected occurrence in the form of an infestation of ***Caulerpa taxifolia*** requires immediate action to prevent or mitigate loss or damage to life, health, property or essential public services. 14 Cal. Admin. Code Section 13009. The Executive Director hereby finds that:

(a) An emergency exists which requires action more quickly than permitted by the procedures for administrative or ordinary permits and the development can and will be completed within 30 days unless otherwise specified by the terms of the permit;
(b) Public comment on the proposed emergency action has been reviewed if time allows; and
(c) As conditioned the work proposed would be consistent with the requirements of the California Coastal Act of 1976.

The work is hereby approved, subject to the conditions listed on the reverse.

Very Truly Yours,

Peter M. Douglas
Executive Director

By: Deborah Lee
Deputy Director

COASTAL COMMISSION
5-00-463
EXHIBIT # 36
PAGE 1 OF 1

OCT 13 2000

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

October 12, 2000

REPLY TO
Office of the Chief
Regulatory Branch

DEPARTMENT OF THE ARMY NATIONWIDE PERMIT AUTHORIZATION

Merkel & Associates, Inc.
Attention: Keith W. Merkel
3944 Murphy Canyon Road Suite C106
San Diego, California 92123-4427

5-00-463

Dear Mr. Merkel:

This is in reply to your letter, dated October 5, 2000, concerning your proposal to eradicate the invasive green alga, *Caulerpa taxifolia*, within the Huntington Harbour, in Huntington Beach, Orange County, California, as shown on Figures 1, 2, and 3.

The proposed eradication project is based on the techniques developed for the initial phase of eradication at Agua Hedionda, in San Diego County, California. The work plan involves several phases, beginning with the placement of a rope grid on the bottom for delineation purposes. The second phase is the actual eradication, which involves a combination of techniques including removal by hand as well as the placement of heavy plastic tarps over large patches. The tarps will be anchored to the bottom of the pond and solid chlorine pool pellets will be placed under the tarps. The solid will slowly release chlorine under the tarp, maintaining a concentration high enough to bleach the algal biomass above the bottom. The tarps will be left in place to ensure that any rhizoids that may survive in the mud are blocked from light and flow of fresh water. The Southern California Caulerpa Action Team (SCCAT) has determined that the tarps, which have a very low profile, be left in place at least until the following summer to prevent any re-colonization of the species, the *Caulerpa taxifolia*.

The Corps of Engineers has determined, under Section 10 of the River and Harbor Act of March 3, 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344), that your proposed activity complies with the terms of Nationwide Permit (NWP) Number (No.) 27 for activities in waters of the United States associated with the restoration and the enhancement of degraded waters as specified in the special conditions below and the permit conditions in Enclosure 1. This NWP does not authorize the conversion of natural wetlands to another aquatic use, such as creation of waterfowl impoundments where a forested wetland previously existed.

You must comply with all terms and applicable conditions (regional, general, 404 only, and 401 conditions) described in Enclosure 1 and complete the compliance statement, Enclosure 2.

COASTAL COMMISSION
5-00-463
EXHIBIT # 4
PAGE 1 OF 3

Furthermore, you must comply with the following **Special Condition(s):**

1. The Permittee shall conduct all eradication efforts in accordance to the Rapid Response and Eradication Program for the Invasive Green Alga, *Caulerpa taxifolia* at Agua Hedionda Lagoon, Carlsbad, California, and as coordinated, modified and approved by the SCCAT.

2. The Permittee shall provide the Corps with weekly field observation notes during implementation; these notes shall include: project status of action(s) taken, conditions observed in the field, success of actions taken, failures, and contingency measures taken. The Permittee shall provide the Corps with all post monitoring reports prepared by the Permittee, as outlined in the Rapid Response and Eradication Program for the Invasive Green Alga, *Caulerpa taxifolia* for efforts at Huntington Harbour, in Huntington Beach, Orange County, California. All survey notes shall be submitted to the Corps within one month of conducting any and all field investigations and annual reports on January 1, 2001, January 1, 2002, January 1, 2003, and January 1, 2004.

3. The Permittee shall appropriately (within 7 days) notify and coordinate with the Corps when future modifications are proposed and/or passed for the Rapid Response and Eradication Program for the Invasive Green Alga, *Caulerpa taxifolia* at Huntington Harbour, in Huntington Beach, Orange County, California.

4. The Permittee (or the SCCAT) shall continue development of a long-term programmatic eradication plan for Corps approval via the permit process. This strategy shall identify a regional program for eradicating *Caulerpa taxifolia* in the different environs for which it may occur in southern California as well as other measures to be taken to minimize impacts on the other species, including species that are Federal-listed under the Endangered Species Act and managed under the Magnuson-Stevens Fisheries Management and Recovery Act, present in the affected area. The Permittee (or the SCCAT) shall submit a complete application request within 6 months of the issuance date of this permit.

This letter of verification is valid for a period not to exceed three years unless the NWP is modified, reissued, or revoked before that time. It is incumbent upon you to remain informed of changes to the NWPs.

A NWP does not grant any property rights or exclusive privileges. Also, it does not authorize any injury to the property or rights of others or authorize interference with any existing or proposed Federal project. Furthermore, it does not obviate the need to obtain other Federal, state, or local authorizations required by law.

Thank you for participating in our regulatory program. If you have questions, please contact Russell L Kaiser at (213) 452-3293.

Sincerely,

Mark Durham

Mark Durham
Chief, South Coast Section
Regulatory Branch

Enclosures

STATE OF CALIFORNIA GRAY DAVIS, *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

PAUL D. THAYER, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
California Relay Service From TDD Phone **1-800-735-2922**
from Voice Phone **1-800-735-2929**

Contact Phone: **(916) 574-1892**
Contact FAX: **(916) 574-1925**

December 4, 2000

File Ref: Huntington Harbour
Orange County

Mr. Steve Rynas
California Coastal Commission
200 Oceangate, Suite 1000
Long Beach, CA 90802-4302

5-00-463

Dear Mr. Rynas:

SUBJECT: Emergency Permit Application CDP 5-00-463-G for Eradication of Caulerpa Taxifolia in Huntington Harbour, Orange County

This will confirm that the staff of the California State Lands Commission (CSLC) has reviewed the locations of the work proposed under the subject application. As we understand it, the proposed eradication effort is located in the vicinity of two man made ponds in the northern section of Huntington Harbour near Edinger Avenue; as well as a small area within the channel just east of the eastern pond.

The CSLC's area of leasing jurisdiction extends over the state's fee title ownership including the areas that are referred to as the Main Channel and that portion of the Midway Channel located south of the Main Channel. Based on our review, the proposed work will not involve any sovereign fee owned lands under the jurisdiction of the CSLC. It is the opinion of CSLC staff that the emergency work is consistent with the Public Trust needs in the Huntington Harbour area and we have no objection to the project as proposed.

If you have any questions, please feel free to call me at (916) 574-1892.

Sincerely,

Jane E. Smith
Public Land Management Specialist
Southern California Region

cc: Rachel Woodfield, Merkel & Associates

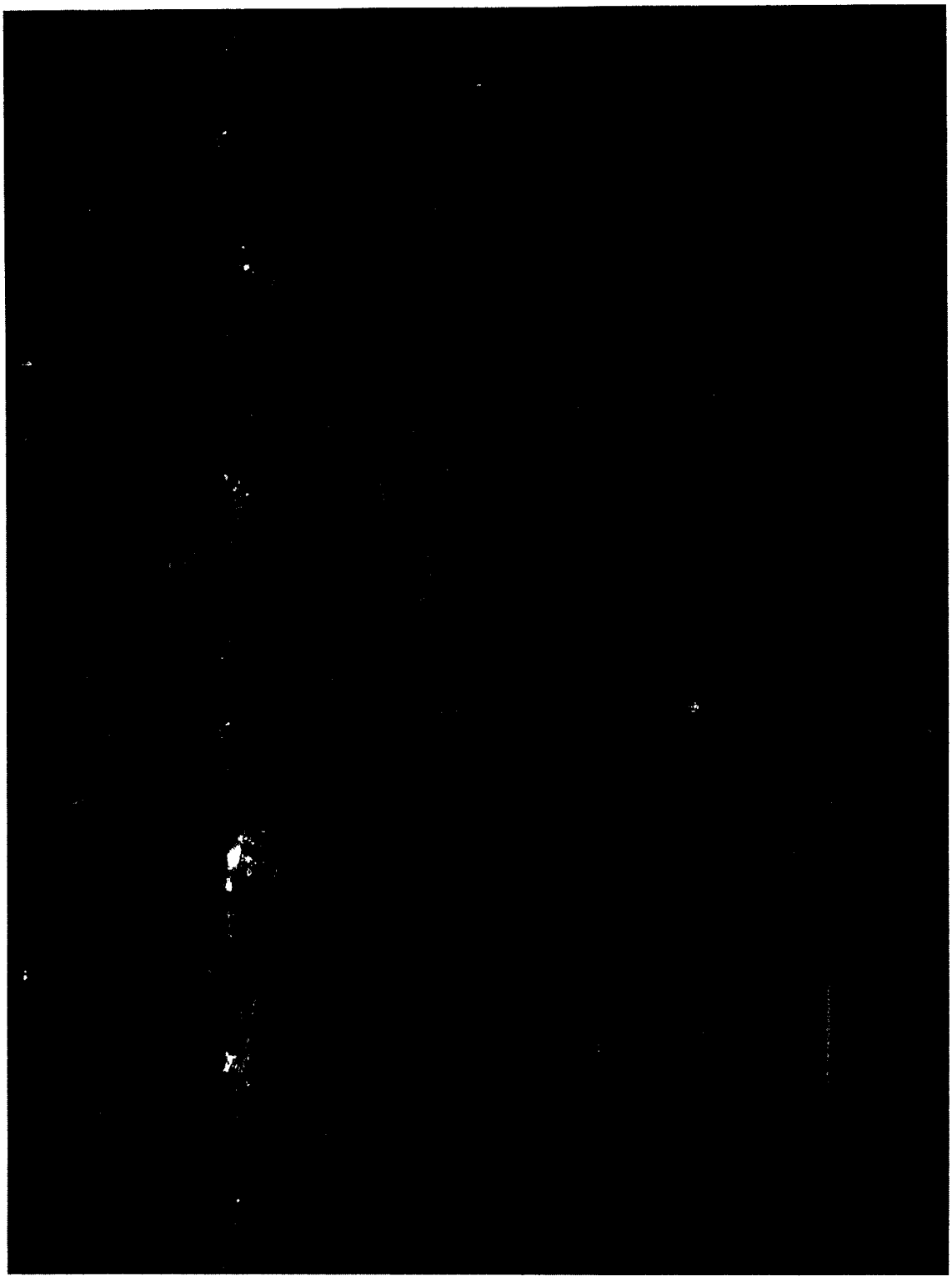


EXHIBIT No. 6
Page 1 of 1
Application Number: 5-00-463
California Coastal Commission

DEPARTMENT OF FISH AND GAME
Marine Region
4949 Viewridge Avenue
San Diego, CA 92123
(858) 467-4231

December 14, 2000

Mr. Steve Rynas
California Coastal Commission
200 Oceangate Avenue
Long Beach, CA 90802-4325

Dear Mr. Rynas:

Re: EXPANSION OF THE CAULERPA TAXIFOLIA ERADICATION PROGRAM IN HUNTINGTON HARBOR, ORANGE COUNTY BY MERKEL AND ASSOCIATES

This is in response to our conversation on December 11, 2000 regarding the Department of Fish and Game's position on the request by Merkel and Associates to amend their existing permit to include additional areas of Huntington Harbor for purposes of eradication of *Caulerpa taxifolia.* The Department is in complete support of this request. It is imperative that this invasive algae be controlled as soon as possible. The potential for devastating effects on indigenous marine species located throughout the Southern California bight area is tremendous. The Department is currently heavily involved with the Southern California Caulerpa Action Team (SCCAT) and will be doing extensive work throughout Southern California on surveillance of this noxious marine algae.

Thank you for the opportunity to comment upon the on-going eradication program and related Coastal Commission permit. If you have any questions please don't hesitate to call me at (858) 467-4218.

Very truly yours,

William Paznokas
Environmental Specialist III
Marine Region
California Department of Fish and Game

AUG 03 2000

State of California
Department of Pesticide
Regulation
Pesticide Registration Branch

JUL 12 2000

Pesticide Research Authorization

DPR Use Only 007018

Amended 7/31/00 (DK)

Researcher	Keith W. Merkel	Telephone No. 858/560-5465
Firm Name	Merkel & Associates, Inc.	Type or print this information for use as a mailing label.
Address	3944 Murphy Canyon Road, Suite C106	[redacted] Labels Included
City, State, Zip	San Diego, CA 92123	

Pesticide	Maximum Rate of A.I. (per acre or other units)	U.S. EPA Registration No. (if any)
1. Olin Pool Care (Tablets) as similar (25)	150ppm residual Cl	for 72 hours (1258922)
2. Sodium hypochlorite solution	150ppm residual Cl	for 72 hours
3. Hypochlorite-Granular forms	Add: (1) Acetic Acid (3) hydrogen Peroxide	
4. (DK)	(2) Quick Lime	(DK)

Type of Pesticide: ☐ Insecticide/Acaricide ☒ Herbicide ☐ Desiccant/Defoliant ☐ Nematicide ☐ Rodenticide ☐ Spray Adjuvant ☐ Fungicide ☐ Plant Growth Regulator ☐ Other:

Commodity or Site to be Treated	Size of each Trial	Number of Trials	Total Area
1. Caulerpa taxifolia (invasive algae)	0.05 acre	20	1.0 acre
2.	Method of Application: ☐ Aerial ☒ Handheld ☐ Ground ☐ Other:		Multiple Applications? ☒ Yes ☐ No
3.	Type of Data Sought: Efficacy of hypochlorite at eradication of Caulerpa in areas with high chlorine demand		
4.	Disposition of Treated Commodity: (See instructions if not crop destruct) ~~Destruct~~		
5.			

Stage of Growth	Starting Date (first application)	Last Application Date	Trial Completion (crop harvest/destruct)
☐ Preplant ☒ Growing Season (All Stages) ☐ Post Harvest ☐ Dormant ☐ Other	7/17/00	6-30-01 (DK) ~~7/17/02~~	6-30-01 (DK) ~~destruct~~

Signature of Responsible Researcher: Keith W. Merkel — Title: Principal Ecologist — Date: 7/11/00

DPR Use Only - Below This Line

Conditions: This authorization is approved for use statewide and expires on the completion date shown above unless otherwise specified.

A ☐ Treated commodity may be harvested.

B ☒ No harvestable crop is involved.

C ☐ Treated commodity must be destroyed or used for research purposes only.

D ☐ Other:

Approval: Don E. Koehler — Plant Physiologist — Date: 7/13/00

I-REG-027 (Rev. 9/98)

COASTAL COMMISSION
5-00-463
EXHIBIT # 8
PAGE 1 OF 1