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STAFF REPORT: REGULAR CALENDAR

Application No: E-95-09-A3

Project Applicant: Phillips Petroleum Company (Phillips)

Location: State waters offshore Santa Barbara County, between Tajiguas Creek and Arroyo Quemado (Exhibit 1)

Project Description: Construction of an artificial kelp reef to mitigate for the loss of approximately 272 kelp plants resulting from the removal of abandoned pipelines as part of the Subsea Well Abandonment Rig Sharing (SWARS) project (CDP No. E-95-09). The reef will be constructed using 900 2- to 3-foot diameter quarry rock boulders and will cover a 1-acre sandy area, 21 to 34 feet below MLLW.

Substantive File Documents: See Appendix B.

SYNOPSIS

In March 1996, the Commission approved CDP No. E-95-09 for the abandonment of subsea wells and associated pipelines at Phillips Petroleum Company's Molino Gas Field development located in state waters offshore Santa Barbara County. Condition 9 of CDP No. E-95-09 specified that if the results of pre- and post-abandonment surveys showed that project activities caused damage to kelp plants, Phillips must develop a Kelp Mitigation Plan in the form of an amendment to the permit.

Pre- and post-abandonment surveys showed significant damage to kelp plants as a result of abandonment activities. The purpose of the proposed project is to mitigate for the loss of an estimated 272 adult kelp plants. Phillips proposes construction of an artificial kelp reef using 900 2- to 3-foot diameter quarry rocks deployed throughout a 1-acre sandy area located in state

development will conform with the provisions of Chapter 3 of the California Coastal Act and (2) the development will not cause any significant adverse environmental impacts within the meaning of the California Environmental Quality Act.

2.0 STANDARD CONDITIONS

See Appendix B.

3.0 SPECIAL CONDITIONS

Success Criteria

1. Phillips shall successfully restore 470 adult (defined as plants with 8 or more fronds) kelp (*Macrocystis pyrifera*) plant-years by no later than November 30, 2002.

Anchoring

2. Phillips shall avoid anchoring of the contract barge, if feasible. If anchoring of the barge is necessary, prior to commencement of project activities Phillips shall submit an anchoring plan as an amendment to this permit for the review and approval of the executive director. The anchoring plan shall demonstrate to a level of certainty acceptable to the executive director that the project will avoid any adverse impacts to kelp, eelgrass, and hard bottom that may be present in the area.

Monitoring Surveys

3. Within 14 days of completion of reef construction Phillips shall conduct a post-construction survey (including underwater video or photographic stills). Within 30 days following reef construction, Phillips shall submit the post-construction survey to the executive director.
4. In the fall of 2000, Phillips shall conduct a monitoring survey to determine the number, age class, and health of giant kelp plants within the mitigation site and the burial status of the reef rock. Phillips shall submit to the executive director a written report documenting the results of the monitoring survey by November 1, 2000.

Independent Performance Monitoring

5. Phillips shall fund an independent performance monitor to conduct (a) final performance monitoring survey(s) upon which the executive director will judge whether the project has met the defined mitigation success criteria of 470 adult kelp plant-years. At any time between the completion of reef construction and November 30, 2002, Phillips may request from the executive director a performance monitoring survey. Phillips may request multiple surveys to achieve the 470 plant-year mitigation success criteria. The performance survey(s) shall be conducted within 30 days of the executive director's receipt of Phillip's request.

The executive director, in consultation with the State Lands Commission and the County of Santa Barbara, shall select the consultant(s) who will conduct the final monitoring survey. Phillips shall fund the costs of the survey in advance of the execution of the subject contract and shall furnish the necessary funds to the County of Santa Barbara or another administering agency as designated by the executive director. Contract administration and

4.2 Project Background

4.2.1 Kelp Impacts

In March 1996, the Commission approved CDP No. E-95-09 for the abandonment of subsea wells and associated pipelines at Phillips Petroleum Company's Molino Gas Field development located in PRC 2198 in state waters offshore Santa Barbara County. Phillips is one of six offshore oil and gas operators (Phillips Petroleum Company, ARCO Oil and Gas Company, Aera Energy (formerly CalResources LLC), Union Oil Company of California (Unocal), Texaco Exploration and Production Inc., and Chevron USA) that proposed a coordinated Santa Barbara Channel Subsea Well Abandonment and Flowline Abandonment/Removal Program (the "SWARS" program).

Phillips completed the abandonment of the Molino wells in 1996 and the removal of the associated nearshore pipelines in January and February 1997. There were no impacts to kelp associated with the removal of the wells. However, the removal of the associated nearshore pipelines did cause unavoidable damage to kelp.¹

Special Condition 9 of CDP No. E-95-09 states:

If the results of the pre- and post-abandonment surveys show that project activities caused statistically significant damage to kelp plants, Phillips shall within 60 days of completing the post-abandonment survey, develop a Kelp Mitigation Plan and submit it to the Commission in the form of an amendment to this permit. The executive director may, for good cause, grant an extension that includes reasons for the extension and a revised timeline for submitting the amendment application.

Phillips conducted pre- and post-abandonment surveys of the nearshore project area in September 1996 and March 1997, respectively, and prepared reports describing the results of the kelp surveys, including an analysis of net project impacts to hard bottom, kelp, eelgrass, and surfgrass resources.

Comparison of the pre- and post-abandonment surveys showed significant loss of kelp due to work boat anchoring. Based on the results of the pre- and post-abandonment surveys, Coastal Commission staff and Phillips estimated a loss of 272 adult *Macrocystis* plants. Thus, in accordance with Special Condition 9, Phillips is required to implement a plan to mitigate the loss of kelp plants.

4.2.2 Project Alternatives

Commission staff has worked with Phillips in an attempt to develop the least environmentally damaging kelp mitigation method. Phillips considered the following alternative mitigation methods prior to developing the current mitigation plan.

¹ In accordance with the requirements of CDP No. E-95-09, Phillips prepared an anchoring plan designed to avoid to the maximum extent feasible, impacts to kelp, eelgrass and surf grass as indicated by the pre-abandonment survey. This plan was reviewed and approved by staff in consultation with State Lands Commission and Santa Barbara County staffs. Nevertheless, some kelp impacts could not feasibly be avoided.

transplanting (about 2 months), the lines with the plants attached will be brought to the surface and the nylon line will be cut into pieces that each contain one juvenile plant. The juveniles will be attached to the quarry rock in the mitigation area by using tie raps to attach the nylon line to a "transplant assembly" that is secured to the rock using a drilled masonry lug.

4.3.2 Schedule

Phillips expects to complete construction of the kelp reef and transplanting during the late winter and spring of 1999. Phillips will conduct monitoring surveys commencing with the fall following initial construction and planting. Phillips may transplant additional plants if monitoring reveals necessary to achieve successful mitigation. In accordance with **Special Condition 5**, final success of the project will be based on the performance survey(s) to be conducted by an independent consultant selected by the executive director.

4.3.3 Remedial Strategy

The applicant proposes to survey the mitigation area in the spring of 2000. If the success criteria of 272 adult plants has not been met, Phillips proposes to commence a second transplant program.

4.4 Other Agency Approvals

4.4.1 State Lands Commission

The proposed kelp reef requires the issuance of a new lease by the State Lands Commission. The State Lands Commission staff expects its commission to consider Phillips' proposed project in early 1999.

Under the standards of the California Environmental Quality Act (CEQA) the State Lands Commission (SLC), as the landowner, is the lead agency for the proposed project. Under normal circumstances the lead agency acts on a proposed project before the responsible agency(ies). In addition, pursuant to §30601.5 of the California Coastal Act, an applicant for a permit must demonstrate a "right, interest, or other entitlement" to the site of the project.

Notwithstanding the above referenced provisions of the CEQA guidelines, the executive director of the Coastal Commission has agreed to make an exception to allow consideration of the Phillips project by the Coastal Commission before the SLC has granted its approval of the project. The Commission is deviating from its normal permit procedures because 1) the Commission believes all the necessary environmental information is currently available to proceed with a complete review of the project, and 2) although the issuance of a new lease must be reviewed and considered by the SLC at a regularly scheduled State Lands Commission meeting, SLC staff has informed Coastal Commission staff of their confidence that the SLC will approve the new lease. For these two reasons, the executive director is allowing an exception in this case. **Special Condition 7** states that prior to issuance of this permit amendment, Phillips shall submit the final lease agreement approved by the State Lands Commission.

seismic profiling system, and a ground-truth survey by divers, the applicant identified a narrow band of sea floor that is most suitable for placement of the quarry rock for the artificial kelp habitat (Exhibit 1). Depth of the area ranges between 21 and 34 feet below MLLW and the width of the strip ranges between approximately 100 and 500 feet. Diver observations and geological records indicate that the bedrock is primarily siltstone and mudstone from the late Miocene Monterey Formation. Sub-bottom profiling and diver ground-truth efforts indicate that the sand layer of the area is 1 to 2 feet thick over most of the area.

The approximately 1-acre area chosen for the mitigation site has in the past only supported unstable populations of scattered kelp plants. The June 1998 biological survey shows that the area does not currently support significant populations of invertebrates or marine plants (including kelp or eelgrass), so the impact of rock placement in the area will not cause significant harm to any sensitive species. Furthermore, the placement of rock in the area is likely to increase habitat for benthic fish. Thus, the project is sited in such a manner that will not significantly impact marine organisms or the biological productivity of coastal waters and is therefore consistent with Coastal Act sections 30230 and 30231.

4.5.1.2 Interim Loss of Resources

The applicant proposes to define the success of the kelp mitigation project as the demonstration of the existence of 272 adult plants on the quarry rock the spring following transplantation, resulting in a 1:1 mitigation ratio. However, the impact occurred almost two years ago, resulting in an intervening period of time between when the resources were lost and initiation of the mitigation program. Phillips must compensate for this "gap" in time, or "temporal loss" of habitat.

Phillips asserts that the proposed mitigation plan adequately addresses the need to compensate for the temporal loss of resources for two reasons: 1) the loss of nearly all the kelp plants in the area in the winter of 1997-98 limits the assumed temporal loss of resources to one year (since the original 272 plants would have been lost during the winter of 1997-98), and 2) the quarry rock will provide habitat for kelp in perpetuity, thus adequately compensating for the interim loss of resources for the one year.

Phillips has substantiated the loss of over 99% of the remaining kelp plants in the anchor impact areas and on the pipeline bundles during the winter of 1997-98. June and September 1998 diving observations by Phillips confirmed the loss of 30 out of 30 kelp plants mapped in September 1997. The diving surveys also confirmed that where June 1998 side scan sonar surveys showed plants at medium density, the plants were all too small to have recruited prior to March 1997 when the impact to plants due to pipeline removal occurred. Based on these data, the Commission agrees that Phillips need only compensate for one year of temporal habitat loss in addition to replacing the 272 kelp plants killed during pipeline removal.

Phillips' second reason for limiting the required number of restored plants to 272 is its assertion that the quarry rocks will provide habitat for kelp in perpetuity. The applicant proposes to outplant juvenile kelp plants to the mitigation site in the spring following deployment of the quarry rock in the mitigation area. Because the mitigation plan proposes outplanting

rocks overboard with a skip loader. The applicant has stated that anchoring of the barge will be unnecessary (letter from Manson Construction Company). The deployment of the rocks are expected to therefore avoid any anchorage impact to existing kelp plants or hard bottom substrate. **Special Condition 2** requires the deployment of the rocks avoid anchoring of the contract barge. If it is impossible to deploy the rocks without anchoring, an anchoring plan must be submitted and approved by the executive director prior to any anchoring activities.

4.5.1.5 Surveys and Monitoring

As proposed, the habitat mitigation surveys would be performed by a consultant under contract directly with Phillips. The results of these surveys will determine the success or failure of the mitigation project. Phillips has an economically based interest in documenting that the habitat is successfully restored, and cannot therefore be considered an impartial judge concerning this habitat mitigation assessment. Thus, it is critical that the survey(s) to determine the success of the mitigation project be conducted by a party independent of the permittee. **Special Condition 5** specifies that the executive director, in consultation with the State Lands Commission and the County of Santa Barbara, will select the consultant(s) who will conduct the survey(s) upon which the success of the mitigation will be judged. At any time following the construction of the kelp reef until November 30, 2002, Phillips may request the executive director's evaluation of the success of the mitigation. Phillips may request multiple surveys to achieve the 470 plant-year mitigation success criteria. The performance survey(s) shall be conducted within 30 days of the executive director's receipt of Phillip's request. **Special Condition 5** requires Phillips to direct the necessary funds for the biological survey to the County of Santa Barbara or another administering agency selected by the executive director. Contract administration and management arrangements will be specified in a letter of agreement between the executive director and the administering agency.

4.5.1.5 Remediation

Kelp mitigation is a developing science. Based on current knowledge of this subject, the proposed construction of a quarry rock kelp reef is the best available alternative to achieve the project goals. However, this project should be considered experimental.

To assure that the required mitigation is provided, a remediation plan is necessary. Therefore, **Special Condition 7** requires Phillips to develop an alternative mitigation plan in the case that the proposed project fails to satisfy the mitigation success criteria. The alternative plan must provide, if necessary, compensation for any additional temporal loss of habitat incurred due to the failure of the original mitigation attempt.

4.5.1.6 Conclusion

The applicant has designed the proposed artificial kelp reef project in a manner that, in combination with **Special Conditions 1** through **7**, will protect the biological productivity and quality of coastal waters. The Commission therefore finds the project consistent with Coastal Act Sections 30230 and 30231.

Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded...

Coastal Act Section 30234.5 states:

The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.

The proposed project will not adversely impact commercial fishing activities because commercial fishing does not occur at the proposed mitigation site. If the proposed artificial kelp reef is successful in creating a kelp habitat it is expected to provide a benefit to the recreational fishing community by creating a new kelp habitat for sportfishing vessel operators to visit. The reef will not affect beach users or surfers and will provide new recreational diving opportunities.

The Commission finds, therefore, that the proposed reef augmentation project is consistent with Coastal Act Sections 30220, 30234 and 30234.5.

4.5.4 Air Quality Impacts

Coastal Act section 30253(3) states:

New development shall be consistent with requirements imposed by an air pollution control district or the State Air Resources Control Board as to each particular development.

The Santa Barbara County Air Pollution Control District (APCD) is the local air district responsible for implementing federal and state air quality standards in the proposed project area.

Project emissions are associated with the tug, barge, assist tug, and the mechanical loader utilized to off-load the rock into the water. The rock will be off-loaded into the proposed area in a maximum of two consecutive days. The generator on the barge will operate continuously during the entire 48-hour period, and the mechanical loader will operate for about seven hours per day. The total air emissions for the project are estimated to be less than a half ton total pollutants for the two-day duration of rock deployment. The project therefore qualifies for a less than one ton temporary project exemption from the requirement to obtain an Authority to Construct or Permit to Operate from the APCD (APCD 1998).

The Commission therefore finds that the proposed project as conditioned is consistent with Coastal Act Section 30253(3).

4.5.5 Cumulative Impacts

Coastal Act Section 30250 requires that:

New...development,.. shall be located...where it will not have significant adverse effects, either individually or cumulatively on coastal resources...

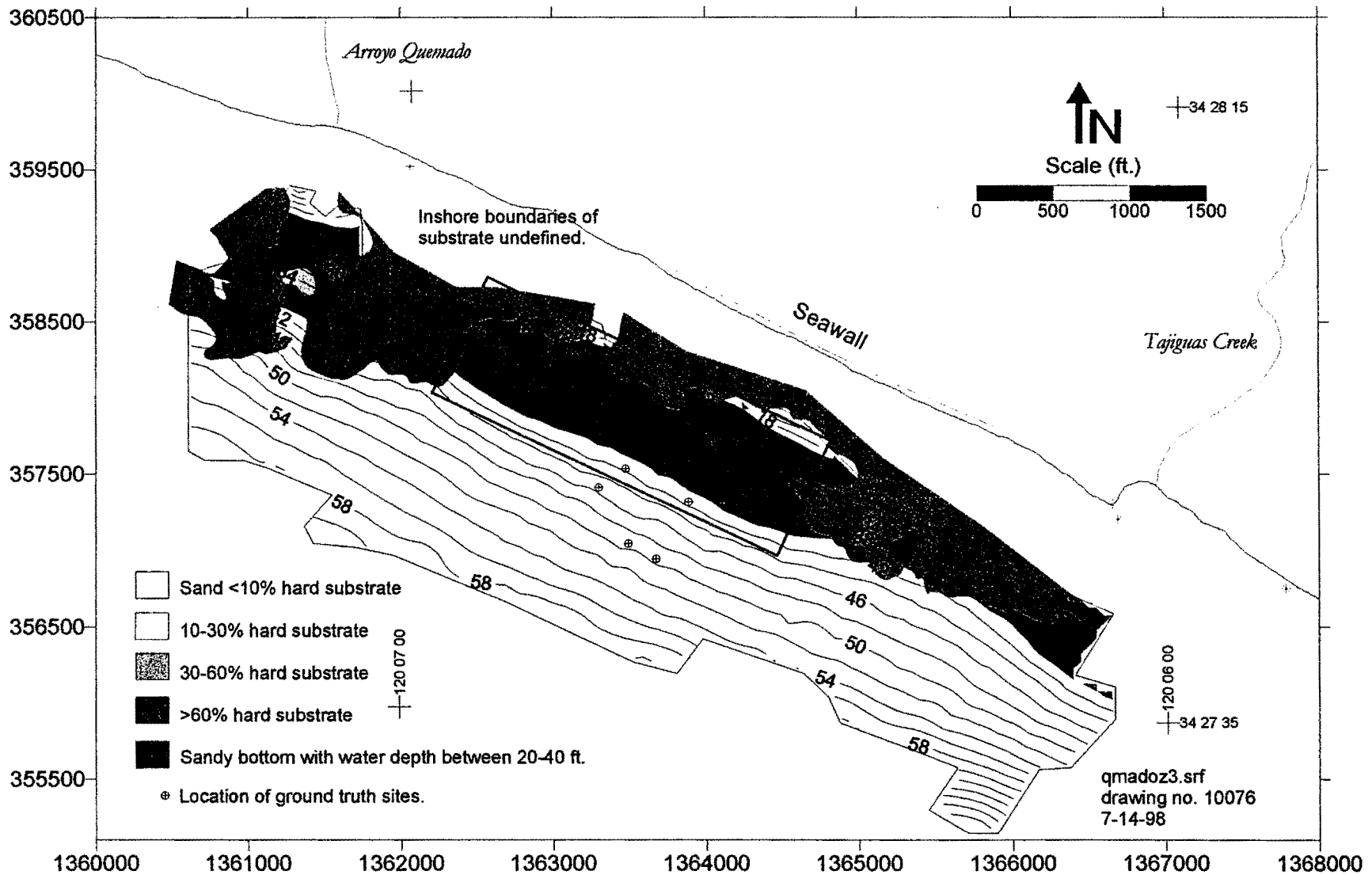
APPENDIX A
SUBSTANTIVE FILE DOCUMENTS

Coastal Development Permit E-95-09, including all substantive file documents

Ecosystems Management Associates, Inc. Offshore San Thickness Analysis: Arroyo Quemado to Tajiguas Creek, California. July 7, 1998. Prepared for Phillips Petroleum Co.

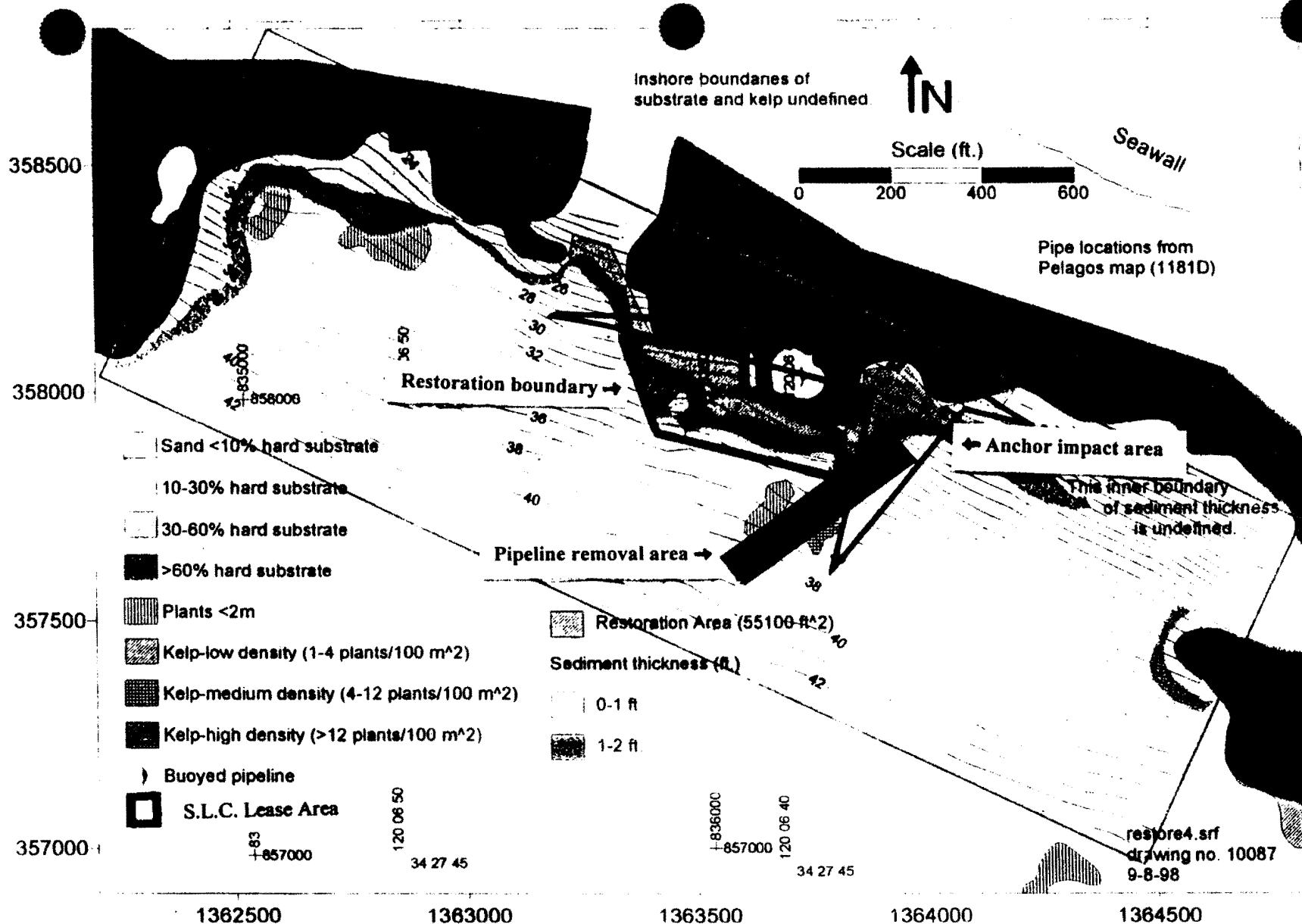
APCD 1998 Santa Barbara County Air Pollution Control District. Letter from Ron Tan to Caitlin Sweeney, California Coastal Commission, November 13, 1998.

State Lands Commission. Letter from Barbara Dugal, Public Land Management Specialist, to Susan McMenemy, Phillips Petroleum, September 1, 1998.



Notes: Datum is NAD 1927.
 Projection is California State Plane Zone 5 (ft.)
 The survey was performed on 16-17 June 1998 by EcoSystems Management Inc.
 The contours represent water depth (feet below MLLW).
 The substrate data are based on records from a 500-kHz side scan sonar system.
 The shoreline was digitized from a USGS 7.5-minute quadrangle.

FIGURE 7 BATHYMETRY AND OUTCROPPING IN VICINITY OF ARROYO QUEMADO AND TAJIGUAS CREEK.



Notes: Datum is NAD 1927
 Projection is California State Plane Zone 5 (ft.), grid tick Zone 6.
 The Survey was performed on 16-17 June 1998 by EcoSystems Management Inc
 The contours represent water depth below MLLW (ft.)
 The sediment overburden data is from a 3.5-kHz sub-bottom profiler
 The substrate data are based on records from a 500-kHz side scan sonar system
 The shoreline was digitized from a USGS 7.5-minute quadrangle

RESTORATION AREA WITH COMPOSITE OF BATHYMETRY, AREA WITH < 2 FT. OF SEDIMENT OVERBURDEN, OUTCROPPING AND DISTRIBUTION OF MARINE PLANTS (I.E. KELP) IN SELECTED AREA BETWEEN ARROYO QUEMADO AND TAJIGUAS CREEK.

Table 2. Estimated Age Structure of the Kelp Population in the Anchor Impact Areas at Tajiguas During Pre-Abandonment Kelp Surveys and Projected Number of Original Plants Remaining at the End of Subsequent Years*

Year Class	% of Population	Original Number	Projected Number of Original Plants Remaining at Year's End, by Year			
			1st Year	2nd Year	3rd Year	4th Year
0	54%	147	104	74	53	38
1	38%	104	12	1	0	-
2	4%	12	6	3	2	1
3	2%	6	3	2	1	0
4 or more	1%	3	0	-	-	-
Total		272	125	80	55	39
% Decline		-	54%	36	31	30
Total Average Number of Plants for All Age Classes of Plants			198	102	68	47
Total Plant-Years = 198 + 102 + 68 + 47 = 415						

* Based on raw data table from Tajiguas Pre-Abandonment Survey (Racal Pelagos 1997)

- The plants in the Tajiguas area grew at a similar rate as those measured during transplant studies off Gaviota and shown in Figure 1 as discussed for the size/age approach.
- To predict kelp loss, the decaying exponential equation, derived from a fit to the Point Loma data was used (see Figure 3). The equation is:

$$S = 100e^{-0.062t}$$