

CALIFORNIA COASTAL COMMISSION

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Th-10a



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 49th Day: September 6, 1999
 180th Day: January 15, 2000
 Staff: CLK/SF
 Staff Report: April 27, 2001
 Hearing Date: May 10, 2001

STAFF REPORT: REGULAR CALENDAR

Application No.: 1-99-054-A1

Project Applicant: Amesport Landing Condominium Association

Location: 750 Purissima Street, Half Moon Bay, San Mateo County.
 APN 056-182-100 (Exhibits 1-2).

Project Description: Authorize continued and expanded use of existing interim well system for landscaping irrigation.

Related Approvals : Coastal Development Permit 3-88-90
 City of Half Moon Bay Coastal Development Permit PDP-61-99
 Coastside County Water District Resolution 938

Substantive File Documents: Appendix A

1.0 EXECUTIVE SUMMARY

In 1988, the Commission granted Coastal Development Permit 3-88-90 to Bay Farm LTD for subdivision and construction of the 120-unit Amesport Landing condominium project (Exhibit 3). As approved, this project included installation of an interim domestic water well system to supply all domestic and irrigation water for the development until such time that public water from the Coastside County Water District (CCWD) is available. When the Crystal Springs Water Supply Project was completed in 1994, the condominium complex connected to CCWD's public water system for its domestic water supply. However, the condominium association continued to use the well to irrigate landscaping on the site.

Pursuant to Special Condition 2 of CDP 3-88-90, a permit amendment is required to authorize the continued use of the interim well system for landscaping irrigation following connection to the public water system. This condition further specifies that such continued use of the well system must first be approved by appropriate agencies and supported by hydrological tests demonstrating that the approved groundwater extraction does not affect Pilarcitos or Arroyo Leon Creeks. The condominium failed to obtain the required permit amendment to authorize continued pumping for irrigation following availability of public water in violation of this permit condition.

1-99-054-A (Amesport Landing Condominium Association)

The Amesport Landing Condominium Association is seeking an amendment to CDP 3-88-90 that would (1) grant after-the-fact authorization to use the existing well to irrigate landscaping on the condominium site and (2) to expand the use of the interim well system to irrigate both the Amesport Landing site and the adjacent Cunha School site. If approved, the first part of this amendment would remedy the violation of Special Condition 2 of CDP 1-88-90. The second part would expand the current use of the well and would involve interconnecting the existing well, water storage and pumps on the Amesport Landing site to an existing test well on the Cunha School site. The project would eliminate the need to use treated, domestic water for irrigation on both of the sites.

The City of Half Moon Bay granted a coastal development permit for the overall project in 1999, and the CCWD adopted a mitigated negative declaration for the project in 1997 in satisfaction of the California Environmental Quality Act (CEQA). The applicant has provided hydrologic tests demonstrating that the Amesport well has not affected the surface water levels of either Pilarcitos or Arroyo Leon Creeks. No physical modifications to the existing Amesport Landing well are proposed.

The staff recommends approval of the permit amendment application with special conditions that (1) require annual groundwater level monitoring to assure that use of the well for irrigation does not adversely affect surface waters, and (2) prohibit expanded use of the well for purposes other than irrigation of the Amesport Landing and Cunha School sites without the authorization of a coastal development permit or permit amendment.

2.0 STAFF NOTE

The Commission granted Coastal Development Permit (CDP) 1-88-90 for the Amesport Landing project in 1988, prior to certification of the City of Half Moon Bay Local Coastal Program (LCP). The City's LCP was certified and the City assumed permitting authority in 1996. The proposed irrigation system is located within the City's coastal permitting jurisdiction, so the City granted Coastal Permit PDP-61-99 for the proposed use of both the Amesport Landing and Cunha School wells, improvements to the Cunha School well, installation of new pipelines to interconnect the two well systems, and minor modifications to the existing storage and pumping equipment at the Amesport site.

Although the City granted a coastal development permit for the entire project, under Special Condition 2 of CDP 1-88-90, Commission approval of a permit amendment is required to allow continued use of the Amesport Landing well for irrigation. Thus, although the Commission has delegated permitting authority to the City through certification of the Half Moon Bay LCP, the Commission retains authority to review proposed changes to permits it has previously granted, including this proposed change and expansion of use of the Amesport Landing well system from an interim domestic water supply to a long-term irrigation system. The only development that is before the Commission through this permit amendment application is the proposed change and expansion in use of the existing Amesport Landing well. Improvements to the Cunha School well, installation of interconnect pipelines and equipment modifications, are outside of the scope of the Commission's review, and have instead been reviewed and approved by the City of Half Moon Bay. Because the project is located in the City's LCP jurisdiction and is inland of Highway 1, the standard of review for this permit amendment application is the Half Moon Bay LCP.

3.0 STAFF RECOMMENDATION

The staff recommends that the Commission adopt the following resolution:

3.1 Motion

I move that the Commission approve with conditions the proposed amendment to Coastal Development Permit No. 1-99-054 (previously 1-88-90) pursuant to the staff recommendation.

3.2 Staff Recommendation of Approval

Staff recommends a YES vote. To pass the motion, a majority of the Commissioners present is required. Approval of the motion will result in the adoption of the following resolution and findings.

3.3 Resolution to Approve Permit Amendment

The Commission hereby approves with conditions the coastal development permit amendment on the grounds that the development as amended and subject to conditions will be in conformity with the certified Half Moon Bay Local Coastal Program. Approval of the permit amendment 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 amended 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.

4.0 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 on which the Commission voted on the application. 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. 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.
4. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.
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.

5.0 SPECIAL CONDITIONS

All previous permit conditions of CDP 1-88-90 remain effective and unchanged. The Commission adds two new special conditions, as described below. The Commission grants this permit amendment subject to the following special conditions:

1-99-054-A (Amesport Landing Condominium Association)

1. Groundwater Monitoring. The permittee shall submit to the Executive Director annual groundwater level monitoring reports prepared by a qualified hydrologist or engineering geologist. The reports shall provide the following data:
 - a. the volume of water produced during the preceding year,
 - b. an assessment of whether the well continues to meet applicable water quality standards for irrigation use,
 - c. total annual local rainfall, and
 - d. current groundwater level.

Each report shall include an assessment of whether operation of the well has adversely affected either the quantity or the quality of water in the Pilarcitos Creek Sub-Basin. If significant adverse affects are detected, production limits and/or other corrective actions or remedies adequate to protect the aquifer shall be required. If potential remedies or corrective action constitute development as defined by Coastal Act Section 30106, and amendment to this permit shall be required. Use of the Amesport Landing well for any purpose not expressly authorized herein shall be subject to approval of an amendment to this permit.

2. Limitation of Use. Water from the Amesport Landing well shall only be used to irrigate landscaping on the Amesport Landing Condominium and Cunha School sites (APNs 056-182-100 and 056-182-040). Expansion of this use shall be subject to approval of an amendment to this coastal development permit or a new coastal development permit.

6.0 FINDINGS AND DECLARATIONS

6.1 Background

6.1.1 Project Location

Amesport Landing is a 120-unit condominium development on a 10.56-acre parcel (APN 056-182-100), located between Highway 1 and Purissima Street, one block west of Main Street, in Half Moon Bay (Exhibits 1 and 2). The Cunha School is immediately north of the Amesport Landing site (APN 056-182-040). Both sites are located in the City of Half Moon Bay's coastal permit jurisdiction in accordance with the City's certified local coastal program (LCP).

6.1.2 Description of Previously Approved Development

In 1988, the Commission granted Coastal Development Permit 3-88-90 to Bay Farm LTD for subdivision and construction of the 120-unit Amesport Landing condominium project. The project included installation of an interim domestic water well system pending the availability of public water from the Coastside County Water District (CCWD). When the Crystal Springs Water Supply Project was completed in 1994, the condominium complex connected to CCWD's public water system, and disconnected from the interim water system. However, the interim system continued to provide irrigation water for the site.

The interim well system consists of one production well, pumps, three 20,000-gallon storage tanks, piping and related equipment all of which is located in the southwest corner of the project site. The storage tanks are buried. Above-ground equipment, including two 240 gpm booster pumps, a 3,000-gallon pressure tank, meters, back-up generator and control equipment are housed in a 550-square-foot shed.

1-99-054-A (Amesport Landing Condominium Association)

Pursuant to Special Condition 2 of CDP 3-88-90, a permit amendment is required to authorize the continued use of the interim well system for landscaping irrigation following connection to the public water system. This condition further specifies that such continued use of the well system must first be approved by appropriate agencies and supported by hydrological tests demonstrating that the approved groundwater extraction does not affect Pilarcitos or Arroyo Leon Creeks. The condominium association failed to obtain the required permit amendment to authorize continued pumping following availability of public water in violation of this permit condition.

6.1.3 Half Moon Bay Aquifer

The Half Moon Bay aquifer is located beneath the coastal terrace and extends offshore. It is bounded by the hills to the east, Montara Point to the north, Lobitos Creek to the south, and the Seal Cove Fault to the west. Only the onshore portion of the aquifer contains fresh water. The aquifer is divided into five sub-basins: (1) Arroyo de en Medio to Frenchman's Creek, (2) Frenchman's Creek, (3) Pilarcitos Creek, (4) Pilarcitos Creek to Canada Verde, and (5) Canada Verde. The Amesport Landing well draws water from the Pilarcitos Creek Sub-Basin.

In 1993, the Pilarcitos Creek Sub-Basin had an annual surplus of 666 acre-feet (Groundwater Resources 1993). Since these measurements were taken in 1993, withdrawal from the aquifer has decreased substantially. This decreased demand for groundwater resources is due to the availability of municipal water following the completion of the CCWD's Crystal Springs project in October 1994. Not only has the 120-unit Amesport Landing condominium development connected to the municipal water system, but so have numerous residences approved with interim private wells. Most such residential wells were destroyed following connection to the public water system.

6.2 Project Description

The applicant proposes to change the use of its existing, out-of-service well system to irrigate both the Amesport Landing site and the adjacent Cunha School site. The applicant estimates that irrigation of the two sites will require an annual withdrawal of approximately 12 acre-feet from the Pilarcitos Creek Sub-Basin. The project would involve interconnecting the existing well, water storage and pumps on the Amesport Landing site to the existing test well on the Cunha School site. The City of Half Moon Bay has granted a coastal development permit under its Certified LCP for installation of the interconnect pipelines and operation of the Cunha School test well. No physical modifications to the Amesport Landing well are required for this project. The only development subject to Commission review under this permit amendment application are (1) after-the-fact authorization to allow use of the existing Amesport Landing well to irrigate the condominium site and (2) expansion of use of the well to irrigate the school site. The project would eliminate the need to use treated, domestic water for irrigation on both of these sites.

6.3 Coastal Waters and Biological Resources

6.3.1 Issue Summary

Groundwater withdrawal from the Pilarcitos Creek Sub-Basin could potentially reduce the surface water levels of Pilarcitos and Arroyo Leon Creeks, in conflict with policies of the Half Moon Bay LCP concerning protection of coastal waters and environmentally sensitive resources. In accordance with the recommendation of the California Department of Fish and Game, the

1-99-054-A (Amesport Landing Condominium Association)

requested permit amendment is conditioned on hydrological testing demonstrating that the proposed groundwater pumping will not affect these creeks.

6.3.2 Standard of Review

Since the time that the Commission granted CDP 3-88-90 in 1988 for the Amesport Landing Condominium Complex, the City's LCP has been implemented. Therefore, while the standard of review for the original permit application was the Coastal Act, the current standard for the Commission's consideration of the requested permit amendment is the Half Moon Bay LCP. Pursuant to LUP Policy 1-1, the LCP incorporates as guiding policies Coastal Act Policies 30230, 30231, and 30240(b), all of which are relevant to the Commission's consideration of the permit amendment application. In addition, Half Moon Bay LUP Policy 10-14 specifically addresses potential impacts to surface waters and sensitive habitats related to groundwater pumping.

Coastal Act Policy 30230 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.

Coastal Act Policy 30231 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.

Coastal Act Policy 30240(b) states:

Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

LUP Policy 10-14 states:

If new or increased well production is proposed to increase supply, the City shall require that:

- (a) Water quality be adequate, using blending if required, to meet the water standards of Policy 10-12.*
- (b) Wells are installed under inspection according to the requirements of the State and County Departments of Public Health.*

1-99-054-A (Amesport Landing Condominium Association)

- (c) *The amount pumped be limited to a safe yield factor which will not impact water-dependent sensitive habitats, riparian habitats, marshes, and agricultural water use.*
- (d) *Base the safe yield and pumping restriction on studies conducted by a person agreed-upon by the City and the applicant which shall (1) prior to the granting of the permit, examine the geological and hydrological conditions of the site to determine a preliminary safe yield which will not adversely affect a water-dependent sensitive habitat; (2) during the first year, monitor the impacts of the well on groundwater and surface water levels and quality and plant species and animals of water-dependent sensitive habitats to determine if the preliminary safe yield adequately protects the sensitive habitats and what measures should be taken if and when adverse effects occur.*

6.3.3 Discussion

The Commission found in its action to approve CDP 3-88-90 that long-term use of the approved interim well system could potentially affect the surface water levels of Pilarcitos and Arroyo Leon Creeks. This potential impact raises issues concerning the conformity of the proposed continued use of the well for irrigation with Coastal Act Policies 30230, 30231, and 30240(b). The Commission conditioned CDP 3-88-90 to require an amendment to the permit to authorize continued use of the interim well system following connection to the water system and specified that approval of such an amendment would be dependant on (1) the applicant obtaining all other necessary approvals and (2) hydrologic testing demonstrating that groundwater pumping from the Amesport Landing well has not resulted in surface water reductions. Although this condition imposes minimum requirements to allow continued pumping, the Commission's exercise of discretion in considering the permit amendment application is in no way limited to these two factors. The Commission must consider all information pertinent to its evaluation of whether the proposed development is consistent with the policies of the certified LCP.

The Coastside County Water District (CCWD) adopted a mitigated negative declaration under the California Environmental Quality Act (CEQA) and approved use of the well for irrigation of both the condominium and the school sites on July 8, 1997. The City of Half Moon Bay granted coastal development permit PDP-61-99 for aspects of the proposed use of the well subject to its jurisdiction on April 5, 1999. Commission approval of this permit amendment application is the only other approval required for the proposed continued use of the Amesport Landing well for irrigation of the condominium site as well as the expansion of use for irrigation of the school site. Therefore, the applicant has satisfied the requirement under Special Condition 2 of CDP 3-88-90 to obtain all other necessary approvals for the project.

Water level measurements have been taken at various intervals since the well was installed in 1988. As of 1998, the standing water level in the well was 7.7 feet higher than it was when first drilled 10 years previously. The well was in operation throughout this period. According to the CCWD's consulting engineering geologist, this evidence indicates that the combined rainfall and infiltration from irrigation have recharged the aquifer at a higher rate than withdrawals in the sub-basin during the ten-year period following installation of the well (see Exhibit 4). Thus, these tests demonstrate that the proposal to continue to use the Amesport Landing well to irrigate the condominium site has not affected the water level in the aquifer in a manner that would adversely affect the surface water levels of either Pilarcitos or Arroyo Leon Creeks. However,

1-99-054-A (Amesport Landing Condominium Association)

this data does not, in itself, dismiss the possibility that the proposed expansion of use of the Amesport Landing well to irrigate the Cunha School site would affect surface waters.

While the groundwater withdrawal associated with irrigation of the Amesport Landing site has not affected surface water levels, the proposed expansion of use to irrigate the Cunha School site would increase withdrawal from the sub-basin by approximately 4 mg (12 acre-feet) per year. A portion of this water would be provided by the Cunha School well, though the majority would be supplied by the Amesport well. Nevertheless, both wells draw water from the same aquifer sub-basin. In evaluating potential cumulative impacts of the development to coastal resources, the Commission must consider other reasonably foreseeable development that could potentially affect the water level in the sub-basin. The proposed expansion of use of the well to irrigate the school site is part of a larger project that would involve linking the Amesport well to the well on the school site. Like the Amesport Landing well, the Cunha School well draws from the Pilarcitos Creek Sub-Basin. Thus, although operation of the Cunha School well is not under consideration as a part of this permit amendment application, the Commission must assess the effects of the combined withdrawal from the two wells.

As discussed in Section 6.1.3 above, prior to completion of the Crystal Springs project, there was an annual surplus of 666 acre-feet in the Pilarcitos Creek Sub-Basin. Since the Crystal Springs project came on line in 1994, the volume of water withdrawn from the sub-basin has significantly decreased. Consequently, the current surplus in the sub-basin should exceed the 1993 level. Approximately 80-percent of the water used for irrigation is returned to the aquifer through percolation. Therefore, of the 12 acre-feet per year additional water withdrawn to irrigate the school site, all but 2.4 acre-feet would be returned to the aquifer. An annual net withdrawal of 2.4 acre-feet is well within the surplus capacity of the aquifer.

The CCWD's engineer believes that the data concerning the capacity of the Pilarcitos Creek Sub-Basin support the conclusion that the proposed expansion of use of the Amesport Landing well will not affect the surface water levels of either Pilarcitos or Arroyo Leon Creeks. The Commission is not aware of any evidence that would contradict the CCWD engineer's conclusion.

Although the best available existing information supports the determination that the proposed development will not adversely affect surface water levels, unforeseen circumstances could reduce the capacity of the aquifer to support the proposed level of withdrawal. The CCWD proposes to monitor the well and the aquifer throughout its operation to address this concern. Mitigation Measure 2 of the mitigated negative declaration states that the CCWD will engage a qualified hydrologist or engineer to prepare baseline and annual monitoring reports to provide data on historical production from the Amesport well during the preceding year and precipitation and groundwater levels. Each report will indicate whether use of the Amesport well should be limited during the following year to protect the quantity or quality of the aquifer. Mitigation Measure 2 also specifies that the project scope shall not be expanded beyond irrigation of the condominium and school sites without additional environmental review. The City adopted the terms of this mitigation measure as Condition 7 of PDP-61-99. Consistent with the actions of the CCWD and the City, the Commission also adopts these recommended mitigation measures through Special Conditions 1 and 2. These conditions are necessary to ensure that unforeseen circumstances, such as severe or prolonged drought conditions, or a substantial increase of groundwater withdrawal do not result in significant adverse impacts to coastal waters or environmentally sensitive habitat areas.

6.3.4 Conclusion

Ten years of groundwater monitoring have demonstrated that operation of the Amesport well has not affected surface water conditions or exceeded the capacity of the aquifer. Annual recharge rates significantly exceed the proposed rate of withdrawal, and the excess capacity of the aquifer can readily support the proposed continuation and expansion of use. Nevertheless, consistent with the recommendations of the CCWD through the adopted mitigated negative declaration for the project and with the requirements of the City's coastal development permit approval, Special Conditions 1 requires the applicant to submit annual monitoring groundwater reports to the executive director and Special Condition 2 prohibits further expansion of use of the well without additional environmental review and approval of an amendment to this permit. These measures are adequate to ensure that the proposed use of the Amesport well will not adversely affect coastal waters or environmentally sensitive habitat areas. Therefore, as conditioned, the Commission finds that the proposed development is consistent with LUP Policy 1-14 and Coastal Act Policies 30230, 30231, and 30240(b) which are incorporated as policies of the City of Half Moon Bay LCP pursuant to LUP Policy 1-1.

6.4 Alleged Violation

Since the time that the Amesport Landing condominium complex connected with the CCWD public water system, the applicant has continued to use the Amesport Landing well for irrigation without first obtaining Commission approval of an amendment to CDP 3-88-90 as required pursuant to Special Condition 2 of that coastal development permit. Although development has taken place prior to submission of this permit amendment application, consideration of the application by the Commission has been based solely upon the policies of the LCP. Approval of the permit amendment does not constitute a waiver of any legal action with regard to the alleged violation, nor does it constitute an admission as to the legality of any development undertaken on the subject site without a coastal permit.

6.5 California Environmental Quality Act (CEQA)

Section 13096 of the California Code of 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 that the activity may have on the environment.

The Commission incorporates its findings on conformity of the permit amendment with the certified LCP at this point as if set forth in full. These findings address the public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact that the activity may have on the environment. Therefore, the Commission finds that the proposed development with the proposed amendment, as conditioned to mitigate the identified impacts, can be found consistent with Coastal Act requirements to conform to CEQA.

APPENDIX A

Coastal Development Permit File No. 3-88-90. California Coastal Commission, 1988.

Coastal Development Permit No. PDP-61-99. City of Half Moon Bay, 2000.

CCWD 1997. Mitigated Negative Declaration for Amesport Well/Cunha School Irrigation Project, Coastside County Water District, Resolution No. 938, 1997.

Groundwater Resources 1993. Annual Report, 1992-1993, Groundwater Resources, Half Moon Bay, California, Geoconsultants, Inc, 1993.

TOPOGRAPHIC MAP

FIGURE 3

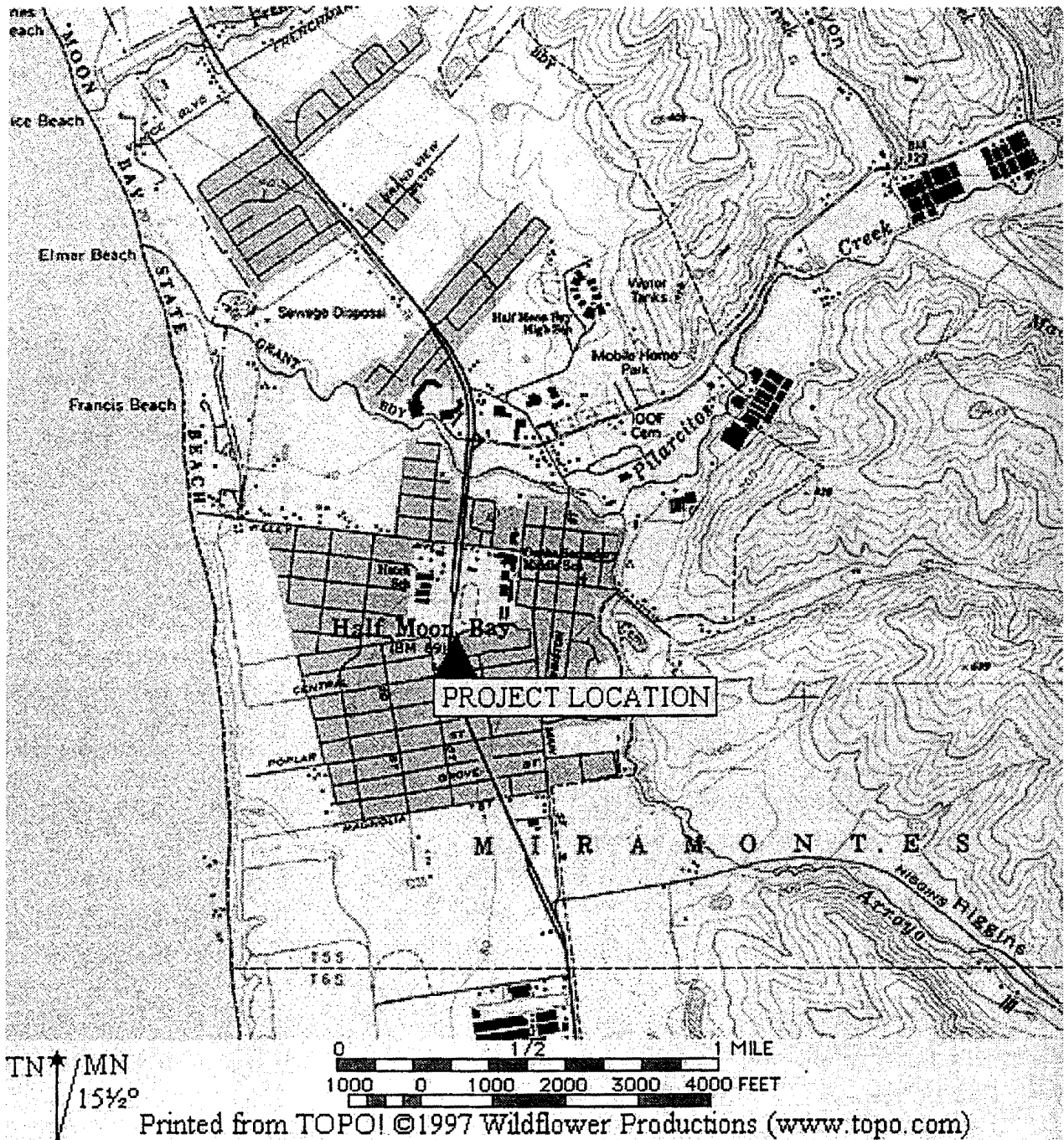
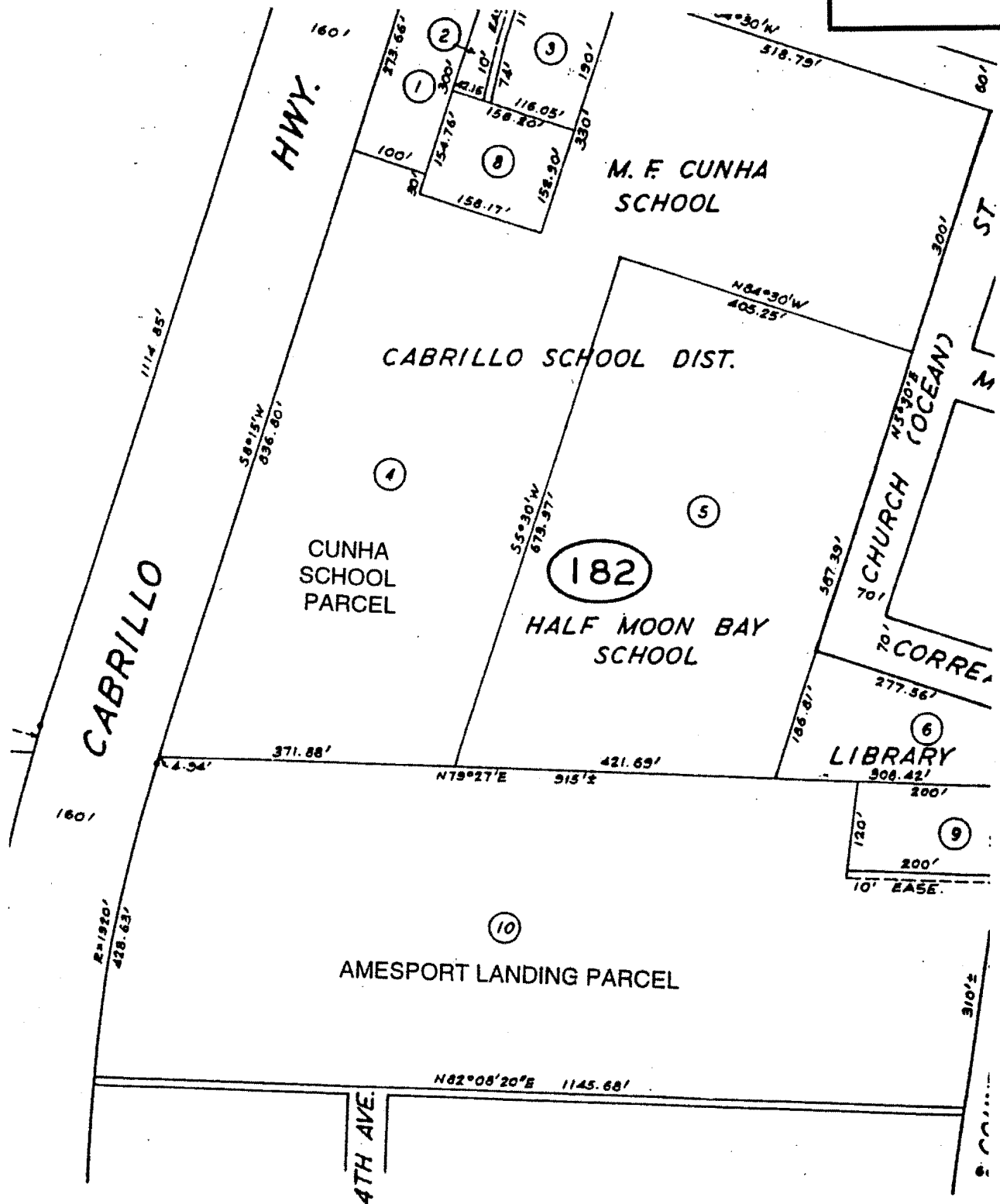


EXHIBIT NO.	1
APPLICATION NO.	1-99-054-A1

EXHIBIT NO.	2
APPLICATION NO.	1-99-054-A1

ASSESSOR'S PARCEL MAP



Book 56, Page 182; Parcels 056-182-100 and 056-182-040

CALIFORNIA COASTAL COMMISSION

CENTRAL COAST DISTRICT

OCEAN STREET, ROOM 310
LA CRUZ, CA 95060
(408) 426-7390

Filed: 09/02/88
49th Day: 10/28/88
180th Day: 03/10/89
Staff: J. Sheele/cm 0841P
Staff Report: 09/23/88
Hearing Date: 10/13/88
Commission Action:



ADOPTED

STAFF REPORT: CONSENT CALENDAR

APPLICATION NO.: 3-88-90

APPLICANT: BAY FARMS LTD., c/o R. Judd Hanna

PROJECT LOCATION: 750 Purissima Street, Half Moon Bay, San Mateo County
APN 056-182-100

PROJECT DESCRIPTION: Subdivision and construction of a 120-unit condominium project, recreation building, tot-lot, carports, garages, parking areas, street improvements, two test wells, conversion of one to an interim water well system, water system improvements, utilities, grading and fencing.

Lot area:	10.5 acres
Building coverage:	76,223 sq. ft.
Pavement coverage:	149,174 sq. ft.
Landscape coverage:	234,597 sq. ft.
Proposed parking spaces:	291 (120 attached garages, 120 detached carports, 51 uncovered guest parking spaces)
Zoning:	Planned Development District
Plan designation:	Residential-High Density, 8 to 25 units/acre
Project density:	11 units/acre
Ht abv fin grade:	30 feet

LOCAL APPROVALS RECEIVED: Major subdivision, Use Permit, and Site and Design Permit. CEQA - Negative Declaration granted July 19, 1988.

SUBSTANTIVE FILE DOCUMENTS:

- o Draft and Final EIR - Amesport Landing, Half Moon Bay by Environmental Science Associates, Inc., January, 1984, and August, 1984.
- o Draft Hydrology and Hydrogeologic Study by Reimer Associates, March, 1988.
- o Geotechnical Investigation by Kleinfelder, March, 1988.
- o Half Moon Bay Land Use Plan certified September 24, 1985.

PTI: 3,4,5
0841P

EXHIBIT NO.	3
APPLICATION NO.	1-99-054-A1
(Page 1 of 29)	

STAFF RECOMMENDATION:

The staff recommends that the Commission adopt the following resolution:

I. Approval with Conditions.

The Commission hereby grants a permit, subject to the conditions below, for the proposed development on the grounds that the development will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976, 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 of the Coastal Act, and will not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act.

II. Standard Conditions.

See Exhibit A.

III. Special Conditions.

1. THE APPROVAL OF THIS PROJECT IS A PHASED APPROVAL.

Phase I consists of the condominium subdivision and all related improvements, the interim domestic well water system, water and sewer lines, street improvements, perimeter fencing and abandonment of test well No. 2. Prior to Phase II improvements, the permittee shall submit evidence of completion of Phase I improvements for the Executive Director's review and approval.

Phase II consists of the construction of condominium units on lots 1,3,4,5,6,7,8, the recreation building, tot lot improvements, and associated garages, carports, guest parking and landscaping, and fire lanes. Prior to Phase III improvements, the permittee shall submit evidence of completion of Phase II improvements for the Executive Director's review and approval.

Phase III consists of the construction of condominium units on lots 9,10,11,12,13,14,15,2, and associated garages, carports, guest parking and landscaping, and fire lanes.

2. Approval of this permit authorizes the drilling of two test wells, the conversion of test well No. 1 to an interim domestic well water system and the abandonment of test well No. 2 and the existing agricultural well in accord with condition 3.(b). (See next page). This approval does not authorize (future) individual wells for any of the units or lots created as part of this permit.

III. Special Conditions (continued)

2. (continued)

This approval does not authorize continued use of the well water system for landscape watering after the connection to public water supply. Such continuation of use requires an amendment to this permit and must be accompanied by approval of appropriate agencies and by hydrological well testing between now (October, 1988) and then which demonstrates that pumping is not resulting in surface reductions in Pilarcitos and Arroyo Leon Creeks (as recommended by the Department of Fish and Game, see Exhibit B).

3. PRIOR TO TRANSMITTAL OF THE PERMIT, the permittee shall execute and record a deed restriction covering each of the 120 approved condominium units and 5 lots, in a form and content acceptable to the Executive Director, which shall provide:

- (a) (1) That the permittee and successors in interest understand that the installation of an interim domestic well water system may be subject to potential hazards due to contamination from bacteria, iron, manganese and, or nitrates, and therefore, the interim well water may not be suitable for domestic use without treatment, now or in the future, and the applicant and successors in interest assume the liability from these potential hazards; and (2) that the permittee and successors in interest unconditionally waive any claim of liability on the part of the Commission and agree to indemnify and hold harmless the Commission and its advisors relative to the Commission's approval of the project for any damage due to potential contamination, lack of water supply, or failure of water supply equipment. The document shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens.
- (b) That the permittee and successors in interest understand the conversion of test well No. 1 to an interim domestic well water system within this subdivision, in the City of Half Moon Bay, is on an interim basis pending the availability of imported water supply which is scheduled to begin flowing in 1992; and that the interim water well must be drilled, installed and later abandoned in adherence to specified health and safety criteria established by the City of Half Moon Bay and the County of San Mateo. Test well No. 2 must also be abandoned in adherence to the City and County Health and safety criteria.
- (c) That each individual lot shall connect to and use the public water supply of Coastside County Water District within 30 days of availability. When all lots are connected to Coastside County Water District, the permittee is no longer subject to the provisions in Special Condition 3.(a).(1).

III. Special Conditions (continued)

4. PRIOR TO TRANSMITTAL OF THE PERMIT, the permittee shall submit for Executive Director's and Coastal Commission legal counsel's review and approval, a copy of the final organizational documents for the interim domestic well water system (interim domestic well water system agreement/mutual water company formation). The submittal shall include evidence of review and approval by the City of Half Moon Bay, the San Mateo County Department of Environmental Health, and the Coastside County Water District.
5. PRIOR TO TRANSMITTAL OF THE PERMIT, the permittee shall submit for the Executive Director's review and approval final plans for the interim domestic well water system. The plans shall include the abandonment of test well No. 2. Evidence of review and approval by (1) Coastside County Water District, (2) City of Half Moon Bay, (3) San Mateo County Department of Environmental Health, and (4) Sewer Authority Midcoastside shall accompany the submittal.
6. PRIOR TO COMMENCEMENT OF GRADING OR PHASE I IMPROVEMENTS, the permittee shall submit the following for the Executive Director's review and approval:
 - A. Final grading including stockpiling, erosion control plans, drainage plans and plans for the perimeter fencing. The final grading, drainage and erosion control plans shall be prepared in accord with the recommendations contained in the "Geotechnical Investigation" by Kleinfelder, March, 1988. Plans shall also include written approval by the City of Half Moon Bay Building Department. The erosion control plans shall include the entire construction period and include plans for winterization. Plants and grasses shall be native species. The grading plans shall include the location of a staging area for project equipment and materials. Grading plans shall also note the off-site location of the fill material. Evidence of review and approval by the geotechnical engineer shall accompany the submittal. The fencing shall be installed prior to the occupancy of Phase II units or in accord with a timetable approved by the Executive Director.
 - B. Final plans for all street improvements (internal streets, Purissima Street and Fourth Avenue Extension) including curbs, gutters and sidewalks. Improvement plans shall include drainage facilities and shall be accompanied by written approval from the Half Moon Bay City Engineer. The encroachment permit from the City shall also accompany this submittal.
 - C. Final plans for utilities including locations of water and sewer lines. Evidence of review and approval by Coastside County Water District shall accompany the water service plans.

III. Special Conditions (continued)

7. PRIOR TO COMMENCEMENT OF CONSTRUCTION OF PHASE II IMPROVEMENTS, the permittee shall submit the following for the Executive Director's review and approval:

A. Final project plans including foundation, site and floor plans, and elevations. The foundation plans shall include evidence of review and approval by the project's geotechnical engineer. Exterior materials and finishes shall be of earthen-tone colors. Exterior lighting directly visible from Highway 1 is not authorized by this permit.

Minor changes to the approved condominium plans which do not affect the intensity of use may be approved by the Executive Director.

B. Final landscape plans. The landscape plans shall provide maximum screening of the approved buildings from Highway 1. Evidence of approval by the City of Half Moon Bay shall accompany the submittal. Landscape plantings and trees shall be native species or drought-resistant species. Plant materials associated with Phase II improvements shall be installed prior to occupancy of Phase II units and plants materials associated with Phase III improvements shall be installed prior to occupancy of Phase III units; or landscape plantings may be installed in accord with a plan for planting along with a timetable approved by the Executive Director. All landscape plantings shall be permanently maintained in good condition.

C. A copy of the proposed final map. A copy of the recorded final map shall be submitted to the Executive Director prior to the commencement of Phase II improvements.

D. A copy of the final CC&R's governing the approved subdivision.

IV. Findings and Declarations.

The Commission hereby finds and declares:

1. Project Description and Background

The proposed project consists of a subdivision and construction of a 120-unit condominium project, including a tot lot, recreation building, carports, garages, parking areas, street improvements, two test wells, conversion of one to an interim water well, an interim domestic well water system, utilities, grading, and fencing. The project location is 750 Purissima Street in the City of Half Moon Bay, San Mateo County. The project site is a vacant, flat, 10.5-acre parcel located between Highway 1 and Purissima Street. The project

Project Description and Background (continued)

site is bounded on the north by Cunha Elementary School and the Half Moon Bay Library, and on the south by single-family and duplex residential development. To the east, across Purissima Street, is a combination of commercial and single-family residential uses. Vegetation on the site is primarily grasses and weeds. Over 20 years ago the site was in agricultural use but it has only been used intermittently for agricultural purposes since then.

The proposed subdivision would create 120 airspace condominium units and 5 lots that would be used as common areas. Lots A and B would be used for vehicular circulation and parking. Lots C and D would be used as open space. Lot E would be used for recreation, a tot lot and a recreation building.

A total of 120 condominium units would be contained in 15 two-story buildings of 8 units each. Five different types of units are proposed ranging in size from one bedroom, one bathroom with 706 square feet of living area to two bedrooms, two and one-half bathrooms with 1,215 square feet of living area. Of the 120 condominium units proposed, 15 will be one-bedroom units and 105 will be two-bedroom units. The applicant prefers to reserve the right to build townhouse type or flat type units depending on market conditions.

The project includes an interim domestic well water system. The project well water system would be owned and operated by the homeowner's association. Well water would be used for domestic purposes only, fire protection would be provided by Coastside County Water District (CCWD). The well water system would consist of one well, an underground 60,000-gallon storage tank, a pressure tank, a treatment system and a delivery system. The applicant has contracted with Coastside County Water District to purchase the necessary water connections to the Crystal Springs Pipeline Project.

The applicant is proposing 291 parking spaces; 120 would be in the form of attached garages (8 per building). There would be 120 detached carports and 51 uncovered guest parking spaces. The amount of parking spaces proposed meets the City's parking requirements. In addition, the City required the installation of a solid 6-foot high perimeter fencing.

In August, 1984, the City Council rezoned the subject property from a Planned Unit Development with a maximum of 94 units to a Planned Unit Development with a maximum of 120 units. The Land Use Plan allows a density of 8 to 25 units per acre. The density of this project is 11 units per acre as restricted by the 1984 rezoning. The applicant has obtained City approval for the major subdivision, a use permit and a site and design permit.

2.A. Land Use Plan/Development Patterns

The Half Moon Bay Land Use Plan (LUP) has been approved by the City. The LUP designates the property as Residential-High Density, 8 to 25 units per acre. The proposed density of 11 dwelling units per acre is consistent with the LUP. The proposed project is consistent with the existing development pattern in the area and constitutes residential infill.

All municipal services, water lines, sewer lines, storm drains, streets, underground utilities, curbs, gutters and sidewalks are existing. Water lines are available in the street in front of the proposed subdivision. However, there is currently a water moratorium due to lack of additional water within the existing system by Coastside County Water District (CCWD), until completion of the Crystal Springs pipeline project. The projected pipeline completion date is 1992. The existing water lines are used for fire protection services only and not for residential development. The applicant is proposing an interim domestic well water system to service the 120 proposed condominium units.

The applicant has drilled two test wells in reliance upon City and County approvals. No coastal permits were requested or granted. Well No. 1 will be used as the primary source of supply for the proposed water system and Well No. 2 will be abandoned in accordance with City and County guidelines. An existing agricultural well on the project site has been abandoned.

The City has adopted an Urgency Ordinance (No. 16-86) that sets forth regulations for drilling water wells within the City limits. Approval is also necessary from the San Mateo County Environmental Health Department. The City is currently regulating interim domestic well installations according to their consultant's recommendations and the City's well ordinance.

The Commission has approved 34 interim domestic water wells within the City, 27 of these have been within the Alsace Lorraine subdivision, a subdivision located directly across (west of) Highway 1 from the subject site. The Commission has required all the applicants to connect to a public water system when it becomes available and abandon the interim domestic wells in accord with City and County health department regulations.

Although the Commission has approved 34 interim wells, this application is only the second request for a well water system. (In March, 1988, the Commission approved a well water system and 21 single-family dwellings, 3-88-10 Inwood Corporation). The applicant has submitted engineered plans for the water system and preliminary approvals from the City of Half Moon Bay and the San Mateo County Health Department. The interim well water system will service the 120 condominium units proposed. The system includes one well (Well No. 1), a 60,000-gallon underground storage tank, a pressure tank, a treatment system, a source of back-up power, a back-up pump and a distribution system. When the subdivision is hooked up to Coastside County Water District (CCWD), the well system would be abandoned. The applicant would like the option of keeping the well to use for landscape watering. The condominium units are to be constructed with underground lateral connections in place to connect into CCWD's lines in Purissima Street.

2.B. GROUNDWATER EXTRACTION - BACKGROUND

Groundwater is water pumped from underground repositories called aquifers. An aquifer is a body of rock or sediment that contains sufficient saturated permeable material to conduct groundwater and to yield economically significant quantities of water to wells and springs. In general, water will account for 15-20% of the volume of the deposit. As an example, if the aquifer contains 1,000 cubic feet of material, it will contain 150-200 cubic feet of water. An aquifer can be unconfined, i.e., composed of groundwater that has a water table and is free to rise and fall with changes in volume of stored water; or confined, where the upper surface is sufficiently impervious to sever connection except at the intake and the groundwater cannot move except at a negligible rate.

RECHARGE OF AQUIFERS

Aquifers are naturally replenished and, if pumping does not exceed replenishment (recharge), will remain viable. The sources of recharge include the percolation of rainfall on the surface above the aquifer, stream flow, and contributions from sub-surface inflow. The potential for recharge (amount and rate of recharge) depends on the following factors:

1. Permeability. Is the capacity of a rock to transmit a fluid. The degree of permeability depends upon the size and shape of interstitial pore spaces and their interconnectedness.
2. Topography and Land Use. The more impervious the surface = more runoff = less recharge. Steep, small watersheds, and the level of urban development can result in too-rapid runoff. If runoff is too rapid, the surface water will not have a full opportunity to percolate down into the aquifer, but will flow over the surface above the aquifer to run off into the sea.
3. Local Geology. Geologic structures, including fault and fracture zones also may provide valuable conduits from the surface down to the aquifer thus giving surface flows a "fast track" to the water bearing strata. On the other hand, displaced strata may block recharge by creating an impermeable geologic barrier to subsurface water flow.
4. Climate. The amount of "new" water available for recharge depends, in part, on the amount, intensity and timing of rainfall, and the evapotranspiration rate, (i.e., how much water, otherwise available for recharge, evaporates at the surface.)

5. Size of the Aquifer. The thickness and extent of the water bearing band depends on porosity and permeability. All other things being equal, the thicker the aquifer, the more water it will soak up and retain in storage. If an aquifer remains "full", there is no available space for additional recharge.
6. Soils. Clay type soils will impede deep percolation and sandy soil will enhance deep percolation. Soil compaction, and, the interaction of rainfall and temperature on local surfaces, will also affect aquifer recharge.

PROBLEMS WITH AQUIFERS

Common problems that impair the functioning of groundwater systems include overdrafting and pollution of the aquifer. Overdrafts occur when the extraction of water exceeds recharge -- more is taken out than is put back in. Failure of the water supply will eventually occur if this happens. The failure may affect the entire aquifer or be localized if, for example, wells are located too close to one another given the permeability of the water-bearing strata. In confined aquifers, if overdrafting occurs, the aquifer may never fully recover from the experience even if pumping is stopped or decreased. This is because the materials which make up the aquifer may compress and collapse as the water is drawn out, thus decreasing the spaces between the particles where water can be stored. Subsidence of the land may also occur.

Saltwater intrusion is another problem which can occur when coastal aquifers are overdrafted. This problem occurs when the aquifer is near or below sea level. In nature, there is a hydraulic gradient that slopes seaward. Because water flows "downhill", the seawater is prevented from flowing inland, hence, a hydrostatic barrier is created, thus barring a substantial migration of saltwater into the onshore portion of the aquifer. If the freshwater flows are decreased too much, the hydrostatic barrier retreats landward and saltwater flows into the aquifer -- replacing freshwater and contaminating the aquifer.

Once saltwater intrusion has occurred, it is generally considered to be irreversible. Theoretically, some reversal could occur if the area were to be flushed with immense amounts of freshwater. This procedure is, however, usually impractical or economically infeasible.

An aquifer can become polluted, thus causing the water supply to become unusable. Aquifers become polluted in a variety of ways. Agricultural practices can create a problem through the overuse of nitrate fertilizers, pesticides, herbicides, and stockyard operations. Poorly maintained or improperly abandoned wells may provide a conduit for pollutants to enter the aquifer. Leaking septic systems or sewer lines and toxic "spills" may also

pollute underground water systems. Aquifers that lie closer to the surface and are overlain with permeable soils seem to be the most susceptible to pollution from the causes indicated above although relatively deep wells may also be polluted, particularly if the wells themselves are improperly sealed or maintained. As with saltwater intrusion, once an aquifer is significantly polluted, it becomes very difficult -- if not impossible -- to decontaminate it in a timely manner.

ASSESSING THE POTENTIAL PRODUCTIVITY OF AN AQUIFER

A reliable source of clean, abundant water is of value to urban users, agriculture and the maintenance of natural habitats. As discussed in the preceding paragraphs, underground aquifers may provide one source of this water. This resource must, however, be carefully assessed and managed in order to avoid saltwater intrusion, failure of supply or pollution. The technology exists to prevent these problems by determining the "safe yield" of the aquifer (safe yield is the amount of water which can be continuously withdrawn from a groundwater basin without causing adverse effect), testing the quality of the water, properly developing and maintaining wells and avoiding practices which will pollute the aquifer.

The safe yield of an aquifer can usually be accurately projected by hydrogeologic studies. These studies determine the physical dimensions of the aquifer -- geographic size, depth to and thickness of the water-bearing strata -- and the geologic characteristics of the aquifer. Studies will also identify sources of recharge and calculate the rate of recharge of the aquifer based on recharge sources, land use, geographic nature and size of the watershed, and aquifer storage potential. The safe rate of withdrawal of water from the aquifer can be projected by "stress" test pumping of wells. Studies can also calculate other factors which affect safe yield such as weather cycles (drought/flood), future development plans for the watershed which will affect runoff and the needs of natural systems dependent on the aquifer for all or part of their water source.

After a safe yield figure is developed (safe yield is usually expressed in acre feet per year - one acre foot is equal to 325,851 gallons of water), an on-going monitoring program of productive wells and nearby observation wells will assure that the safe yield is not exceeded. For coastal aquifers, a series of observation wells near the shoreline is prudent in order to provide an early warning of saltwater intrusion. Scheduled testing of water quality and proper well maintenance is also part of a proper groundwater management program.

2.C. THE "HALF MOON BAY AQUIFER"

The aquifer which lies under the Half Moon Bay area (and under the applicant's site) is located beneath the coastal terrace and offshore Half Moon Bay. It is, according to information from the United States Geological Survey (USGS), generally bounded by the topographical rise to the east, Montara Point to the north, Lobitos Creek to the south and the Seal Cove Fault to the west. Because the terrace deposits are warped, part of the onshore portion of the aquifer is below sea level.

The aquifer extends under the sea at Half Moon Bay. Water drawn from this portion of the aquifer will likely be salty and therefore unusable. The onshore portion of the aquifer is divided into three categories: 1) on the coastal terrace but below sea-level; 2) on the coastal terrace and below sea-level; and, 3) above the coastal terrace and above sea-level. The aquifer water from the onshore portion is fresh.

According to Geoconsultants ("Ground-Water Assessment, Half Moon Bay", June, 1987) the Half Moon Aquifer is divided into five sub-basins based on surface drainage divides. These sub-basins are Arroyo de en Medio to Frenchman's Creek, Frenchman's Creek, Pilarcitos Creek, Pilarcitos Creek to Canada Verde and Canada Verde. The subject site is within the Pilarcitos Creek sub-basin.

An important consideration is the adequacy of this aquifer to sustain the cumulative effects of such extraction. Although groundwater is stored in the water bearing terrace deposits, the ultimate availability is determined by the amount of recharge from rainfall and streamflow on a long-term basis. According to Geoconsultants, the aquifer as a whole appears to be essentially unconfined. In the Half Moon Bay area, average annual precipitation is about 26 inches and potential evapotranspiration is about 33 inches annually. The amount of this water (rainfall/surface flows) which will percolate down to the aquifer will depend on:

1. The permeability of the soil above the aquifer and of the water-bearing strata itself. In the case of this aquifer, the undeveloped portion of the watershed contains a variety of reasonably permeable soil types. The upper portion of the aquifer has less ability to store percolated water, the lower portion -- sands and gravel -- a better capacity.
2. The level of runoff. Water which runs off quickly is lost to the aquifer because it has no opportunity to percolate into the soil. Very little of the rain which falls or collects in the urbanized portion of the watershed will find its way into the aquifer. Most of this water will runoff or be collected in storm drains and discharged into the sea. Stream flows which reach the sea are similarly lost.

3. The rate of rainfall will also affect the quantity of water available to recharge the aquifer. Maximum recharge potential from rainfall occurs when the gross amount of annual precipitation is spaced so that no more rain falls than can be absorbed by the soil -- thus no loss to runoff. In the Half Moon Bay area, virtually all of the 26 inches of annual precipitation falls during the six months between October-May.

Occasional heavy rainfalls in a twenty-four hour period and extended periods of moderate rainfall result in some loss to runoff in this aquifer. Sloping to steep topography and thin soils in some portions of the sub-unit also contribute to loss from runoff of the precipitation.

4. Evapotranspiration rates reduce water supplies available for recharge. This is water which evaporates at the surface of the land or body of water. Obviously hot, arid areas will have higher rates of evapotranspiration than humid cooler areas. The amount and variety of vegetation is also a factor. According to the State Water Resources Control Board, in the natural, climatological setting of the Half Moon Bay area, an estimated 35 percent of the rainfall will be lost to evapotranspiration. As the area is urbanized, the percentage will increase.

According to Groundwater by Freeze & Cherry, 1979, the safe yield of a groundwater basin is the amount of water that can be withdrawn from it annually without producing an undesired result. Any withdrawal in excess of safe yield is an overdraft.

"Some authors have suggested that the safe yield of a groundwater basin be defined as the annual extraction of water that does not exceed the average annual groundwater recharge. This concept is not correct. (Emphasis added.) Major groundwater development may significantly change the recharge-discharge regime as a function of time. Clearly, the basin yield depends both on the manner in which the effects of withdrawal are transmitted through the aquifers and on the changes in rates of groundwater recharge and discharge induced by the withdrawals. Each increase is initially balanced by a change in storage, which in an unconfined aquifer takes the form of an immediate water-table decline."

Freeze and Cherry also state that if pumping rates are allowed to increase indefinitely, an unstable situation may arise where the declining water table reaches a depth below which the maximum rate of groundwater recharge can no longer be sustained. After this point in time the same annual precipitation rate no longer provides the same percentage of infiltration to the water table. Evapotranspiration during soil-moisture-redistribution periods now takes more of the infiltrated rainfall before it has a chance to percolate down to the groundwater zone. Freeze and Cherry continue stating, the water

table reaches a depth below which no stable recharge rate can be maintained, the maximum available rate of induced recharge is attained and from that time on, it is impossible for the basin to supply increased rates of withdrawal. The only source lies in an increased rate of change of storage that manifests itself in rapidly declining water tables. Pumping rates can no longer be maintained at original levels. Production rates must allow for a factor of safety and must therefore be somewhat less than the maximum stable basin yield.

In an unconfined aquifer near the ocean, fresh groundwater occurs as a lens above the heavier sea water. The saline fluid may extend inland for about a mile. Because of the difference in density, the depth of fresh water below sea level is approximately equal to 40 times the height of the water table above sea level. If the water table is lowered by pumping, the cone of depression around the well is reflected in a rise of the boundary between fresh and salt water. Each meter decline of the water table, will cause a 40-meter rise of the lower boundary of the lens to maintain the balance. Heavy pumping can produce such a large cone of depression that salt-water intrusion will occur. Also, cones of depression from neighboring wells will eventually intersect if withdrawals continue to exceed recharge. The largest and deepest wells will draw water from below the shallower wells, taking away their water supply. Many government agencies and consultants on groundwater management are attempting to define the safe yield of major aquifers and to control pumping rates on a basis of a quantitative prediction of how each new withdrawal will affect the whole groundwater system.

SUMMARY

Development pressures in the Half Moon Bay area and the lack of water hook-ups due to the continuing moratorium by Coastside County Water District have led to a substantial increase in the number of well permit requests within the City of Half Moon Bay. In an attempt to evaluate the cumulative impacts of such development, Commission staff has plotted 93 wells applied for or permitted in the City of Half Moon Bay. This represents a high density of domestic water wells in an area designed and approved for full urban services.

The Crystal Springs pipeline project was approved by San Mateo County. The decision was appealed to the Coastal Commission; however, the Commission ruled the appeal raised no substantial issues and the local decision stands. The final environmental impact report for the Crystal Springs pipeline project states that the current safe yield of the CCWD's existing sources of water supply falls short of demand. The EIR further states that under present conditions the CCWD's safe yield capabilities fall at least 50 million gallons below normal production requirements, and may fall by an additional 100 million gallons per year after 1984, when the District's allotment from the Pilarcitos Reservoir is scheduled to return to its former level.

Half Moon Bay Land Use Plan Public Works Policy 10-14(c) states that if new or increased well production is proposed to increase supply, the City shall require the amount pumped to be limited to a safe yield factor which will not impact water-dependent sensitive habitats, riparian habitats, marshes, and agricultural water use. This policy is in reference to public works projects. Individual water wells were not anticipated in the LUP. The LUP policies are directed to the provision of public services by public water systems rather than individual water wells or private water systems.

In a letter to the Commission dated October 29, 1986, Mr. William Ellis, Consultant in Groundwater & Geology, states, "Basically, prior hydrogeologic studies notwithstanding, the quantity of groundwater which can be withdrawn safely from wells in the Half Moon Bay area, and the most prudent manner of such withdrawal, are unknown. . . . An in-depth assessment of groundwater resources should be undertaken in the near future to guide and ensure intelligent continued development of these resources."

In September, 1986, the City adopted an urgency ordinance for the installation of water wells for domestic purposes. The City hired a consultant, Geoconsultants, Inc., to develop a long-term groundwater management program for the City. The study includes an evaluation to assess the potential safe-yield of the aquifer. This program is very important because what the safe yield of this aquifer really is, exactly what sub-surface water source supplies the creek, and what impact climatological cycles may have on the aquifer and creek are unknown. No competent studies exist to date which can even provide positive assurance that existing pumping is within the parameters of safe yield over the long run. In order to be effective, the needed study must include annual monitoring for the following two years. Annually, Geoconsultants will prepare a report summarizing the groundwater conditions for the year. They anticipate that the program will, by the second year, indicate trends in the extent of development of the available groundwater resources.

Geoconsultants prepared a "Ground-Water Assessment, Half Moon Bay" in June, 1987. This initial report summarizes the present hydrogeologic conditions as derived from existing information. Implementation of the report will provide for the gathering of new data and the periodic review and revision of the management practices. The major long-term objectives of the management plan are summarized below. According to Geoconsultants, these objectives should be undertaken annually, with the progress in one year serving as the basis for defining the specific tasks of the next.

1. Determine the perennial yield of the five subbasins available to the City.
2. Evaluate changes in ground-water storage.
3. Determine the availability of surface water from both a hydrologic and legal standpoint, so that any potential reduction of streamflow by increased ground-water pumpage can be evaluated.

4. Monitor surface water and ground-water quality.
5. Project future water requirements and develop plans for meeting such demand in both a feasible and economical manner.

In a letter to the Commission, Half Moon Bay staff stated that, "the City retained the firm of Geoconsultants to determine if sufficient and potable groundwater was available to allow a limited number of single-family houses to be constructed in the area in conjunction with domestic wells. That study has been completed and has determined that 178 domestic wells, drilled in adherence to specified health and safety criteria, would be appropriate on an interim basis pending the availability of imported water, which is scheduled to begin flowing in 1990." (Parker, A., 6/9/87) Subsequently, Geoconsultants, Inc. has revised their estimates of safe yield for the five sub-basins within the City. According to the consultant, the perennial yield for the Pilarcitos sub-basin is 1,813 acre-feet.

In a letter to the City dated August 19, 1988, Brian Hunter, Regional Manager, for the Department of Fish and Game (DF&G) reviewed additional letters and reports concerning the proposed project, (see Exhibit B). DF&G reassessed the effects of the project on fish and wildlife and stated that they did not object to the certification of a negative declaration and issuance of permits for the project as long as such permits were conditioned with the following:

- a) The groundwater system will not be utilized after the end of 1991, or
- b) groundwater pumping will be permitted only after 1991 if hydrological well testing between now and the end of 1991 demonstrates the pumping is not resulting in surface flow reductions in Pilarcitos and Arroyo Leon creeks.

Based on the information from Geoconsultants, Inc. it is appropriate to allow the use of the well water system until the public water supply becomes available. The applicant has expressed interest in the possibility of using well water after the connection to the public water supply for landscape watering. This continuation is not authorized by this approval and would require an amendment of this permit. Such a request would need to be accompanied by hydrological well testing between now and then which would demonstrate the pumping is not resulting in surface flow reductions in Pilarcitos and Arroyo Leon Creeks as recommended by DF&G.

It is important to require review and approval of the final organizational documents (well water system agreement/mutual water company formation), as well as a deed restriction to require connection and use of public water supply (Coastside County Water District), when it becomes available and waive the liability on the part of the Commission for water quality and supply. As conditioned, to allow for an interim domestic well water system for 120 units, until a permanent water supply becomes available, will not have an adverse impact on coastal resources as set forth in Coastal Act Section 30250.

3. Erosion/Geologic Stability

The Coastal Act contains policies to assure that new development does not create erosion, and to minimize risks to life and property. The following Coastal Act policies are applicable:

Section 30253

New Development shall:

(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

The approved LUP also contains policies regarding geotechnical hazards and erosion control.

Preliminary grading plans were submitted with the application. Approximately 1500 cubic yards of cut and 30,500 cubic yards of fill is proposed. Of the 30,500 cubic yards of fill, 29,000 cubic yards of soil will be imported to the site. A "Geotechnical Investigation" was prepared for the property by Kleinfelder, March, 1988. The report includes recommendations for site earthwork/grading, drainage, foundations and pavement areas. The findings in the report conclude that,

In summary, it is our opinion that the site is suitable for the proposed development provided that our recommendations are used in design and construction of the project. Building loads can be adequately supported by spread footings or post-tensioned slabs-on-grade. With proper pretreatment the subgrade soils will be suitable for support of slabs-on-grade and pavements.

The final plans should be reviewed by the geotechnical engineer for compliance with the recommendations contained in the "Geotechnical Investigation".

As conditioned, to require final project plans including final engineered grading, foundation, drainage and erosion control plans, the project can be found consistent with Coastal Act Section 30253 and LUP geotechnical and erosion hazard policies.

4. Traffic/Circulation Patterns

The major impact to public services resulting from the proposed development is the increase in traffic generated by the project. Coastal Act Section 30252 states in part that the location and amount of new development should maintain and enhance public access to the coast. The project site is located on the inland side of Highway 1 between Highway 1 and Purissima Street. Access to the site is from Purissima Street and also from Fourth Avenue Extension. No access is proposed from Highway 1. Highway 1 is a major coastal access route to numerous state beaches and coastal recreation activities in San Mateo County and Half Moon Bay. Peak recreational traffic during the weekends and holiday periods may compete and conflict with local traffic generated by the proposed residential use.

Traffic recommendations for the proposed project were made by Brian Kangas Foulk, Consulting Engineers, in a letter dated April 19, 1988. The letter stated that traffic volumes generated by the proposal have been included in traffic studies for the City of Half Moon Bay Circulation Element (Phase I). The letter recommended that Fourth Avenue from the project property line to Filbert Street be widened and sidewalks be constructed; and that Purissima Street along the project frontage be improved by constructing one-half street width and curbs, gutters and sidewalks. The City also required improvements to Purissima Street and Fourth Avenue as conditions of their approval. The applicant has submitted preliminary street improvement plans. An encroachment permit will be required by the City.

Conditions of this approval require the submittal of the encroachment permit and final plans which have been approved by the Half Moon Bay City Engineer. The traffic mitigation measures proposed and required as part of this project appear to mitigate the traffic impacts of the proposed development. As conditioned, the project is consistent with Section 30252 of the Coastal Act.

5. Scenic Resources

Section 30251 of the Coastal Act requires that the scenic and visual qualities of coastal areas be protected and that permitting development be sited and designed to protect views to and along the coast.

Approved LUP Policy 7-11 states:

New development along primary access routes from Highway 1 to the beach, as designated on the Land Use Plan Map, shall be designed and sited so as to maintain and enhance the scenic quality of such routes, including building setbacks, maintenance of low height of structures, and landscaping which establishes a scenic gateway and corridor.

The rear portion of the project fronts along Highway 1. The City required the installation of a solid, 6-foot high perimeter fencing prior to construction. The proposed buildings, 15 two-story structures containing eight units each, are of a contemporary design with hardboard and wood shingle siding and composition shingle roofing. Preliminary landscaping plans were submitted with the application which include trees along the entire Highway 1 frontage. The final landscaping plans should emphasize native and drought resistant plantings. Conditions of approval require the use of earthen-tone exterior materials and finishes and that exterior lighting not be directly visible from Highway 1.

As conditioned, the proposed development is consistent with Section 30251 of the Coastal Act and LUP visual resource policies as the structures are visually compatible with the surrounding residential area and will not significantly alter the view from Highway 1.

6. LCP/CEQA

The Half Moon Bay Land Use Plan (LUP) was certified by the Commission on September 24, 1985, and adopted by the City. The LUP contains policies regarding locating new development, public works facilities and resource protection policies.

Half Moon Bay LUP Section 9.1.2 and Coastal Act Section 30250(a) states, in part, new residential development shall be located within developed areas able to accommodate it, or where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively on coastal resources.

The following LUP development, public works and resource protection policies are applicable:

Policy 9-2

The City shall monitor annually the rate of build-out in categories designated for development. If the rate of build-out exceeds the rate on which the estimates of development potential for Phase I and Phase II in the Plan are based, further permits for development or land divisions shall not be issued outside existing subdivisions until a revised estimate of development potential has been made. At that time the City shall establish a maximum number of development permits to be granted each year in accordance with expected rates of build-out and service capacities. No permit for development shall be issued unless a finding is made that such development can be served with water, sewer, schools, and road facilities, including such improvements as are provided with the development. (See LUP Table 9.3, p. 132).

Policy 9-4

All new development, other than development on parcels designated Urban Reserve or Open Space Reserve on the Land Use Plan Map permitted while such designations are effective, shall have available water and sewer services and shall be accessed from a public street or shall have access over private streets to a public street. Prior to issuance of a development permit, the Planning Commission or City Council shall make the finding that adequate services and resources will be available to serve the proposed development and that such development is located within and consistent with the policies applicable to such an area designated for development. The applicant shall assume all responsibility for costs incurred in the service extensions or improvements that are required as a result of the proposed project, or such share as shall be provided if such project would participate in an improvement or assessment district. Lack of available services or resources shall be grounds for denial of the project or reduction in the density otherwise indicated in the Land Use Plan. (See LUP Table 10.3, p. 189). (Emphasis added.)

Policy 10-13

The City will support and require reservation of water supplies for each priority land use in the Plan, as indicated on Table 10.3 (p. 189) for build-out, and shall monitor and limit building permits accordingly. The amount to be reserved for each phase of water supply development shall be the same percentage of capacity for priority uses as that needed at build-out, until a determination is made that a priority use need is satisfied by the available reservation.

Policy 10-14

If new or increased well production is proposed to increase supply, the City shall require that:

- (b) Wells are installed under inspection according to the requirements of the State and County Departments of Public Health.
- (c) The amount pumped be limited to a safe yield factor which will not impact water-dependent sensitive habitats, riparian habitats, marshes, and agricultural water use.
- (d) Base the safe yield and pumping restriction on studies conducted by a person agreed-upon by the City and the applicant which shall (1) prior to the granting of the permit, examine the geologic and hydrologic conditions of the site to determine a preliminary safe yield which will not adversely affect a water-dependent sensitive habitat; (2) during the first year, monitor the impact of the well on groundwater and surface water levels and quality and plant species and animals of water-dependent sensitive habitats to determine if the preliminary safe yield adequately protects the sensitive habitats and what measures should be taken if and when adverse effects occur.

Policy 3-3 Protection of Sensitive Habitats

- (a) Prohibit any land use and/or development which would have significant adverse impacts on sensitive habitat areas.
- (b) Development in areas adjacent to sensitive habitats shall be sited and designed to prevent impacts that could significantly degrade the environmentally sensitive habitats. All uses shall be compatible with the maintenance of biologic productivity of such areas.

In approving the City's Land Use Plan, the Commission found, "in order to ensure that development occurs "in areas able to accommodate it", the Plan has been modified to require appropriate findings of service capabilities at the time of development approval so that the Plan's development phasing program is accurately reflective of the expected capabilities of public services and forecasts of regional population", (emphasis added). The LUP Public Works Component states, "in the case of Half Moon Bay, the amount of growth permitted by the Land Use Plan is substantially likely to occur within the next 20 years, if adequate public works capacity is made available. LUP policies in Section 9 provide for both phasing growth and monitoring annual growth to ensure that it is in line with available services. Policies in this section are intended to assure availability in accordance with estimated needs as projected. Of even greater importance is coordinated phasing of public works capacity increases so that expansion of one service does not result in growth which cannot be accommodated by another."

The subject proposal is for a subdivision and the construction of 120 condominium units and an interim domestic well water system in an area with existing public service infrastructure. There is currently a water moratorium by CCWD, until the completion of the Crystal Springs pipeline project which will bring water to the City. In the interim the City has adopted an urgency ordinance and their consultant has prepared a groundwater management plan. In accord with the recommendations of their consultants, the City is allowing 178 domestic wells, drilled in adherence with health and safety standards, on an interim basis until imported water becomes available.

Because the LUP assumed that water and sewer services to Half Moon Bay would continue to be provided by public utilities, no consideration of individual water wells as a water source was evident in the LUP. Overdrafting of the aquifer will greatly increase the risk of saltwater intrusion, which if unchecked would spoil the capacity of the resource to serve its various users, and perhaps adversely affect CCWD wells which rely on groundwater for part of their supply. Continued reliance on individual domestic water wells and water well systems for residential development could threaten the amounts that might otherwise be available (and are by policy reserved for) the Coastal Act priority uses.

This individual domestic water supply system and wells are located in a neighborhood served by a sewer system. Because the sewer lines represent a potential source of pollution, the danger represented by the combination of a faulty sewer line and an imperfect well seal increase with each additional private well. Given these considerations, it appears that the cumulative affects of individual domestic well drilling presents a substantial risk to water quality. However, limited interim wells will not have adverse impact on coastal resources as set forth by Coastal Act Section 30250.

Coastal Act Section 30250 requires new development to be located in existing developed areas or areas where it will not significantly affect coastal resources. Section 30254 requires that where public works facilities can accommodate only a limited amount of new development, priority be given to coastal dependent land use, and recreation and visitor-serving land uses. The proposed condominium units are in an "existing developed area", but they cannot be accommodated with connections to the public water system at this time. Adequate public services are not entirely available. Section 30254, gives priority land use to coastal dependent land use, recreation and recreation and visitor-serving land use, but not to residential land use.

Overall, the applicant's interim domestic well water system as proposed represents a category of development with cumulative impacts which does not fully meet the intent or the purpose and policies of the certified LUP and the Coastal Act. However, as conditioned, to allow for interim domestic well use until the completion of the Crystal Springs pipeline project, and to require the recordation of a deed restriction restricting well use to this interim period and waiving the liability on the part of the Commission for any damage due to potential contamination or lack of water supply, the proposal can be found consistent with LUP and Coastal Act policies regarding planning and location of new development.

An Environmental Impact Report for this project was certified by the City Planning Commission and City Council in 1984. Slight changes in the project design, changes in traffic volumes, and the introduction of a well system necessitated the production of an additional environmental document.

On July 19, 1988, the City of Half Moon Bay issued a Negative Declaration in accord with the California Environmental Quality Act (CEQA). As conditioned, the proposed project will not have an adverse impact on the environment within the meaning of CEQA.



EXHIBIT-A

RECOMMENDED CONDITIONS

STANDARD CONDITIONS:

1. Notice of Receipt and Acknowledgement. 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 on which the Commission voted on the application. 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. Compliance. All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.
4. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.
5. Inspections. The Commission staff shall be allowed to inspect the site and the development during construction, subject to 24-hour advance notice.
6. 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.
7. 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.

EXHIBIT NO. A

APPLICATION NO.

388-90

Standard Conditions



California Coastal Commission

of particular value to the Department in its reassessment of the effects of this project on fish and wildlife are the following statements:

Mr. Freyer, in his letter of June 17, 1988, states, "It is believed that upstream diversion and not groundwater pumping is the course of the creek's dewatering and that the site's physical, geographical separation from the creeks allows groundwater pumping without causing an inflow condition to occur."

Hydrologist Paul Hofey, in his letter of June 17, 1988, states "Arroyo Leon Creek and Pilarcitos Creek are located approximately 2,000 and 2,300 feet respectively from the project site. The water table at the project site is situated at a lower elevation, or downgradient, from the base flow level of Arroyo Leon Creek." Although the underlying unconfined aquifer at the project site is hydraulically connected to Arroyo Leon Creek and Pilarcitos Creek, the large distances to the creeks and the relative downgradient position of the water well indicate that groundwater usage at the project site would not significantly reduce creek flows. Therefore, it is unlikely the proposed project would adversely affect anadromous fish migration in Arroyo Leon or Pilarcitos creeks."

Woody Trihey, in his August 18, 1988 streamflow duration analysis, states, "If groundwater pumping was significantly affecting base streamflow levels, I would expect to see a decreasing trend in the median monthly streamflow values in recent years. However, such a trend is not evident in the data."

Assuming the experts who have dealt with stream hydrology are correct, it appears that a significant adverse effect on surface flows of Pilarcitos Creek will not occur. However, of more value to our Department for insuring that no significant adverse effects occur to fish and wildlife resources of this area is the statement in Mr. Freyer's June 17, 1988 letter "that the groundwater supply for the project is an interim measure. Presently, the Coastsides County Water District anticipates that their Crystal Springs Water Supply Project will be on line in mid 1990 at which time the project's groundwater system will be abandoned." This is further confined in the July 21, 1988 letter from the Coastsides County Water District that states, "Crystal Springs Pipeline Project as of July 21, 1988 is projected to be completed by the fourth quarter of 1990."

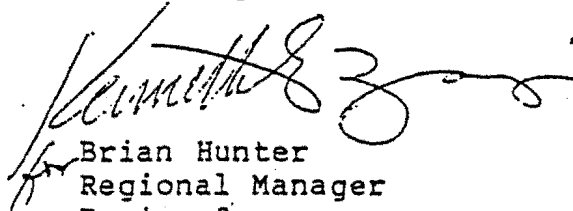
In summary, we would not object to the certification of the Negative Declaration and issuance of permits for this project if such permits are conditioned with the following:

EXHIBIT NO. <i>B</i>
APPLICATION NO. <i>3-88-90</i>
<i>DFTG Letter</i> <i>(2 of 3)</i>
California Coastal Commission

- a) The groundwater system will not be utilized after the end of 1991, or
- b) groundwater pumping will be permitted only after 1991 if hydrological well testing between now and the end of 1991 demonstrates the pumping is not resulting in surface flow reductions in Pilarcitos and Arroyo Leon creeks.

Thank you for the opportunity to comment. If you have any further questions, please contact Theodore Wooster, Environmental Services Supervisor, (707) 944-5524; or Linda Ulmer, Fishery Biologist, (408) 458-0904.

Sincerely,



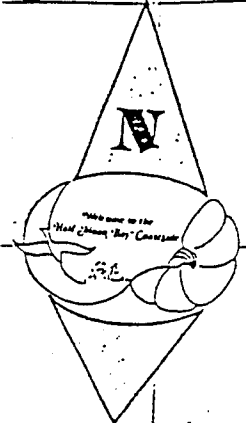
Brian Hunter
Regional Manager
Region 3

cc: ESD

EXHIBIT NO. B
APPLICATION NO. 3-88-90
DFTG Letter (373)
California Coastal Commission

HALF MOON BAY

HALF MOON BAY



MOON

BAY

DUNES BEACH

VENICE BEACH

STATE BEACH

ELMAR BEACH

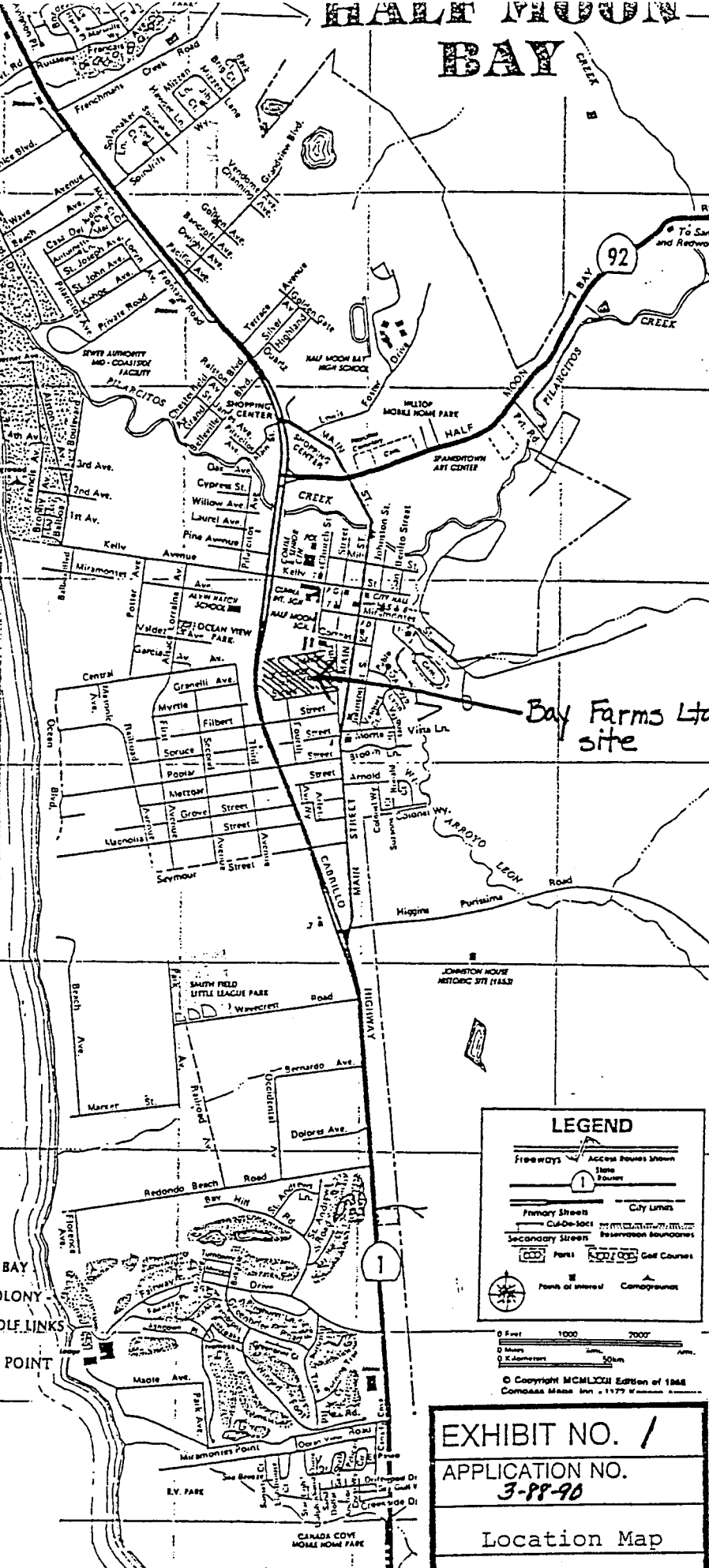
FRANCIS BEACH

HALF MOON BAY

OCEAN COLONY

GOLF LINKS

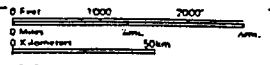
MIRAMONTES POINT



Bay Farms Ltd. site

LEGEND

- Freeways
- Access Routes shown
- State Routes
- City Limits
- Primary Streets
- Secondary Streets
- Parks
- Golf Courses
- Points of Interest
- Campgrounds



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Compass Made In - 1177 of 1968

EXHIBIT NO. /

APPLICATION NO.
3-88-90

Location Map

California Coastal Commission

To Pescadero, Santa Cruz and Monterey

GENERAL NOTES:

OWNER & SUBMITTER:
 BAY PARKS LIMITED
 8 CROWN CANYON COURT - SUITE 100
 SAN RAMON, CALIFORNIA 94583
 PHONE: (415) 820-2120

ENGINEER:
 REIMER ASSOCIATES
 1833 OLD BAYSHORE HIGHWAY SUITE 120
 HALF MOON BAY, CALIFORNIA 94040
 PHONE: (415) 482-1830

ASSESSOR'S PARCEL NUMBER:
 066-182-100

EXISTING USE:
 VACANT, NO SIGNIFICANT VEGETATION

PROPOSED USE:
 1 COMMON AREA LOT OF 18.88 ACRES
 120 AIRSPACE CONDOMINIUM UNITS 113 DUNAJANE

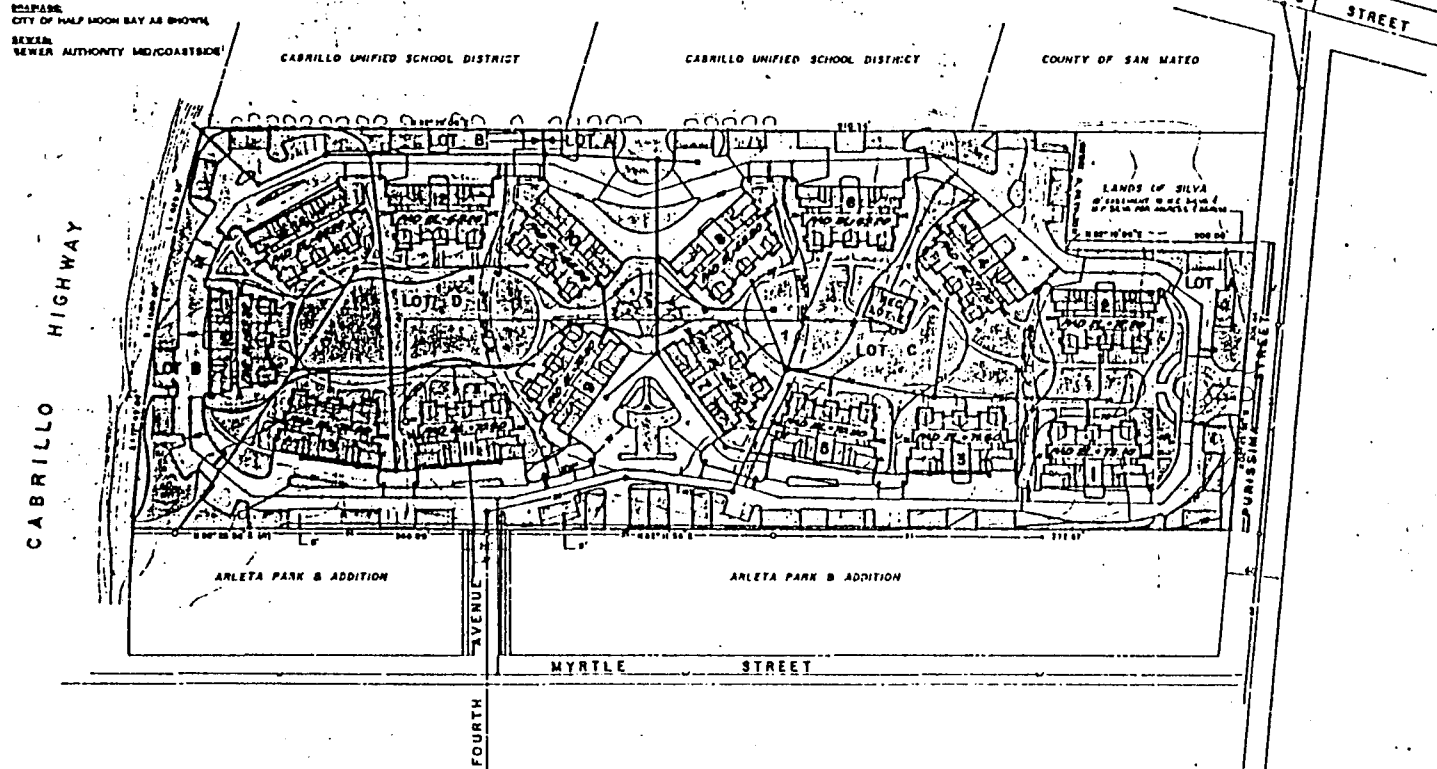
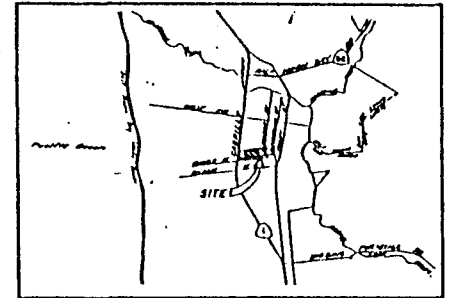
ZONING:
 PLANNED UNIT DEVELOPMENT (P.U.D.)

WATER:
 COASTSIDE COUNTY WATER DISTRICT AS SHOWN /
 INTERIM SUPPLY FROM MUTUAL WATER CO. WELLS

SEWERAGE:
 CITY OF HALF MOON BAY AS SHOWN /
 SEWER: SEWER AUTHORITY MID-COASTSIDE

LEGEND:

- STORM DRAIN
- CATCH BASIN
- CLEANOUT
- SANITARY SEWER W/ MANHOLE
- WATER LINE
- FIRE HYDRANT
- WATER METER
- PROPOSED CONTOURS (1' INTERVALS)
- EXISTING CONTOURS (1' INTERVALS)
- PRIVATE WATER SUPPLY LINE & WATER WELLS



BENCHMARK:
 U.S.G.S. #H211
 DISK IN CONC.
 NORTHERLY OF
 SCHOOL BULE
 ELEVATION 88.

EXHIBIT NO. 3
APPLICATION NO. 3-88-90
<i>Tentative Map</i>
California Coastal Commission

PREPARED UNDER THE DIRECTION OF

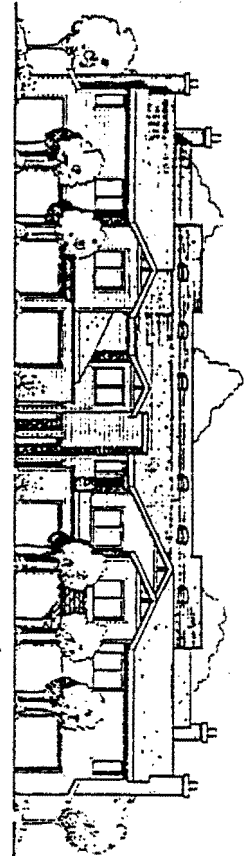
 E. TRACY

DATE: MARCH 1, 1989				
SCALE: 1"=80'				
DESIGNER: MFA				
DRAWN: ART				
CHECKED: [Signature]				
DATE: [Signature]				

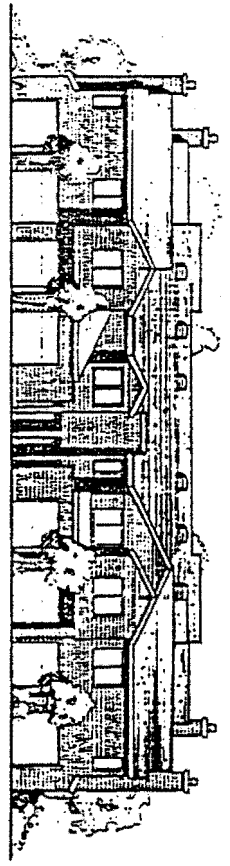
REIMER ASSOCIATES
 CIVIL ENGINEERS - LANDSCAPE ARCHITECTS - URBAN PLANNERS
 1833 Old Bayshore Highway
 Half Moon Bay, California 94040
 (415) 482-1830

TENTATIVE CONDOMINIUM SUBDIVISION MAP
AMESPORT LANDING
 HALF MOON BAY, SAN MATEO COUNTY, CALIFORNIA

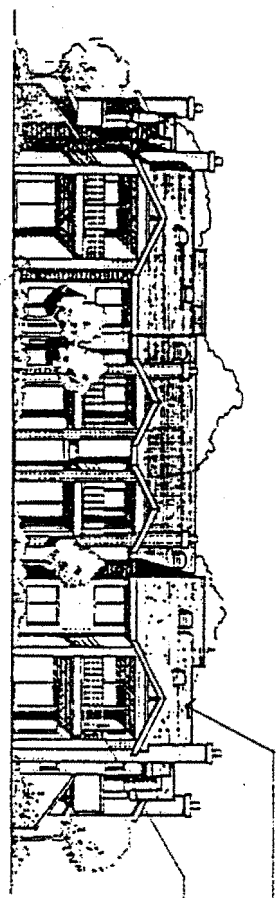
SHEET 1
OF 1 SHEETS
JOB NO.
R-1001



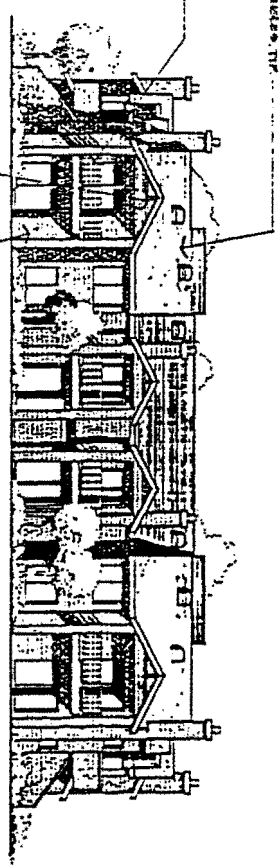
GARAGE SIDE



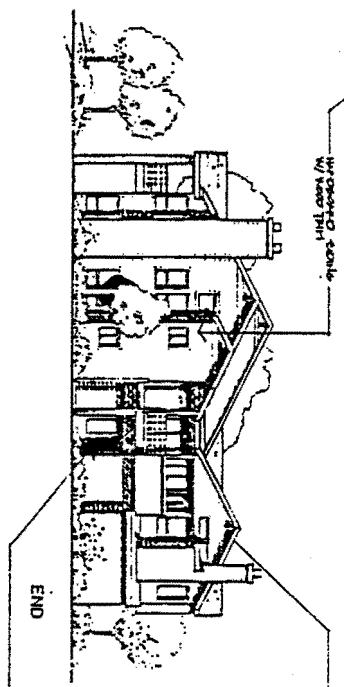
GARAGE SIDE



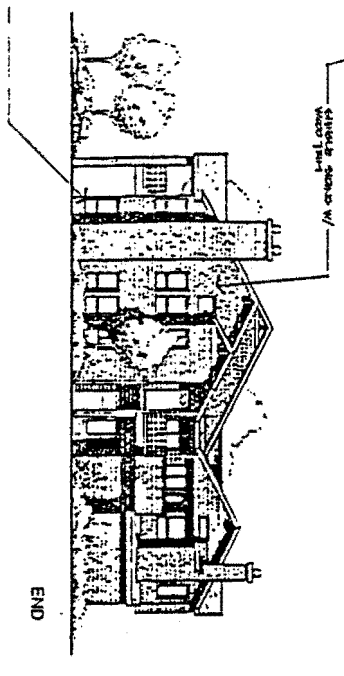
BALCONY SIDE



BALCONY SIDE



END



END

EXHIBIT NO. 4
 APPLICATION NO.
 3-88-90
 Elevations
 California Coastal Commission

512 Sand Hill Circle • Menlo Park, California 94025 • 650-854-5760

EXHIBIT NO.	4
APPLICATION NO.	1-99-054-A1
(Page 1 of 2 pages)	

April 19, 2001

RECEIVED
 APR 21 2001
 CALIFORNIA
 COASTAL COMMISSION

Mr. Chris Kern
 Project Coordinator
 California Coastal Commission
 45 Fremont Street, Suite 2000
 San Francisco, CA 94105

RE: Potential for Effects on Surface Flows in Arroyo Leon and Pilarcitos Creek
 As a Result of Pumpage of the Amesport Landing Well

Dear Mr. Kern:

For the past 20 years I have directed or personally performed groundwater hydrology investigations of coastal San Mateo County for Coastside County Water District (CCWD). This work was performed by my former firm Earth Sciences Associates, Inc., and, subsequent to my leaving the firm 8 years ago, by myself personally, acting as a Consulting Engineering Geologist. This work has included researching and investigating subsurface aquifer conditions in the vicinity of the Amesport Landing Well and Pilarcitos Creek by conducting several independent investigations, as well as the preparation of annual reports presenting information related to the status of ground water conditions in the vicinity of the well from the time of the drilling of the well through June 30, 2000. As a result of this involvement, I believe that I have a good knowledge of subsurface aquifer conditions, and the effects that pumping of the well has had on ground water levels and flow since it was constructed.

I have been asked to address the potential for adverse effects that pumping of the well has had (or might have in the future) on surface water flows in Arroyo Leon and Pilarcitos Creek. By far the largest contributions to flows in these creeks originates from rainfall on hillside areas to the east of the relatively flat coastal terrace area where the well and the town of Half Moon Bay are located. Direct surface runoff into these creeks is supplemented (especially in the summer and fall months) by rising ground water (which has infiltrated into the earth during rainfall) in the form of springs and seeps along the upper reaches of the creek banks. Together, these two sources probably account for more than 95 per cent of total flow in the lower reaches of these creeks. It is possible, when the ground water aquifer underlying the coastal terrace is very full after very wet years, that there is some minor (less than 5 per cent) contribution to surface flow in the lower reaches of Pilarcitos Creek from rising ground water from the coastal aquifer. However, during normal years, this contribution to Pilarcitos Creek surface flow is probably

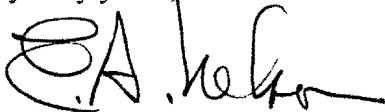
negligible, because the ground water table is lower than the creek bed (ground water flow is away from rather than toward the creek, as infiltration from the creek helps to recharge the ground water basin). With regard to Arroyo Leon, there is no contribution to surface flow from the ground water basin, since the direction of ground water flow is westward toward the ocean, and thus away from the creek.

Pumping of ground water by the Amesport Landing Well has only very minor effects on the ground water regime described above. When the well is pumping, the level of the ground water surface is drawn down about 12 - 24 feet at the well, forming a "cone of depression" that extends laterally outward from the well about 200 to 300 feet in all directions. However, when the pump is turned off, the water level recovers to prepumping levels rapidly (in less than 30 minutes). Furthermore, records of standing water levels in the well since it was drilled in February, 1988 show that the ground water table has risen somewhat (about 5.4 feet) over the twelve year period of usage. Thus, long-term ground water inflows to the basin from infiltration of rainfall in areas to the east have more than replenished water extracted by the Amesport Landing Well (along with the many other wells that exist in nearby areas).

In summary, because of physical conditions, including the relationship between the land surface and the underlying ground water surface, and the direction of ground water movements, there is no potential for adverse effects on surface water flows in Arroyo Leon and Pilarcitos Creeks caused by pumpage of this well. Additionally, ground water levels during the start-up of the project will be carefully monitored to ensure that additional pumpage for the CCWD school irrigation project does not adversely affect the ground water basin.

I am available to discuss any aspect of this situation with you in more detail at your convenience.

Very truly yours,



Eugene A. Nelson
Certified Engineering Geologist No. 27

Cc: David Mier
General Manager
Coastside County Water District

