

**CALIFORNIA COASTAL COMMISSION**

NORTH COAST AREA

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Staff: Jack Liebster-NC  
Staff Report: September 25, 1998  
Hearing Date: October 16, 1998  
Commission Action:

**STAFF REPORT: PERMIT AMENDMENT****APPLICATION NO.: 1-94-06A****APPLICANT: CANEVARI TIMBER COMPANY**

**PROJECT LOCATION:** The northern part of the Sandy Prairie landform within the ordinary high water mark along the southwest bank of the Eel River (an area also known as Christen's Bar), at the end of Dinsmore Drive, west of Fortuna, Humboldt County (APN 106-041-02).

**DESCRIPTION OF PROJECT**

**PREVIOUSLY APPROVED:** Extract up to 200,000 cubic yards of sand and gravel per year from river gravel bars and install two railroad flatcars side by side over low water channels for use as seasonal truck crossings.

**DESCRIPTION OF AMENDMENT:** Expand extraction area to include an adjacent 125-acre area, and revise the approved monitoring program.

**LOCAL APPROVALS RECEIVED:** Humboldt County Conditional Use Permit CUP 57-912), Surface Mining Reclamation Plan (SMR 10-912), and Program and Supplemental Environmental Impact Reports

**OTHER APPROVALS REQUIRED:** State Lands Commission General Lease; California Department of Fish & Game Streambed Alteration

Agreement; U.S. Army Corps of Engineers Section 404 permit.

SUBSTANTIVE FILE DOCUMENTS: Humboldt County LCP.

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SUMMARY OF STAFF RECOMMENDATION:

Staff recommends that the Commission approve the amendment request to modify an approved sand and gravel extraction operation with conditions. The amendment proposes to expand the area in which the applicant may extract gravel on a seasonal but on-going basis on the Sandy Prairie Bar along the lower Eel River. It does **not** increase the annual extraction amount (200,000 cubic yards). The amendment would also revise the applicant's current monitoring program to incorporate monitoring procedures the Commission has been applying to other sand and gravel mining applicants in the Eel River. These conditions have been designed to be as consistent as possible with the requirements imposed on the applicant by other regulatory agencies, including the Corps of Engineers, the Department of Fish & Game, the U.S. Fish and Wildlife Service, and Humboldt County, who adopted new monitoring requirement subsequent to the applicant's original permit. At the request of the applicant, the proposed new conditions substitute a "cross-sectional analysis" used by these other agencies for the Digital Terrain Mapping (DTM)/photogrametric approach originally proposed by the applicant, and currently required in the original CDP. In conjunction with granting this request for an amendment, staff recommends the Commission adopt conditions that would revise the current permit conditions to conform to the practices and procedures currently applied to river mining projects in the area by other agencies. Thus the proposed amendment would provide more standardized annual gravel extraction plans for review and approval by the Executive Director of as a way of ensuring that gravel extraction each year will not exceed the annual replenishment of gravel to the site by the river, and avoiding other potential impacts of the gravel extraction operation.

Both the original project area and the area proposed to be added contain environmentally sensitive riparian vegetation areas and are along a section of the Eel River where the endangered Western Snowy Plover has been found. To prevent disturbance of such habitat, staff recommends requiring that the annual gravel extraction plans for the site as a whole include yearly botanical surveys, and that gravel extraction operations avoid environmentally sensitive habitat areas. In recognition of the fact that much of the bar may contain very young riparian vegetation without appreciable habitat value, and that the definition of environmentally sensitive areas in the Coastal Act only includes areas with habitat value, the condition bans extraction only in those areas where the riparian vegetation has reached a size and extent that yields appreciable habitat values for nesting, foraging, and cover of wildlife (generally consistent with one year's growth of vegetation).

As conditioned, staff believes that the project is fully consistent with the Coastal Act.

#### STAFF NOTES

1. PROCEDURE AND BACKGROUND: Section 13166 of Title 14 of the California Code of Regulations states that the Executive Director shall reject an amendment request if it lessens or avoids the intent of the approved permit unless the applicant presents newly discovered material information, which he or she could not, with reasonable diligence, have discovered and produced before the permit was granted.

The Coastal Commission granted Coastal Development Permit No. 1-94-06 to Canevari Timber Company in April of 1994 for the seasonal extraction of up to 200,000 cubic yards of sand and gravel per year from the Eel River in Humboldt County (see Exhibit 6). The proposed amendment request was submitted by Canevari Timber Company seeking authorization to expand the area of the permitted activity to include an adjacent 125-acre parcel over which the applicant has entered into an operating agreement with owner Frank Christen, and to revise the monitoring program to be consistent with both the requirements the Commission has more recently imposed on other operators in the area, and the requirements of other agencies with jurisdiction over the extraction activities.

In its action to approve the original permit, the Commission imposed eight special conditions. These conditions include requirements for (Special Condition No. 1): submitting a copy of the approved State Lands Commission general lease for the project; (Special Condition No. 2): submitting an annual report that contains: (a) a copy of the California Department of Fish and Game's annual 1603 agreement for the coming gravel extraction season; (b) a copy of any necessary U.S. Army Corps of Engineers permit granting approval for the project during the coming gravel extraction season; and (c) annual environmental assessments and annual monitoring surveys conducted and prepared in accordance with the description of the Annual Environmental Assessment and Monitoring Program submitted by the applicant; (Special Condition No. 3): limiting extraction to no more than 200,000 cubic yards of material from the site in any given year; (Special Condition No. 4): limiting the extraction to the period from June 1 through October 1 of each year, unless extended by the Executive Director after consultation with the California Department of Fish and Game; (Special Condition No. 5): implementing the proposed reclamation design for Area B described in the Final SEIR Surface Mining and Reclamation Plan, which called for the creation of 1.9 acres of riparian scrub habitat, 2.7 acres of submergent/emergent wetland habitat, and 2.5 acres of open water habitat; (Special Condition No. 6): establishing the permit expiration date December 31, 1999, not be subject to a time extension; (Special Condition No. 7): prohibiting disturbance or removal of any of the North Coast black

cottonwood riparian vegetation habitat at and around the project site, and restricting the pushing of any material into the low flow channel of the river, except as needed for annually installing and removing the proposed railroad flatcar river crossing; and (Special Condition No. 8): if Humboldt County completes and adopts its proposed River Management and/or adopts an interim set of gravel extraction policies prior to expiration of this permit, requiring the applicant to apply to the Commission for an amendment that seeks to incorporate conforming changes into the project.

In its findings to approve the original project subject to these conditions, the Commission indicates the concern that the original project, together with other mining in the Eel River must be reviewed in a coordinated fashion and evaluated in terms of their cumulative effects. The findings state, in applicable part, the following:

*... the projects can contribute cumulatively to erosion of the bed and banks of the river, which in turn can erode adjacent riparian and other habitat areas, interfere with fishery resources, undermine bridge supports, and cause other impacts. Besides the cumulative impacts resulting from river morphology changes, other cumulative impacts resulting from the gravel mining operations include habitat degradation from the installation of gravel processing operations and access roads within environmentally sensitive habitat adjacent to the gravel bars, exclusion of recreational use of the river banks, and noise.*

*Until recently, there had been very little coordinated review of the combined effects of the various gravel mining operations... Permits granted in the past by the various approving agencies were site specific and granted with little knowledge of the cumulative impacts of gravel mining throughout the lower Eel River.*

*The lack of coordinated review began to change in 1991. That year... the County developed a strategy for controlling the cumulative impacts of the gravel operations on riverbed degradation and bank erosion. At the heart of the strategy is an annual administrative renewal of reclamation plans that will set a yearly limit on the amount of gravel that may be removed in any given year and specifies the particular method and location of extraction.*

In the years since CDP 1-94-06 was originally granted, the efforts at developing a coordinated approach among the involved regulatory agencies have led to refinements in the permitting and monitoring requirements imposed to control the cumulative impacts of all projects that could affect the Eel River. It was the Commission's intent in requiring Special Conditions No. 1,2,4,6 and 8 to assure that sand and gravel mining be permitted in a coordinated fashion that would assure that potential cumulative impacts are effectively addressed. It was also the Commission's intent, as specified in Special Condition No. 3, to limit extraction to no more than 200,000 cubic yards of material from the site per year.

The amendment proposes to extend the area covered by the permit without increasing the cumulative amount of mining, and to coordinate and revise the monitoring provisions of the original permit to conform to those required by both other agencies and by the Commission itself in more recently issued permits. Therefore, the Executive Director determined that the proposed amendment would not result in a lessening or avoidance of the intent of the approved permit and accepted the amendment request for processing.

2. Standard of Review

The proposed project is located within the Commission's retained jurisdictional area. Therefore, the standard of review that the Commission must apply to the project is the Coastal Act.

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I. MOTION, STAFF RECOMMENDATION AND RESOLUTION:

The staff recommends that the Commission adopt the following resolution:

1. Motion:

I move that the Commission approve the amendment to Coastal Development Permit No. 1-94-06 subject to conditions:

2. Staff Recommendation of Approval:

Staff recommends a YES vote and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

3. Resolution to Approve Permit Amendment:

The Commission hereby approves the amendment to the coastal development permit, subject to the conditions below, on the grounds that the proposed development with the proposed amendment will be in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976, is located between the sea and the first public road nearest the shoreline and is in conformance with the public access and public recreation policies 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 Attachment A.

III. Special Conditions.

Special Condition 5 of the original permit shall remain in effect. The following special conditions shall replace all seven of the other special conditions in the original permit.

1. State Lands Commission Review. PRIOR TO ISSUANCE of the coastal development permit, the applicant shall submit to the Executive Director a written determination from the State Lands Commission that:

- a. No State lands are involved in the development; or
- b. State lands are involved in the development and all permits required by the State Lands Commission have been obtained; or
- c. State lands may be involved in the development, but pending a final determination an agreement has been made with the State Lands Commission for the project to proceed without prejudice to that determination.

2. Annual Administrative Approval to Continue Operations. PRIOR TO THE START OF EACH SEASON'S GRAVEL EXTRACTION OPERATIONS, the applicant shall submit for the review and approval of the Executive Director an annual report that contains the following:

- a. A gravel extraction plan for the upcoming season containing cross-sections, maps, and associated calculations that accurately depicts the proposed extraction area, demonstrates that the proposed extraction will be consistent with the extraction limits specified in Special Condition 3, below, and is prepared in conformance with Appendix C of U.S. Army Corps of Engineers, San Francisco District Letter of Permission Procedure, Gravel Mining and Excavation Activities within Humboldt County, No. LOP 96-1, dated August 19, 1996;
- b. A pre-extraction aerial photo of the site taken during the spring of the year of mining at a scale of 1:6000 and upon which the proposed extraction activities have been diagrammed;

- c. A botanical survey prepared by a qualified professional with experience in riparian vegetation and wetlands identification and mapping approved by the Executive Director that maps all vegetation and all ponded areas found in potential extraction areas of the site and highlights the location and extent of all vegetated areas containing woody riparian vegetation that is either (i) part of a contiguous riparian vegetation complex 1/16-of-an-acre or larger or (ii) one-inch-in-diameter at breast height (DBH) or greater; If the only areas proposed for extraction are devoid of vegetation and ponded wetlands, the applicant may substitute the submittal of photographs (including an aerial) that are sufficient in the opinion of the Executive Director to demonstrate that no vegetation and ponded wetlands exist in the proposed extraction areas in lieu of the botanical survey.
- d. A copy of the gravel extraction plan for that year approved by the County of Humboldt Extraction Review Team (CHERT),
- e. A post-extraction survey of the prior year's mining activities (if any) conducted following cessation of extraction and before alteration of the extraction area by flow following fall rains, that includes the amount and dimension of material excavated from each area mined and is prepared in conformance with Appendix C of U.S. Army Corps of Engineers, San Francisco District Letter of Permission Procedure, Gravel Mining and Excavation Activities within Humboldt County, No. LOP 96-1, dated August 19, 1996;
- f. The results of biological monitoring report data required by the U.S. Army Corps of Engineers as described in Appendix D of U.S. Army Corps of Engineers, San Francisco District Letter of Permission Procedure, Gravel Mining and Excavation Activities within Humboldt County, No. LOP 96-1, dated August 19, 1996;

The Executive Director shall approve the report if the report adequately provides the required information and if the proposed gravel extraction for the coming season is consistent with the terms and conditions of this permit, including the requirements of Condition No. 3 regarding seasonal extraction limits. Within 10 working days of receipt of the annual report, the Executive Director shall review the report and either approve the report as submitted or respond in writing to the applicant as to why the submittal is inconsistent with the conditions of the permit. The permittee shall not commence gravel extraction operations for the season until the Executive Director has approved the annual report in writing.

Any proposed changes to the approved annual report shall be submitted for the review and approval of the Executive Director prior to the change occurring and shall be accompanied

with documentation sufficient in the opinion of the Executive Director to determine whether the proposed extraction plan, as modified, is consistent with the conditions of the permit.

3. Extraction Limitations.

Extraction of material shall be subject to the following limitations:

- a. Except in Extraction Area B where Coastal Development Permit No. 1-94-06 authorizes a pit excavation, the applicant shall extract material within the coastal zone only by gravel skimming in a manner that will maintain a sloped extraction area except for excavation designed to improve channel depth or to create "cold water refugia" for the benefit of fish species that has been specifically approved for this purpose by the Department of Fish and Game;
- b. The applicant shall extract no more than 200,000 cubic yards of material from the site in any given year;
- c. Excavation shall not occur in the active channel (area where water is flowing unimpeded through the river channel) and shall be limited to areas a minimum of 1 vertical foot elevation above the current water surface and a minimum of 6 feet horizontally from the current water's edge;
- d. No gravel extraction shall be performed within 500 feet of a bridge or the length of the bridge, which is greater, and within 500 feet of any other structure (i.e. water intake, dam, etc.). Gravel removal may encroach within this setback if as part of the annual mining plan to be submitted and approved by the Executive Director pursuant to Special Condition 2, the applicants submit written permission by owners of these structures and information demonstrating that the proposed encroachment will not adversely affect the integrity of the structures;
- e. The excavation of in-stream aggregate shall be limited to those sites that have experienced sufficient replenishment to accommodate the proposed mining. Areas with sufficient replenishment are those areas that have sufficient aggraded material where mining would leave the final surface elevation of the area to be mined above the low water level of the river with a sloped extraction area that drains towards the main channel of the river;
- f. Gravel extraction operations shall not disturb or remove any of the riparian vegetation located on the bank of the river;



- g. Except where authorized under Coastal Development Permit No. 1-94-06 in Extraction Area B, gravel extraction operations shall not disturb or remove any area of riparian vegetation growing on the gravel bar containing woody vegetation that is either (i) part of a contiguous riparian vegetation complex 1/16-of-an-acre or larger or (ii) one-inch-in-diameter at breast height (DBH) or greater.
- h. Gravel extraction operations shall not disturb any ponded areas;
- i. Gravel extraction operations shall be designed to avoid adversely affecting Western Snowy Plover by complying with one of the following:
  - (i). Gravel extraction shall commence after September 15; or
  - (ii). Gravel extraction shall commence on or after August 16, and a United States Fish and Wildlife Service (USFWS) approved biologist has surveyed the entire gravel bar, on or after August 16th, and not found western snowy plover nests and/or chicks, and the survey results have been submitted to the Executive Director prior to the commencement of gravel extraction;
  - (iii). Gravel extraction shall commence on or after August 16, and a USFWS approved biologist has surveyed the entire gravel bar, on or after August 16th, and has found western snowy plover nests and/or chicks, and the survey results have been submitted to the Executive Director prior to the commencement of gravel extraction, and the operator:
    - a. has the bar surveyed each morning by a USFWS approved biologist, to locate the discovered nests and/or chicks prior to gravel extraction; and
    - b. maintains a 300-meter buffer between the nests and/or chicks' morning location and operations; and
    - c. halts operations the first day no nests or chicks are found on the bar; and
    - d. continues surveying for two more consecutive days to locate chicks. Surveys can stop on the third consecutive day of not finding chicks. Gravel extraction operations, however, can resume on the second consecutive day; and

- e. submits a copy of all of the morning survey results to the Executive Director.

- j. Gravel extraction shall be designed to avoid adversely affecting any other state or federally listed rare or endangered species that is discovered at the project site during the life of the permit.

4. Corps of Engineers Approval.

PRIOR TO THE START OF EACH SEASON'S GRAVEL EXTRACTION OPERATIONS, the applicant shall submit a copy of any necessary U.S. Army Corps of Engineers permit granting approval for the project for that gravel extraction season.

5. Extraction Season.

Extraction shall only be performed during the period from August 16 through October 1 of each year. All regrading required by Special Condition No. 6 must be completed by October 15.

6. Seasonal Site Closure.

Except in Extraction Area B, the excavation area during any given year must be regraded before October 15. Regrading includes filling in depressions created by the mining, grading the construction/excavation site according to prescribed grade, sloping downward to the river channel, removing all seasonal crossings and grading out the abutments, and removing all temporary fills from the bar.

7. Expiration Date.

The permit shall expire on December 31, 2003, and shall not be subject to a time extension. Continued gravel extraction operations after the expiration date shall require a new coastal development permit, except for Extraction Area B as referenced in Special Condition No. 5 of permit 1-94-06, for which the permit shall expire on its original expiration date of Dec. 31, 1999.

8. Resource Protection.

The gravel extraction and processing operations shall not disturb or remove any of the established riparian vegetation habitat along the bank of the river, nor any of the riparian vegetation areas on the gravel bar limited by Special Condition No. 3. No new haul roads shall be cut through the habitat. Furthermore, the operations shall not push any material or equipment into the low flow channel of the river.

9. Watering Access Road

The applicant shall regularly water down the dirt access road through the use of a water truck where the road passes through and along the riparian corridor on the south bank of the river.

10. Permit Amendment.

Any proposal to take more than the maximum permitted 200,000 cubic yards of material, to take more than the amount of available gravel, to extract in a manner contrary to the extraction limitations set forth in Special Condition No. 3, or make other significant changes to the proposed operation, including expanding the height and size of stockpiles, shall require an amendment to this permit.

11. Seasonal Crossings

Any proposed seasonal crossing of the low flow channel or secondary channels that can be expected to maintain flow year round shall be of the railroad flatcar variety consisting of one or two 60-foot-long rail cars placed side by side in a manner so as to completely span the channel without requiring the placement of abutment fill in the channel and with a minimum 3-foot vertical clearance above the surface of the water.

12. Streambed Alteration Agreement.

PRIOR TO THE START OF EACH SEASON'S GRAVEL EXTRACTION OPERATIONS, the applicant shall submit a copy of any necessary Streambed Alteration Agreement or other approval required by the Department of Fish & Game for the project for that gravel extraction season.

IV. Findings and Declarations.

The Commission hereby finds and declares as follows:

1. Site Description.

The applicant seeks an amendment of a permit granted for the seasonal removal of up to 200,000 cubic yards of river run sand and gravel per year and the installation of a seasonal crossing of the Eel River from a portion of the Sandy Prairie Landform within the lower Eel River, immediately west of Fortuna in Humboldt County (see Exhibits 1 -5). The site is just west of Highway 101 and is accessed via Dinsmore Drive.

The total project site occupies approximately 323 acres (202 acres in the original permit, and +/- 123 acres to be added by this amendment) with 303 acres within the coastal zone and 22 acres outside the coastal zone (Exhibit 2). The 123-acre area to be added, known as the Christen property, is located immediately west of the Canevari properties within Sandy Prairie. These areas are below the ordinary high water channel of the river, and are all within the Commission's retained jurisdiction. The part of the project covered by the original permit 1-94-06 is described in the findings of that permit attached and made part of this permit amendment (Exhibit 6).

The Sandy Prairie landform is a depositional feature with multiple channels at high flows, separated by islands. Sandy Prairie is located just upstream of the zone of tidal influence and is also at a transition point in the river where the channel slope of the river decreases from points further upstream. The proximity to the zone of tidal influence and the decrease in slope result in large quantities of sand and gravel carried in suspension in the river to be deposited at Sandy Prairie. The subject properties include only a portion of the Sandy Prairie landform. Other gravel operators extract sand and gravel from the landform both upstream and downstream of the applicant's property.

The surrounding properties to the west of the river are all devoted to agricultural grazing. The North Coast Railroad and Highway 101 lie adjacent to the subject property to the east, buffering the site from the developed portions of the City of Fortuna. The gravel extraction areas and processing facilities are visible from the highway.

The riverine habitat of the river channel provides habitat for invertebrates, fish, amphibians such as frogs and salamanders, invertebrate-eating birds, and various mammals including river otters and mink and other mammals that come to the river to forage (such as deer and raccoon). The exposed cobble in the gravel bar adjacent to the low-flow channel provides existing or potential roosting and/or nesting habitat for at least four avian species; the Western Snowy Plover, Spotted Sandpiper, Killdeer, and White-crowned Sparrow, but represents one of the sparsest habitats in terms of wildlife diversity and numbers.

## 2. Background on Eel River Gravel Mining

The lower Eel River has been used for gravel extraction since 1911. Currently, 11 gravel operations are located along an eight mile stretch of the lower Eel River, and two additional

operations are located on the lower reaches of the Van Duzen River which flows into the Eel at Alton. The 11 operations along the Eel are within the Coastal Zone. The annual maximum amount of gravel permitted to be extracted by the 13 gravel mining operations in the lower Eel and Van Duzen Rivers is estimated by the County to be approximately 1,480,000 cubic yards. Actual extraction is generally much lower (less than 400,000 cubic yards in 1995).

The projects are interrelated in the sense that all of the gravel bars are part of the dynamic river system and derive their material from the same source, as described in the findings for the original permit (Exhibit 6, pgs.6-9).

Thus, any project could contribute cumulatively to erosion of the bed and banks of the river, which in turn can erode adjacent riparian and other habitat areas, interfere with fishery resources, undermine bridge supports, and cause other impacts. Besides the cumulative impacts resulting from river morphology changes, other cumulative impacts resulting from the gravel mining operations include habitat degradation from the installation of gravel processing operations and access roads within environmentally sensitive habitat adjacent to the gravel bars, exclusion of recreational use of the river banks, and noise.

The County and other responsible agencies developed a strategy for controlling the cumulative impacts of the gravel operations on riverbed degradation and bank erosion that relies on an annual administrative renewal of reclamation plans. These plans set a yearly limit on the amount of gravel that may be removed in any given year and specify the particular method and location of extraction.

The combination of the new federal regulatory authority of the Corps of Engineers, the Program EIR requirement for preparation of River Management Plan for the Eel River, and the standardization of state and local agency monitoring requirements, underscore how a comprehensive approach to river management of the Eel River gravel operations may be the only way in which permitted operations will be allowed to continue in the future.

### 3. Detailed Project Description.

CDP 1-94-06 permits the applicant to seasonally extract up to 200,000 cubic yards of sand and gravel per year from the Sandy Prairie landform, install seasonal crossings of low flow river channels as needed to facilitate gravel extraction, and reclaim the mined areas.

The proposed amendment would add approximately 123 acres to the area of about 202 acres already permitted under permit 1-94-06. The proposed amendment would **not** increase the annual 200,000 cubic yard extraction limit; rather mining on the Christen property would simply increase the resource base that can be used to meet the current annual gravel extraction allotment.

Mining is proposed within a maximum 38-acre area of the 125-acre parcel (Exhibit 5). Mining will be conducted within an overflow channel area that becomes inundated at flows between 18,000 and 57,000 cubic feet per second (cfs) and greater. However, no mining would occur within the overflow channel when the channel is inundated. All mining would be conducted when the channel is dry. The maximum proposed mining area provides a 50-foot minimum set back from property lines and sensitive areas. The amendment materials state that no mining is proposed in areas containing Cottonwood riparian or seasonal pool aquatic habitat.

Proposed annual extraction volumes from Christen's Bar would range from 30,000 to 60,000 cubic yards. The annual extraction volume would change yearly, depending on the amounts of material shown to be available by each year's annual monitoring survey for the upcoming season. Specific extraction areas within Christen's Bar, and slopes and depths for mining would also be developed based on the results of annual monitoring. Mining methods proposed include skimming and trenching. Mining as proposed would be limited to the period of June 1 through September 30 of each year, unless an extension of operations is requested and approved.

Gravel may be extracted annually from the Christen property, concurrent with or independent of gravel extraction on the Canevari properties. Access to the property for gravel extraction would be through the Canevari properties using the existing annual haul road, which includes a summer bridge over the Eel River (Exhibit 5). Diesel engine driven heavy equipment will be used to extract and haul gravel to the processing facility located on the right bank of the Eel River (Exhibit 3).

The extraction operation will be served by processing facilities located on the applicant's property east of the riverbank. These processing facilities are outside of the coastal zone and are not addressed by this permit.

As proposed for both the originally permitted project and the project as proposed to be amended, no mining in any given season would occur at any location until after preparation of specific operating plan for mining and reclamation developed on the basis of annual environmental assessments and monitoring of the proposed project site. Annual assessments and site evaluation would be used to determine when aggregate can be excavated without causing riverbed degradation. The proposed 200,000 cubic yards of annual gravel extraction is an upper limit. If after a low flow winter season there is a net reduction in surface elevation of Sandy Prairie and if long term storage supplies of gravel have been exhausted by prior years mining, the applicant proposes not to mine at all. Annual monitoring will determine the levels and volume of recruitment and identify areas of mining using the following criteria.

1. If there is a net reduction in surface elevation for Sandy Prairie's bankfull bed as determined by the annual environmental assessment and monitoring program, no mining shall occur within the bankfull channel bed. In this case, mining would be limited to Area A, a site outside of the coastal zone.
2. If there is no net change in surface elevation, no mining shall occur within the active channel bed and excavation of instream aggregate shall be limited to those long-term storage sites of alluvium above the active channel described in the submitted mining and reclamation plan.
3. If there is a net increase in surface elevation, mining may occur within the bankfull channel at those sites described in the submitted mining and reclamation plan that have experienced sufficient replenishment to accommodate the proposed mining. However, excavation would be limited to those sites that have experienced replenishment.

The amendment proposes that the requirements in the special conditions of the original permit for monitoring and annual assessment be changed to conform to those techniques that are being performed at other gravel extraction operations in the lower Eel. These techniques involve developing cross sectional data and other monitoring information based on field surveys in accordance with the monitoring standards used by the Department of Fish and Game, the Army Corps of Engineers and Humboldt County. Under CDP 1-94-06 currently, the applicant is required to employ a method using Digital Terrain Model (DTM) techniques. These methods utilize aerial photogrammetry and computer software to produce a Digital Terrain Model (DTM) of the Sandy Prairie Landform each year. Sequential DTM's depicting the previous and current year's surface topography for the entire riverbed is used to calculate net gravel recruitment. Volumetric calculations determine the volume of recruitment and replenishment for the entire area. Contour maps identify the location and area of replenishment. (A more detailed description of the Annual Environmental Assessment and Monitoring program is attached as Exhibit 8). This method surveys an entire unit of the river rather than just the project site itself, allowing cumulative changes in the river to be considered to avoid riverbed degradation from the mining operation. The DIM monitoring had been proposed by the applicant when the original permit was reviewed by the Commission and the Commission incorporated the monitoring program into the special conditions attached to the permit.

However, since the applicant's project was initially approved, new regulatory requirements have been adopted that affect the annual monitoring required by various agencies. These include the Department of Fish & Game 1601/1603 Streambed Alteration Agreement guidelines, Humboldt County's "Interim Monitoring Program and Adaptive Management Practices for the Lower Eel and Van Duzen Rivers," and the County's establishment of a review team to provide scientific input on the gravel operations. This committee, known as CHERT (County of Humboldt Environmental Review Team) is composed of independent fluvial geomorphologists, biologists,

and botanists. CHERT has the authority for the County to review all annual mining plans and prescribe changes to those plans as deemed necessary. CHERT integrates all of the monitoring data developed by the gravel operators for geomorphic evaluations of the streambed and also evaluates and recommends practices designed to preserve and enhance riparian vegetation and wildlife habitat.

Finally, due to an amendment of the U.S. Army Corps of Engineers Clean Water Act Regulatory Program, the Army Corps of Engineers (the Corps) began actively regulating incidental fill related to gravel mining activities. In an effort to streamline the processing of Corps permits for numerous in-stream gravel operations within Humboldt County, the Corps adopted a Letter of Permission (LOP) procedure for authorizing such projects (LOP 96-1). The LOP was adopted after a series of interagency and public meetings. An applicant for a project covered by the LOP must submit yearly gravel plans and monitoring information to the Corps for approval under the procedure. The Corps incorporated the CHERT review process into its LOP procedure and utilized the same monitoring standards. A feature of the LOP process is that every spring, the local field office of the Corps in Eureka conducts an interagency meeting of representatives of various agencies with regulatory responsibilities over gravel extraction in the County to review the monitoring data provided by the operators and the recommendations of CHERT. Commission staff participated in the first such meeting in the spring of 1997. The interagency meeting is useful for coordinating the review of the different agencies and standardizing requirements among agencies as much as possible.

The amendment proposes to allow the applicant to utilize a method involving surveying cross sections of the areas annually proposed for mining as an alternative to the DTM technique required in the current permit. This alternative method is currently the standard used by other agencies such as Corps of Engineers, the County and the DFG.

### 3. Application of Conditions

As stated in the "Initial Study Proposed Negative Declaration and Project for Revised Conditional Use Permit & Amended Surface Mining and Reclamation Plan, Canevari Timber Company" (September 1996, pg.2) the amendment proposes to "modify the annual gravel extraction monitoring program to incorporate new and revised monitoring requirements, guidelines and review procedures adopted by the United States Army Corps of Engineers (ACOE), the California Department of Fish and Game (DFG), and Humboldt County subsequent to the approval of the current CUP" [conditional use permit]. Since the original CDP was issued, the Commission has also changed the conditions it applies to gravel extraction projects to more closely conform to the requirements of these other regulatory agencies. Rather than have one set of conditions apply to one portion of the property, and a different set for the balance of the property, the Commission finds that the amended project should be treated as a single development, subject to a consistent



set of conditions designed to ensure the protection of coastal resources. As discussed further below, individual gravel extraction projects in the Eel River have a cumulative effect on the river's coastal resources. Coastal Act Section 30250 states in part that new "industrial development...shall...not have significant adverse effects, either individually or cumulatively, on coastal resources." Coastal Act Section 30105.5 states that "'Cumulatively' or 'cumulative effect' means the incremental effects of an individual project shall be reviewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." This amendment proposes to add an area more than 60% again as large as the original size of the project, and operate the combined unit as a single project. A consistent set of conditions is necessary to effectively address the potential individual and cumulative adverse effects of this combined project. Therefore Special Conditions 1 through 4, and 6 through 7 of CDP 1-96-04 are amended and replaced by Special Conditions 1 through 12 contained herein. Since the applicant has already commenced work on "Area B" as addressed in Special Condition 5 of CDP 1-96-04, that condition shall remain in effect with its present expiration date of December 31, 1999.

#### 4. Protection of Riverine Environment

The proposed project involves the extraction of gravel from a river bar that is exposed during low flow summer conditions but is often underwater during the winter when the Eel River is swollen with storm water runoff from throughout its huge drainage basin. A number of Coastal Act policies address protection of the portion of the river environment below the ordinary high water mark from the impacts of developments such as gravel mining operations. The policies include, among others, Sections 30231 and 30233 of the Coastal Act. Section 30231 applies generally to any development in riverine systems and other kinds of water bodies in the coastal zone, and Section 30233 applies to any diking, filling, or dredging project in a river and other kinds of water bodies in the coastal zone. Gravel extraction within a riverbed is a form of dredging within a wetland.

Section 30231 of the Coastal Act provides as follows, in applicable part:

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes...shall be maintained and, where feasible, restored...

Section 30233(a) provides as follows, in applicable part:

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible

mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.

(2) Maintaining existing or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.

(3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland...

(4) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.

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

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

(7) Restoration purposes.

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

...

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary...

The above policies set forth a number of different limitations on what development may be allowed in wetlands and other water bodies within the coastal zone. For analysis purposes, the limitations can be grouped into four general categories or tests. These tests are:

a. that the purpose of the fill is for one of eight uses allowed under Section 30233;

- b. that feasible mitigation measures have been provided to minimize adverse environmental effects;
- c. that the project has no feasible less environmentally damaging alternative; and
- d. that the biological productivity and functional capacity of the habitat shall be maintained and enhanced where feasible

(a) Permissible Use for Dredging of Coastal Waters.

The first test set forth above is that any proposed dredging must be for an allowable purpose under Section 30233 of the Coastal Act. The proposed project involves dredging for mineral extraction.

Section 30233(6) allows dredging for mineral extraction, except in environmentally sensitive areas. Therefore, to the extent that the proposed gravel extraction will avoid environmentally sensitive areas, the proposed gravel extraction is for an allowable purpose under Section 30233 as mineral extraction.

The proposed project has the potential to affect environmentally sensitive areas. The subject Canevari and Christen properties contain significant areas of cottonwood riparian and riparian scrub vegetation at the edge of the riverbank and on bars in the river channel (Exhibits 4, 6). In addition, the river bars may be a nesting site for the Western snowy plover, an endangered species. Furthermore, it is possible that due to seasonal changes in the river, ponded areas could develop on the bar that would leave wetlands, another form of environmentally sensitive habitat.

The Coastal Commission has previously determined through numerous past permit actions that habitat for endangered species, and most forms of riparian vegetation areas are environmentally sensitive. The Commission has consistently conditioned permits for development near such riparian woodlands along streams and rivers to avoid disturbance of riparian areas.

The majority of the riparian scrub vegetation is inundated during high flow periods and is often uprooted and scoured by river flows. The dynamic river can cause the river channel itself to migrate over time, which in turn can eliminate more stands of riparian scrub vegetation from one year to the next. As a result, much of the vegetation is relatively young, having only grown for a season or several seasons since the time of the last inundation severe enough to remove the plants previously growing in their place.

Given that some of this riparian vegetation is very new and underdeveloped, it may not provide habitat values great enough for the vegetation to be characterized as environmentally sensitive.

Section 30107.5 of the Coastal Act defines an "environmentally sensitive area" as:

"Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments."

Under this definition, any area supporting a plant, animal, or their habitat is environmentally sensitive if the area meets two main criteria: (1) the plant, animal, or habitat is either rare or especially valuable because of their special nature or role in an ecosystem, and (2) the area could be easily disturbed or degraded by human activities and developments. The riparian scrub habitat clearly meets the second criteria in that the gravel extraction activities on the river bars, such as that proposed by the applicant, can quickly obliterate any of this habitat the extraction activities come in contact with. With regard to the first criteria, the riparian scrub vegetation is not rare, as it usually does not contain rare or endangered species and can be found extensively on the many gravel bars along North Coast rivers. However, the riparian scrub vegetation can meet the first criteria as it can be especially valuable for its role in the ecosystem. Part of the reason why the habitat is so valuable is its location adjacent to the river. The life-sustaining waters of the river draw many forms of wildlife, and once there, wildlife requires places to forage, nest, and seek cover. The scrub habitat, in combination with the annual vegetation that dominates the gravel bars, supports a variety of wildlife species that use the riparian scrub vegetation for these purposes. Such wildlife includes a number of small mammals such as raccoon, striped skunk, rodents, and gray fox. Numerous bird species also utilize this habitat. Therefore, the riparian scrub vegetation areas are environmentally sensitive areas because they are especially valuable because of their role in the river ecosystem and because they are easily degraded by activities of man.

However, the riparian scrub vegetation must grow to a certain size and mass before it can begin to serve these roles in the ecosystem. A willow sprig growing in isolation that has just taken root and only rises a few inches out of the ground cannot provide much forage area, nesting opportunities, or much screening from predators for birds and animals that choose to use it. As the sprig grows taller, however, and as more riparian plants colonize the area around it, the sprig, and the plants now growing in association with it, can start to provide the forage area, nesting opportunity, and cover that make it especially valuable habitat and therefore an environmentally sensitive area.

There is no clear cut answer, however, to the question of just when in the growth and development of riparian scrub vegetation area it reaches the point where it provides sufficient value for

foraging, nesting, cover, and other habitat functions that it should be considered environmentally sensitive. In discussions with staff of the Department of Fish & Game, Commission staff has learned that there is no specific plant height, diameter, coverage, age, etc of a riparian vegetation area that guarantees habitat values sufficient to characterize the riparian vegetation area as environmentally sensitive. Part of the reason for the uncertainty is that there can be tremendous variability in the values of riparian vegetation of the same size from one location to the next depending on such factors as surrounding habitat and vegetation, surrounding land uses, river configuration, etc.

One existing standard that may provide useful guidance for determining when riparian scrub vegetation reaches the point of becoming environmentally sensitive area is a standard imposed in the U.S. Army Corps of Engineers Letter of Permission (LOP) Procedure authorizing gravel mining in Humboldt County. The LOP, which was first issued in 1996, was developed by the Corps after a number of interagency meetings and consultations with representatives of various state and federal resource agencies. The LOP sets a number of restrictions on the gravel extraction projects that it authorizes. One such restriction concerns riparian vegetation. The restriction states as follows:

"All riparian woody vegetation and wetlands must be avoided to the maximum extent possible. Any riparian vegetation or wetland that is to be disturbed must be clearly identified by mapping. Woody vegetation that is part of a contiguous 1/8 acre complex, or is at least 2 inches diameter breast height (DBH) that is disturbed must be mitigated. Impacts to other woody vegetation must be described and submitted to the Corps and CHERT with the gravel extraction plans. These impacts may require mitigation at the discretion of the Corps..."

The restriction establishes a threshold for when impacts to riparian vegetation must be mitigated. The threshold is reached any time the riparian area that would be disturbed contains woody vegetation that is part of a contiguous 1/8-acre complex or is at least 2 inches diameter at breast height.

The Corps administers its permit program under Section 404 of the federal Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. These laws do not limit mineral extraction in coastal wetlands and other coastal water bodies to the same extent that Section 30233 of the Coastal Act does. As previously stated, 30233(6) prohibits all mining in environmentally sensitive areas. Thus, although the Corps can allow mineral extraction in an environmentally sensitive area so long as mitigation is provided, the Commission simply cannot allow mineral extraction within an environmentally sensitive area at all.

Thus, the Corps' purpose in determining when mitigation should be required is not the same as determining when a riparian vegetation area reaches a level of growth and development such that it should be considered environmentally sensitive.

By requiring mitigation whenever a riparian vegetation area to be disturbed contains woody vegetation that is part of a contiguous 1/8-acre complex or is at least 2 inches diameter at breast height, the standard suggests that vegetation at that level already is providing habitat value. Otherwise, if the vegetation were not providing habitat value there would be no need for mitigation. Therefore, the riparian vegetation must reach a form of growth and development where it provides important habitat values at some point before the Corps threshold is reached. Acknowledgement of this fact is contained in the rest of the Corps standards which indicates that impacts to other woody vegetation not rising to the threshold level must also be described and submitted to the Corps and may require mitigation at the discretion of the Corps.

Therefore, the Commission finds that riparian vegetation areas become environmentally sensitive areas when they have achieved somewhat less growth and development than the riparian vegetation that has reached the Corps' mitigation threshold.

In discussions with the staff of the Department of Fish & Game, Commission staff has discerned that under average growing conditions, a willow tree that is 1 inch in diameter at breast height or part of a contiguous 1-16-acre complex would likely have survived about one growing season. Given that riparian vegetation is only becoming established during the first growing season, the vegetation may not yet provide much habitat value at that point. On the other hand, vegetation that has survived more than one growing season would be more established and more likely to be used by wildlife. Therefore, the Commission finds that the riparian scrub vegetation can be characterized as an environmentally sensitive area when the vegetation contains woody vegetation that is part of a contiguous complex no greater than 1/16-acre or less or is no greater than 1 inch in diameter at breast height. By restricting extraction in riparian vegetation areas that are essentially half as developed, as the riparian areas for which the Corps has determined mitigation must be provided, the Commission will minimize the chances that any riparian vegetation providing important habitat value will be disturbed by the proposed gravel extraction.

To ensure that the mineral extraction proposed by the applicant each year is not performed within an environmentally sensitive riparian vegetation area of the subject properties and thereby remains a dredging and fill development allowable under Section 30233 (6), the Commission attaches Special Condition No. 2 which establishes an annual administrative review process to occur prior to each year's extraction operation. The condition requires, in part, that the applicant submit for the review and approval of the Executive Director an annual gravel extraction plan for the upcoming season together with a botanical survey prepared by a qualified biologist or other professional that maps all vegetation and ponded areas found in potential extraction areas of the

site and highlights the location and extent of all vegetated areas containing woody riparian vegetation that are either (i) part of a contiguous riparian vegetation complex 1/16 of an acre or larger or (ii) one-inch-in-diameter at breast height or greater. The condition requires that the plan be consistent with the extraction limits set forth in Special Condition No. 3, including the restriction of subsection "g" which states that gravel extraction operations shall not disturb or remove any area of riparian vegetation growing on the gravel bar containing woody vegetation that is either (i) part of a contiguous riparian vegetation complex 1/16-of-an-acre or larger or (ii) one-inch-in-diameter at breast height or greater. An exception is made for Extraction Area B where the original permit already authorizes removal of some riparian scrub habitat with requirements for mitigation contained in Special Condition No. 5 of the original permit.

Access to the area that would be added by the proposed amendment is through the presently permitted Canevari property. That access route, in turn, is located immediately adjacent to the well-developed riparian corridor along the edge of the riverbank. Because all of the extracted gravel will be loaded directly on to trucks and hauled to off-site processing areas, truck traffic to and from the extraction operation will be heavy, approximately 75 trips per day in each direction. The continual passing of trucks could degrade the quality of the riparian habitat by raising dust that would coat parts of the habitat. The impacts of truck traffic on the riparian vegetation can be reduced in part, by controlling the dust problem. Therefore, the Commission attaches Special Condition No. 9, which requires the applicant to regularly water, the roadway with the use of a water truck to keep the dust down.

Another form of environmentally sensitive area that could be found on the site is ponded wetlands. It is possible that the process of aggradation and degradation of the bar with fluctuations of river flows could create depressions on the bar from year to year that could become wetlands. Through numerous permit actions, the Commission has long held that wetlands are a form of environmentally sensitive habitat area that should be protected. Therefore, the Commission has included among the extraction limitations contained in Special Condition No. 3 the restriction of subsection "h" which states that gravel extraction operations shall not disturb any ponded areas. The requirement of Special Condition No. 2 that the applicant submit for the review and approval of the Executive Director an annual gravel extraction plan consistent with the limitations of Special Condition No. 3 for the upcoming season together with a botanical survey prepared by a qualified professional that maps all ponded areas found in potential extraction areas of the site, will provide a process that will ensure that mineral extraction will not be performed in ponded wetlands.

Other environmentally sensitive areas that may be present at both the Canevari and Christen properties are seasonal nesting sites of the Western snowy plover. As noted previously, the Western snowy plover is a federally listed endangered species which in the last two years, has been observed nesting on the gravel bars of the lower Eel River during May through early August.

Three plovers were observed last year on the bar at the subject parcel. At other times of the year, the bird has not been observed. As the Commission considers the habitats of rare and endangered species to be environmentally sensitive areas, the Commission finds those areas utilized by the Western Snowy Plover during the nesting season when the birds are present to constitute environmentally sensitive areas. Therefore, the Commission has included among the extraction limitations contained in Special Condition No. 3 the restriction of subsection "i" which requires that gravel extraction operations avoid Western snowy plover habitat by either not commencing until after the nesting season, or commencing only after August 16 and after a biologist approved by the USFWS has surveyed the site and either found no plover nests, or has found some but will conduct daily surveys to ensure a 300 meter buffer area is maintained around the nests that have been found. This limitation is consistent with the recommendations of the USFWS to avoid disturbance of the endangered bird species. The requirement of Special Condition No. 2 that the applicant submit for the review and approval of the Executive Director an annual gravel extraction plan consistent with the limitations of Special Condition No. 3 for the upcoming season together will provide a process that will ensure that mineral extractions will not be performed in Western Snowy Plover nesting sites during the time of nesting when such areas constitute environmentally sensitive areas.

Therefore, as conditioned herein, the proposed gravel extraction operation is consistent with the use limitations of Section 30233 of the Coastal Act on dredging in coastal water bodies as the extraction operation is for mineral extraction in areas that are not environmentally sensitive, consistent with Section 30233(6).

(b) Feasible Mitigation Measures

The second test set forth by Sections 30231 and 30233 is that that feasible mitigation measures have been provided to minimize adverse environmental effects.

Depending on the manner in which the gravel operations are conducted, the portions of the proposed project to be conducted below the ordinary high water mark could have six potential adverse effects on the natural environment of the lower Eel River. These impacts include alteration of the river bed and increased bank erosion, impacts on fisheries, impacts on environmentally sensitive riparian vegetation on the bar, impacts on rare and endangered species such as impacts to Western snowy plover, impacts to ponded wetlands that might form on the bar in future years, and impacts to the water quality of the river. The potential impacts and their mitigation are discussed separately in the following sections:

(1) River Morphology



As extensively discussed in the findings on the original permit 1-94-06 (Exhibit 6), a potential major impact of gravel mining operations is degradation of the riverbed and erosion of the riverbanks. Such impacts can occur if the amount of gravel extracted from a particular part of the river over time exceeds the amount of gravel deposited at the site through natural recruitment, or downstream transport of sand and gravel by the waters of the river. Bed degradation and riverbank erosion can also occur as a result of the manner in which the gravel is extracted. For example, according to the scientific committee examining gravel extraction on the nearby Mad River, if bars are skimmed too flat and too close to the low-water surface, at slightly higher stages the river will tend to spread across the bars, reducing the depth of flow and the channel may both migrate rapidly and break into a number of shallow channels or threads. This is also true for stream sections where aggradation of material is a problem. Such sites will tend to trap gravel, which would otherwise move downstream and may trap fish migrating up and down the river.

The applicant proposes to extract a maximum of 200,000 cubic yards of sand and gravel per year from the site, with a maximum of 60,000 cubic yards annually coming from the area that would be added by the proposed amendment. Although the amount is relatively small compared to many of the gravel operations on the lower Eel River, extraction without consideration to replenishment of the site could cause bed degradation and riverbank erosion.

Therefore, to ensure that the mineral extraction proposed by the applicant each year does not exceed the natural replenishment of gravel and does not degrade the river bed, the Commission attaches Special Condition No. 2 which establishes an annual administrative review process to occur prior to each year's extraction operation. The condition requires, in part, that the applicant submit or the review and approval of the Executive Director an annual gravel extraction plan for the upcoming season together with field surveys and annual assessments that will determine the levels and volume of gravel recruitment during the last winter high flow period and identify areas where mining can occur without causing bed degradation. The condition requires that the plan be consistent with the extraction limits set forth in Special Condition No. 3, including the restriction of subsection "e", which states that the excavation of in-stream aggregate shall be limited to those sites that have experienced sufficient replenishment to accommodate the proposed mining.

Other limitations imposed by Special Condition No. 3 will also ensure that configuration of mining to be performed will also not lead to adverse bed degradation. Subsection "a" of the condition states that except with respect to Extraction Area B, the applicant shall extract material only by gravel skimming in a manner that will maintain a sloped extraction area, except for excavation to improve channel depth or to create "cold water refugia" for the benefit of Fish species that has been specifically approved for this purpose by the Department of Fish and Game. Leaving the bar with a prescribed slope will encourage future gravel recruitment and minimize bed degradation. Subsection "c" of the condition states that excavation shall not occur in the active channel (except for the excavation approved by the Department of Fish and Game for

fisheries enhancement) and shall be limited to areas a minimum of 1 vertical foot elevation above the current water surface and a minimum of 6 feet horizontally from the current water's edge. This requirement will ensure that disturbance of the active channel will be avoided. To further minimize the chances of bed degradation and stream bank erosion and its consequences to existing structures along the river, subsection "d" of the condition states that no gravel extraction shall be performed within 500 feet of a bridge or any other structure (i.e. water intake, dam, etc.). This restriction will reduce to a level of insignificance any potential impact on bridges, and other public works facilities that might exist in the area.

The Commission finds that the annual mining plan and monitoring procedures imposed by Special Condition No. 2, together with the above-described extraction limitations imposed by Special Condition No. 3 will ensure that the project will not cause river bed degradation.

## (2) Fisheries

As noted previously, the Eel River and its tributaries are ranked among the most significant fisheries in Northern California for anadromous species, including the Coho salmon, which has recently been listed as a "threatened" species pursuant to the Federal Endangered Species Act. The project area and the lower Eel River is mainly important for the anadromous fish as a migration route to and from the upstream spawning grounds. This stretch of the river itself is not a significant fish spawning area.

Extraction of gravel during the summer months will not adversely affect fisheries. However, gravel mining operations need to be out of the river bed before the rainy season to prevent impacts on fisheries, as the runs of the various species of anadromous fish up and down the river increase in the fall with the rise in river levels and remain at high levels through the early spring.

In recent 1603 Streambed Alteration Agreements issued for gravel extraction near this site, the Department of Fish & Game has imposed a seasonal limitation on gravel extraction operations of June 1 through October 15 each year, which corresponds to the period when potential impacts to fisheries is lowest. Therefore, the Commission attaches Special Condition No. 5 which states that the applicant proposes that extraction shall only be performed during the summer months ending October 1 of each year, with reclamation activities to be completed by October 15 to ensure no disturbance to anadromous fish.

The installations of culverted fill crossings in the low flow channel or major secondary channels could also adversely affect fisheries. Culverted fill crossings are prone to being blocked by debris in ways that can inhibit fish passage. Another crossing method commonly used in gravel extraction operations on the Eel River and elsewhere is to create a crossing using 60-foot-long railroad flatcars placed side by side in a manner that completely spans the channel and does not

require the placement of fill or culverts in the channel. By avoiding any change to the channel itself, such crossings do not affect fish using the channel. Therefore, the Commission attaches Special Condition No. 11, which requires that any proposed seasonal crossing of the low flow channel or secondary channels that can be expected to maintain flow year round (and thus may receive significant use by fish) shall be of the railroad flatcar variety. The Commission notes that the condition would allow for overflow channels that are dry during parts of the summer to be crossed with the kind of culverted fill crossings that have been proposed by the applicant.

The Commission finds that the limitations of Special Conditions 5 and 11 will ensure that the project will not adversely affect fisheries.

### (3) Riparian Vegetation on the Bar

As indicated in the applicant's vegetation surveys (Exhibit 4), the proposed project has the potential to adversely affect environmentally sensitive riparian scrub vegetation on the Christen's Bar. To prevent disturbance of the habitat, Special Condition No. 2 requires, in part, that the applicant submit for the review and approval of the Executive Director an annual gravel extraction plan for the upcoming season together with a botanical survey prepared by a qualified biologist that maps all vegetation and ponded areas found in potential extraction areas of the site and highlights the location and extent of all riparian vegetation that meets the criteria discussed in Finding 4(a). The condition requires that the plan be consistent with the extraction limits set forth in Special Condition No. 3, including the restriction of subsection "g" which states that gravel extraction operations shall not disturb or remove any area of riparian vegetation growing on the gravel bar that meets the criteria, with the exception of such vegetation growing in Extraction Area B which has previously authorized by the original permit. In this manner, disturbance to all of the environmentally sensitive riparian vegetation on the bar will be avoided.

### (4) Western Snowy Plover and Other Rare and Endangered Species

As noted previously, the Western snowy plover, an endangered species, has been observed nesting on the gravel bars of the lower Eel River during May through early August within the last three years. The bird does not use the gravel bars at other times of the year. Because the species is on the federal list of endangered species, the responsibility for protecting the species rests with the U.S. Fish & Wildlife Service. The Service has established a protocol for allowing gravel mining to proceed without disturbance to the plover. The Army Corps of Engineers has required applicants under its LOP procedure to adhere to the protocol. The protocol requires that gravel extraction operations avoid Western snowy Plover habitat by either not commencing until after the nesting season, or commencing only after August 16 and after a biologist approved by the USFWS has surveyed the site and either found no plover nests, or has found some but will conduct daily surveys to ensure a 300 meter buffer area is maintained around the nests that have

been found. As the USFWS recommends this protocol to avoid disturbance of the Western Snowy Plover, the Commission incorporates the protocol into the extraction limitations imposed in Special Condition No. 3. The requirement of Special Condition No. 2 that the applicant submit for the review and approval of the Executive Director an annual gravel extraction plan consistent with the limitations of Special Condition No. 3 will provide a process that will ensure that mineral extractions will not be performed in Western Snowy Plover nesting sites or otherwise disturb this endangered species.

To ensure that gravel mining plans submitted pursuant to Special Condition 2 in future years will be designed to avoid any new habitat of threatened or endangered species that colonize the site in future years, the Commission includes in the list of extraction limitations imposed through Special Condition No. 3, subsection "j". The subsection states that gravel extraction shall be designed to avoid adversely affecting any other state or federally listed rare or endangered species that is discovered at the project site during the life of the permit.

#### (5) Ponded wetlands

It is possible that the process of aggradation and degradation of the bar with fluctuations of river flows could create depressions on the bar from year to year that could become wetlands. Therefore, the Commission has included among the extraction limitations contained in Special Condition No.3 the restriction of subsection "n" which states that gravel extraction operations shall not disturb any ponded areas. The requirement of Special Condition No. 2 that the applicant submit or the review and approval of the Executive Director an annual gravel extraction plan consistent with the limitations of Special Condition No. 3 for the upcoming season together with a botanical survey prepared by a qualified biologist that maps all ponded areas found in potential extraction areas of the site, will provide a process that will ensure that mineral extraction will not be performed in ponded wetlands.

#### (6) Water Quality

If properly managed, the proposed gravel extraction operations should not adversely affect the river's water quality. However, excessive or sloppy gravel extraction operations could adversely impact water quality, and ultimately the biological productivity and fishery resources of the river. For example, pushing gravel materials into the water could degrade water quality and biological productivity by increasing the turbidity of the water.

To prevent such occurrences, the Commission attaches Special Condition No. 8, which requires that gravel extraction operations not push any material into the river.

#### (7) Conclusion

The Commission finds, that as conditioned herein, the proposed gravel extraction operation is consistent with the requirement of Section 30233 of the Coastal Act that feasible mitigation measures be provided to minimize adverse environmental effects. The gravel extraction limitations imposed through Special Condition No. 3 that are designed to prevent impacts to river morphology, riparian vegetation, threatened and endangered species, ponded wetlands, and water quality, together with the requirements of Special Condition Nos. 5 and 8 to limit the extraction season and avoid placement of material into the active channel will ensure that the proposed gravel extraction operation will avoid adverse impacts on the Eel River. Therefore, the proposed project, as conditioned, will minimize adverse environmental effects by avoiding such impacts altogether.

(c) Alternatives

The third test set forth by the Commission's dredging and fill policies is that the proposed dredging or fill project must have no feasible less environmentally damaging alternative. In this case, the Commission has considered the various identified alternatives, and determines that there are no feasible less environmentally damaging alternatives to the project as conditioned by Special Conditions 1-12. A total of four possible alternatives have been identified, including: (1) the no project alternative; (2) obtaining sand and gravel from quarry operations, (3) obtaining sand and gravel from terrace deposits, and (4) modifying the proposed project. As explained below, each of these alternatives have problems that make them infeasible and/or more environmentally damaging than the proposed project.

- (1) The No Project Alternative. The no project alternative means that no gravel extraction would occur at the site. Without extraction from this site, an equivalent amount of sand and gravel would have to be obtained from other sources to meet the region's demand for cement and concrete. Increasing production from other river bar extraction operations would have environmental impacts similar to or greater than the proposed project. The proposed project is located in an area where gravel has historically accumulated and has historically been mined. Mining in many other parts of the river where gravel does not accumulate could lead to changes in channel morphology which in turn, could cause a variety of adverse impacts such as river bank erosion, the undermining of bridge supports, erosion of environmentally sensitive habitat, and increased sedimentation. As discussed below, obtaining additional sands and gravel from quarry operations or from terrace deposits from the valley floors of local rivers would also create environmental impacts similar to or greater than the proposed project. Therefore, the Commission finds that the no project alternative is not a less environmentally damaging alternative to the project as conditioned.

- (2) Obtaining Sand and Gravel From Quarry Operations. Excavation from the river could be avoided if an equivalent amount of sand and gravel could be obtained from upland rock quarries. As discussed in the Final Program EIR on Gravel Removal from the Lower Eel River, certified by Humboldt County in 1992, there are few quarries in nearby areas where it would be economically feasible to obtain sufficient material. The substrate of nearby areas of Humboldt County is composed mostly of the Franciscan formation that is made up of large masses of graywacke and siltstone intermixed with incompetent clay and silt material. This composition of material generally does not lend itself to quarrying. The quarries that are found in the region are generally in remote locations where water for processing is scarce and the rock is generally of poor quality. Therefore, the Commission finds that substituting gravel extracted from quarry operations is not a feasible alternative.
  - (3) Obtaining Sand and Gravel from Terrace Deposits. Excavation from the river could be avoided if an equivalent amount of sand and gravel could be obtained from terrace deposits in the flood plain of the Eel, Van Duzen, or Mad Rivers. The floors of these river valleys are underlain by substantial amounts of gravel deposited over thousands of years and provide upland rock quarries. However, commencing gravel extraction from these terrace deposits would create its own environmental impacts. Much of the undeveloped valley floor of each of these rivers is devoted to agricultural and timber production uses. Converting productive coastal agricultural lands or forestlands to gravel extraction or other uses would not be consistent with Coastal Act policies which call for the maintenance of lands suitable for agriculture and timber production in those uses. Most of the remaining undeveloped areas of these river valleys are currently covered with riparian habitat and other environmentally sensitive habitats. Extracting gravel from such areas would result in far more impact to environmentally sensitive habitat than extraction at the project site as conditioned by the permit to avoid all riparian habitat. Therefore, the Commission finds that substituting gravel extracted from terrace deposits in local river valleys is not an environmentally less damaging alternative.
  - (4) Modifying the Proposed Project, As Conditioned. Various modifications to the proposed project as conditioned could be proposed in an attempt to reduce the environmental effects. However, this modification would not result in less impact than the project authorized by Permit 1-97-69. As discussed previously, the proposed project has been conditioned to avoid adverse impacts to coastal resources. Therefore, the Commission finds that modifying the proposed gravel extraction would not create an environmentally less damaging alternative, as significant impacts have already been avoided by the proposed project, as conditioned.
- (d) Maintenance and Enhancement of Estuarine Habitat Values.

The fourth general limitation set by Sections 30231 and 30233 on dredging and fill projects is that any proposed dredging or fill project must maintain and enhance the biological productivity and functional capacity of the habitat, where feasible.

As discussed in the section of this finding on mitigation, the conditions of the permit will ensure that the project will not have adverse impacts on water quality, riparian vegetation, rare and endangered species, ponded wetlands, stream morphology, and other coastal resources. By avoiding impacts to coastal resources, the Commission finds that the project will maintain the biological productivity and functional capacity of the habitat consistent with the requirements of Sections 30231 and 30233 of the Coastal Act.

5. Environmentally Sensitive Habitat Area

Section 30240 of the Coastal Act states that environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values and that development in areas near such sensitive habitat areas shall be sited and designed to prevent significant adverse impacts to these areas.

The proposed amendment will not adversely affect riparian habitat. None of the habitat will be disturbed by the extraction or processing operations themselves except for that in Extraction Area B. Excavation in Area B was previously authorized in the original permit. In addition, existing haul roads through the riparian area will be used to truck gravel from the extraction site to the processing facility. No new haul roads are proposed to be cut through the riparian woodland. To ensure that no new haul roads are created through the riparian woodland, the Commission attaches Special Condition No. 8 which requires that the proposed project not disturb or remove any of the established riparian vegetation at the site and prohibits the cutting of new haul roads through the habitat.

As conditioned, the Commission finds that the project is consistent with Section 30240 of the Coastal Act, as the project will avoid significant adverse impacts to the environmentally sensitive habitat area found at the site.

6. Visual Resources.

Section 30251 of the Coastal Act provides in applicable part that the scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall: (a) be sited and designed to protect views to and along the ocean and scenic coastal areas, and (b) be visually compatible with the character of surrounding areas.

The gravel extraction operations will generally not be visible from Highway 101, the principal public road in the area, although the stockpiles in the processing yard outside of the Commission's jurisdiction are visible from Highway 101. The processing yard has existed at the site for many years, and many of the approximately dozen gravel extraction operations occurring along the lower Eel River are similarly visible from Highway 101 and other public roads. The proposed project will not be any more prominent than the gravel extraction and processing activities that have occurred in the past. Therefore, the Commission finds that the proposed project is visually compatible with the character of the area as gravel extraction operations here and in the vicinity have long been parts of the view shed.

To ensure that the Commission would have the opportunity to review and future proposals by the applicant to increase the height of the stockpiles or other aspects of the project that could affect visual resources for their conformity with Section 30251 of the Coastal Act, the Commission attaches Special Condition No. 10. The condition states that any significant changes to the proposed operation shall require an amendment of the permit.

Therefore, the Commission finds that, as conditioned, the proposed project is consistent with the visual resource policies of Section 30251 of the Coastal Act as the project is compatible with the visual character of the surrounding area and will not block views to and along the coast.

#### 7. Public Access.

The project is located between the first public road and the sea (the Eel River is considered to be an arm of the sea in this area).

Coastal Act Section 30210 requires that maximum public access opportunities be provided when consistent with public safety, private property rights, and natural resource protection. Coastal Act Section 30211 require that development not interfere with the public's right of access to the sea where acquired through use. Coastal Act Section 30212 requires that public access from the nearest public roadway to the shoreline and along the coast be provided in new development projects, except in certain instances, as when adequate access exists nearby. In applying Sections 30210, 30211, and 30212, the Commission is limited by the need to show that any denial of a permit application based on those sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential public access.

The Program EIR indicates that recreational use of the river in this particular section of the river is very limited, largely because there are very few access points to the river. The principal public access use of the project site that does occur is by fishermen who go out to the river channel for recreational fishing. Other public access and recreational uses of this stretch of the river include



canoeing and kayaking. The prime fishing seasons occur during the wet months, when gravel extraction is not occurring. The peak canoeing and boating use occurs in the spring before the gravel extraction season begins. To the extent that canoeists and kayakers do use the river channel during the extraction season, the provisions of Special Condition No. 11 will ensure that any truck crossings of the channel installed by the applicant will not block passage down the river. The condition requires that any proposed seasonal crossing of the low flow channel or secondary channels that can be expected to maintain flow year round shall be of the railroad flatcar variety rather than culverted fill crossings. The condition also requires that the flatcar crossing be installed in such a manner that a minimum 3-foot vertical clearance is maintained above the surface of the water. Canoes and kayaks would be able to pass through such a crossing. Thus, the project will not significantly affect the fishermen, canoeists, or other recreational boaters. Furthermore, gravel extraction operations have been occurring at the site for many years. The continued extraction authorized by this permit will not create any additional burdens on public access than have existed in the past. The project will not create any new demands for fishing access or other public access use.

Therefore, the proposed project does not appear to have any adverse effect on public access. The Commission finds that the proposed project, which does not include any new public access, is consistent with the public access policies of the Coastal Act.

#### 8. Permit Expiration.

Regulation of gravel mining operations along the Eel River has been evolving rapidly over the last few years and is likely to continue to evolve in the future. The development of a river management plan is called for in the Program EIR for the gravel mining operations along the lower Eel River. The review of standardized monitoring data only recently required by the local Humboldt County review committee, the Department of Fish & Game, the U.S. Army Corps of Engineers and other regulatory bodies may be beneficial in suggesting ways in the future that the gravel operations can be conducted to more optimally protect the river. Therefore, to enable the Commission to review future mining at the applicant's site in light of the new information and changed circumstances that may develop over the next few years, the Commission attaches Special Condition No. 7, which states that the permit shall expire on December 31, 2003.

The Commission notes that it may be necessary for the applicant to amend this authorization even before expiration of the permit at the end of 2003. The Eel River is a dynamic environment that can change dramatically in the course of a single winter due to extreme high water flows. Standard Condition No. 3 requires that the project adhere to the project plans submitted with the application, as modified by the conditions of the permit. In the event that changes in the riverine environment necessitate changes to the extraction and/or reclamation plans for the project, such changes will require further review by the Commission.

9. State Lands Commission Review.

The project is located in the bed of the Eel River, a navigable river, between the ordinary high water marks. As such, the State of California may hold a public trust easement and other property interests in the site. Any such property interest of the State would be administered by the State Lands Commission.

The applicant obtained a lease from the State Lands Commission for prior activities at the subject area authorizing extraction for five years. This lease expired in September of 1997. To assure that the applicant has a sufficient legal property interest in the site to carry out the project and to comply with the terms and conditions of this permit, the Commission attaches Special Condition No. 1 which requires that the applicant submit evidence that any necessary authorization from the State Lands Commission has been obtained prior to issuance of the permit.

10. Department of Fish and Game Review.

The project requires an annual 1603 streambed alteration agreement from the Department of Fish and Game. The applicant has not yet received an agreement for the 1998 gravel extraction season. Therefore, to ensure that the project area reviewed by the Department of Fish and Game is the same project area that was reviewed under this permit by the Commission, and to ensure that the requested amount of gravel extraction does not exceed the seasonal extraction limits established under Special Condition No. 3, the Commission attaches Special Condition No. 12 which requires that prior to commencing each gravel extraction season, the applicant submit a copy of a 1603 agreement from the Department of Fish and Game that is valid for that season.

11. U.S. Army Corps of Engineers Review.

The project is within and adjacent to a navigable waterway and is subject to review by the U.S. Army Corps of Engineers (Corps). Pursuant to the Federal Coastal Zone Management Act, any permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Under agreements between the Coastal Commission and the U.S. Army Corps of Engineers, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. To ensure that the project ultimately approved by the Corps is the same as the project authorized herein, the Commission requires as part of Special Condition No. 4 that prior to commencing each gravel extraction season, the applicant demonstrate that it has all necessary approvals from the U.S. Army Corps of Engineers for the proposed gravel extraction to be performed that season.

12. 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 effects which the activity may have on the environment.

The proposed project has been conditioned in order to be found consistent with the policies of the Coastal Act that restrict the filling and dredging of coastal waters and require the protection of the biological productivity of coastal waters. Mitigation measures, including requirements that (1) limit extraction to avoid environmentally sensitive habitat areas, rare and endangered species, migratory fish, and extraction under conditions that could lead to changes in the river morphology, (2) call for the preparation of annual surveys of channel conditions and biological resources that are to be considered in the preparation of annually gravel extraction plans to be reviewed by the Commission and other agencies, will minimize all adverse environmental impacts. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact, which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act and to conform to CEQA.

## ATTACHMENT A

### 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. 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 of 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.

1-94-06A

CANEVARI TIMBER COMPANY/CHRISTEN PROPERTY

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**Exhibits**

1. Regional Location
2. Site Location
3. Project Area
4. Habitat and Channel Morphology
5. Proposed Mining Areas
6. CDP 1-94-06 (Original Canevari permit)
7. Annual Assessment



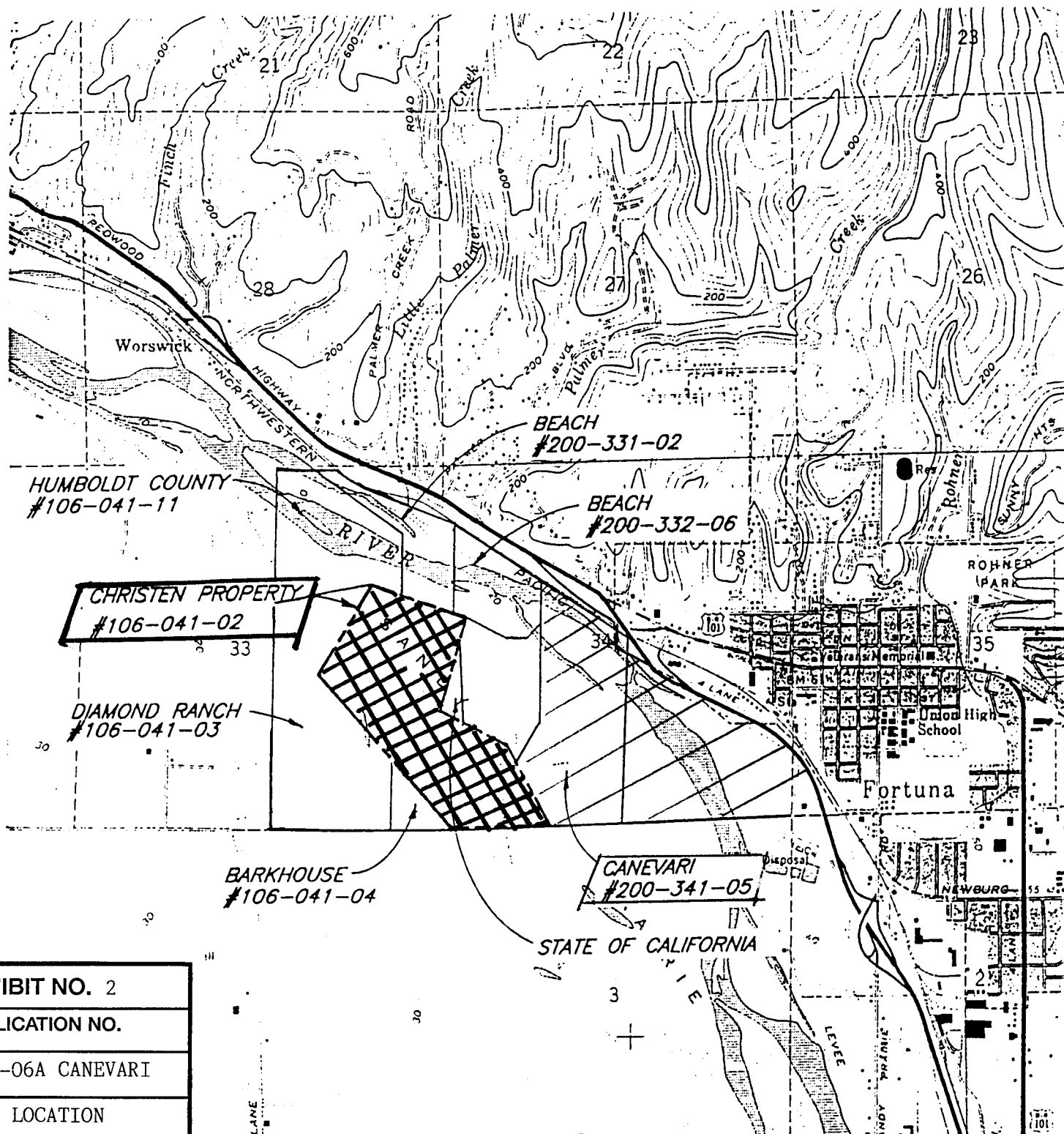


EXHIBIT NO. 2
APPLICATION NO.
1-94-06A CANEVARI
SITE LOCATION

#### APPLICANTS:

ROBERT AND JENNIE CANEVARI  
PO BOX 686  
FORTUNA, CA 95540

JANUARY, 1997  
AP# 106-041-02

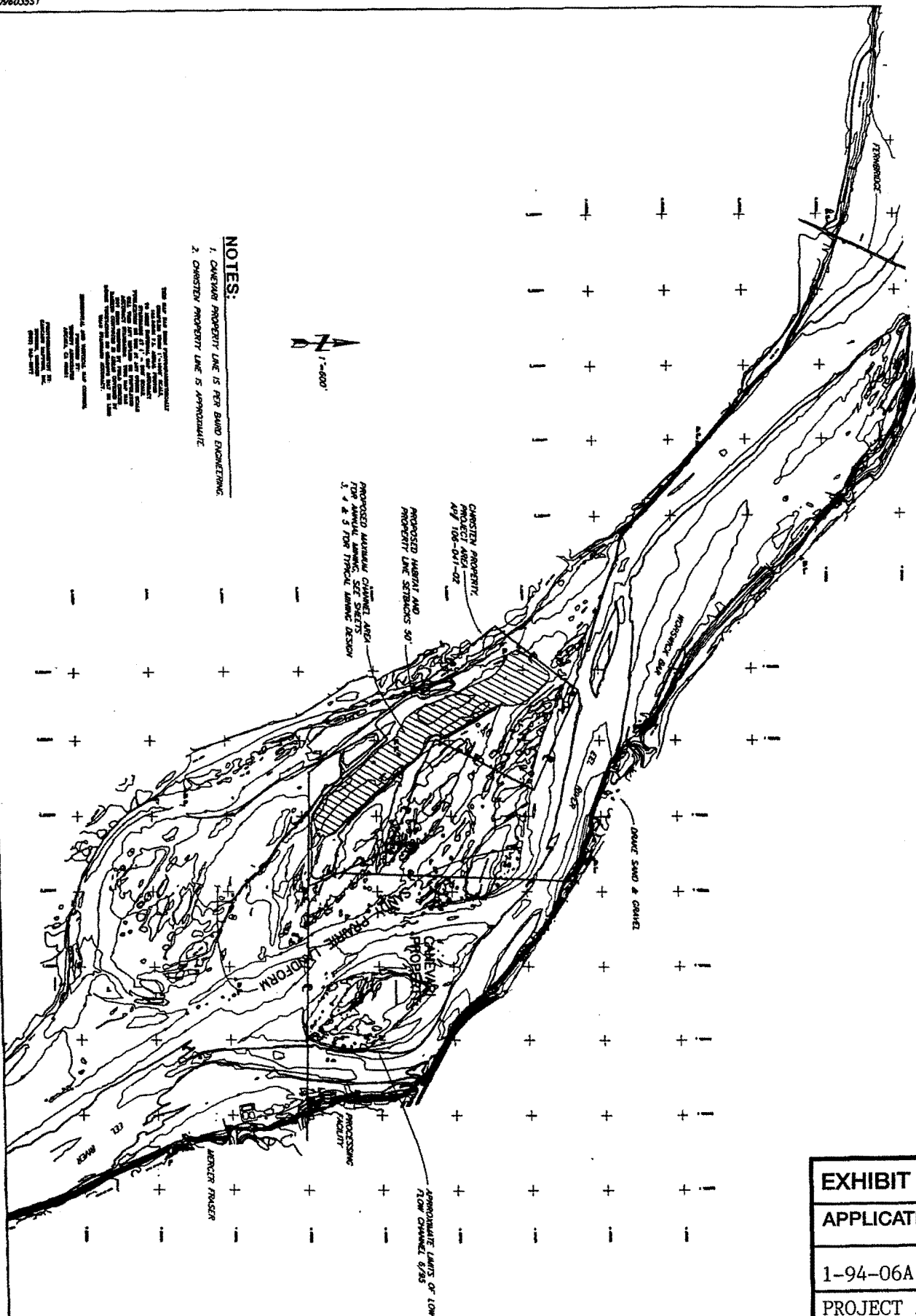
CHRISTEN PROPERTY  
AMENDMENT TO SURFACE MINING  
AND RECLAMATION PLAN

#### SITE LOCATION

SHN 096035  
AUGUST, 1996

FIGURE 4





**NOTES:**

1. CANEVARI PROPERTY LINE IS PER BARD ENGINEERING.
2. CHRISTEN PROPERTY LINE IS APPROXIMATE.

THIS MAP WAS PREPARED BY THE CONSULTING ENGINEERS & GEOLOGISTS, INC. (CE&G) FOR THE PROJECT OF THE SANDY PRAIRIE LANDFORM AND CHRISTEN PROPERTY PROJECT AREA. THE MAP IS BASED ON AERIAL PHOTOGRAPHS AND FIELD SURVEY DATA. THE MAP IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN CONSENT OF CE&G. THE MAP IS THE PROPERTY OF CE&G AND IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF CE&G. THE MAP IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN CONSENT OF CE&G. THE MAP IS THE PROPERTY OF CE&G AND IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF CE&G.

EXHIBIT NO. 3
APPLICATION NO.
1-94-06A CANEVARI
PROJECT AREA

FIGURE 1

SHEET 1 OF 5 DATE 7/98 PROJECT NO. 0960355		AMENDMENT TO CANEVARI PROPERTY SURFACE MINING AND RECLAMATION PLAN SANDY PRAIRIE LANDFORM AND CHRISTEN PROPERTY PROJECT AREA		DESIGNED BY DC DRAWN BY LU CHECKED BY DC APPROVED BY	NO. DATE REVISION BY	<b>SHN</b> CONSULTING ENGINEERS & GEOLOGISTS 912 W. Webster Durham, CA 95001 FAX (707)441-8877	VERIFY SCALES 1" = 400' FOR THE HORIZONTAL, 1" = 10' FOR THE VERTICAL IF NOT SHOWN ON THIS SHEET, VERIFY SCALE, ACCORDING
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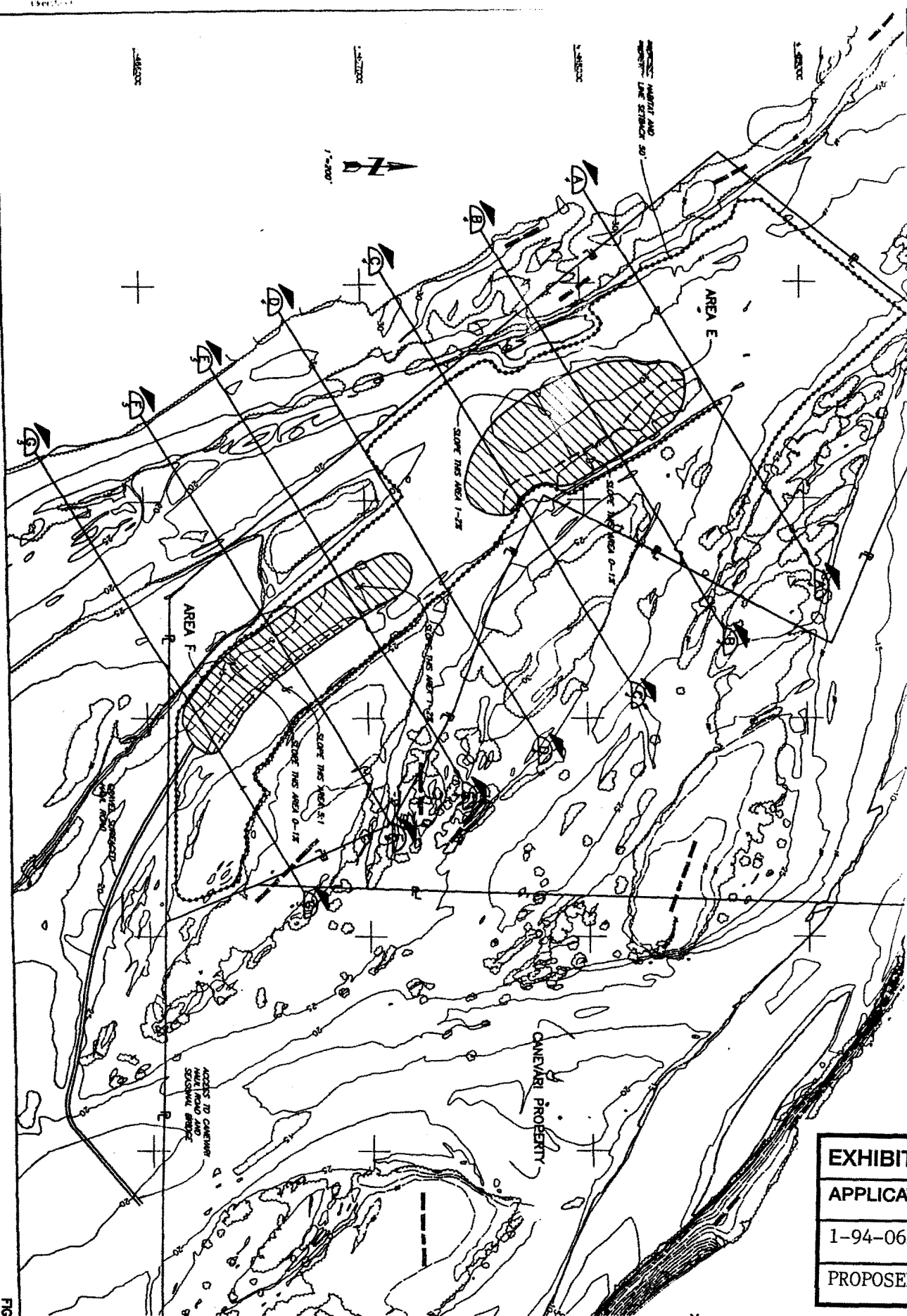


EXHIBIT NO. 5
APPLICATION NO.
1-94-06A CANEVARA
PROPOSED MINING AREA

FIGURE 3

AMENDMENT TO CANEVARA PROPERTY SURFACE MINING AND RECLAMATION PLAN CHRISTEN PROPERTY PROJECT AREA MINING AREAS "E" & "F"		DRAWN BY OR LU/RW OR DC DATE	NO.	DATE	REVISION	BY	<b>SH</b> CONSULTING ENGINEERS & GEOLOGISTS 812 W. Webster El Paso, TX 79901 PH: (915) 441-8877	SHEET 3 OF 5 DATE 7/86 PROJECT 1-94-06A
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## CALIFORNIA COASTAL COMMISSION

NORTH COAST AREA

55 FREMONT, SUITE 2000

SAN FRANCISCO, CA 94105-2219

(415) 904-5260

EXHIBIT NO. 6
APPLICATION NO.
1-94-06A CANEVARI
CDP 1-94-06 (ORIGINAL CANEVARI PERMIT)

*Ju 14a*

RSM



Filed:	February 24, 1994
49th Day:	April 14, 1994
180th Day:	August 23, 1994
Staff:	Robert Merrill-E
Staff Report:	April 1, 1994
Hearing Date:	April 12, 1994
Commission Action:	

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 1-94-06

APPLICANTS: CANEVARI TIMBER COMPANY

PROJECT LOCATION: At the Sandy Prairie landform within the Eel River, at the end of Dinsmore Drive, west of Fortuna, Humboldt County (APNs 200-341-02, 200-341-04, 200-341-05, 200-351-02).

PROJECT DESCRIPTION: Seasonally extract up to 200,000 cubic yards of sand and gravel per year from river gravel bars and install seasonal truck crossing of the low water channel consisting of two flat cars placed side by side.

LOCAL APPROVALS RECEIVED: Humboldt County Conditional Use Permit CUP 57-912), Surface Mining Reclamation Plan (SMR 10-912), and Program and Supplemental Environmental Impact Reports

OTHER APPROVALS REQUIRED: State Lands Commission General Lease; California Department of Fish & Game Streambed Alteration Agreement; U.S. Army Corps of Engineers Section 404 permit.

SUBSTANTIVE FILE DOCUMENTS: Humboldt County LCP.

STAFF RECOMMENDATION:

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, is located between the sea and the first public road nearest the shoreline and is in conformance with the public access and public recreation policies 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 attached.

III. Special Conditions.

1. State Lands Commission Review. PRIOR TO ISSUANCE of the coastal development permit, the applicant shall submit to the Executive Director a copy of the approved general lease for the project required from the State Lands Commission.

2. Annual Administrative Approval to Continue Operations. COMMENCING WITH THE 1994 EXTRACTION SEASON, PRIOR TO THE START OF SEASONAL GRAVEL EXTRACTION OPERATIONS, the applicant shall submit for the review and approval of the Executive Director an annual report that contains: (1) a copy of the California Department of Fish and Game's annual 1603 agreement for the coming gravel extraction season; (2) a copy of any necessary U.S. Army Corps of Engineers permit granting approval for the project during the coming gravel extraction season; and (3) annual environmental assessments and annual monitoring surveys conducted and prepared in accordance with the description of the Annual Environmental Assessment and Monitoring Program submitted by the applicant, dated March 25, 1994, and attached as Exhibit No. 12 of the staff report. The annual environmental assessment and annual monitoring surveys will help determine changes in habitat values, changes to morphology and surface topography, areas of replenishment, when aggregate can be excavated without causing river bed degradation, the levels and volume of recruitment, the quantity and location of gravel extraction for the coming season, and compliance with the proposed mining and reclamation plans. The program shall incorporate the standards for performing surveys developed by the California Department of Fish and Game Region 1 for Fish and Game Code 1603 agreements, and by the Inter-agency committee headed by Mines and Geology that has developed an Instream Mining and Monitoring Program. The Executive Director shall approve the annual report if the report adequately provides the required information and if the proposed gravel extraction for the coming season is consistent with the terms and conditions of this permit, including the requirement of Special Condition No. 3, regarding seasonal extraction limits. The permittee shall not commence gravel extraction operations for the season until the Executive Director has approved the annual report in writing.

3. Annual Extraction Limits.

The applicant shall extract no more than 200,000 cubic yards of material from the site in any given year. In addition, in any given year if there is a net reduction in surface elevation for Sandy Prairie's bankfull bed as determined by the annual environmental assessment and monitoring program, no mining shall occur within the bankfull channel bed. If there is no net change in surface elevation, no mining shall occur within the active channel bed and excavation of instream aggregate shall be limited to those long-term storage sites of alluvium above the active channel described in the submitted mining and

1-94-06

CANEVARI TIMBER COMPANY

Page 3

reclamation plan. If there is a net increase in surface elevation, mining may occur within the bankfull channel at those sites described in the submitted mining and reclamation plan that have experienced sufficient replenishment to accommodate the proposed mining.

4. Extraction Season.

Extraction shall only be performed during the period from June 1 through October 1 of each year, unless extended by the Executive Director after consultation with the California Department of Fish and Game.

5. Reclamation of Extraction Area B.

To mitigate the impacts to environmentally sensitive habitat that will result from the proposed mining within Area B, the applicant shall implement the proposed reclamation design for Area B described in the Final SEIR Surface Mining and Reclamation Plan, which calls for the creation of 1.9 acres of riparian scrub habitat, 2.7 acres of submergent/emergent wetland habitat, and 2.5 acres of open water habitat. As proposed, reclamation shall occur annually, prior to removal of low water bridges, on that portion of the area disturbed by mining that season, and the applicant shall monitor reclamation planting immediately after planting and annually for three years after reclamation is implemented to determine planting success. If vegetation survival at the end of the three monitoring period for any species used in the reclamation does not meet the success criteria specified in the reclamation plan, the applicant shall replant the species to the stocking density required initially and shall monitor for an additional three years and perform additional remediation until the success criteria are achieved.

6. Expiration Date.

The permit shall expire on December 31, 1999 and shall not be subject to a time extension. Continued gravel extraction operations after the expiration date shall require a new coastal development permit.

7. Resource Protection.

The gravel extraction operations shall not disturb or remove any of the North Coast black cottonwood riparian vegetation habitat at and around the project site. Furthermore, the operations shall not push any material into the low flow channel of the river, except as needed for annually installing and removing the proposed railroad flatcar river crossing.

8. Humboldt County River Management Plan. In the event that Humboldt County completes and adopts its proposed River Management Plan for gravel extraction along the the Lower Eel River and/or adopts an interim set of gravel extraction policies prior to expiration of this permit, which in the opinion of the Executive Director call for significant changes in the gravel extraction operations authorized herein as conditioned to further reduce the

impacts of these operations, the applicant shall apply to the Commission for an amendment to this permit that seeks to incorporate these changes into the project. The applicant shall submit a complete application for an amendment within 60 days of being notified in writing by the Executive Director that an amendment request is required. If the applicant chooses to permanently cease gravel extraction operations prior to expiration of the permit, no such amendment request is required.

IV. Findings and Declarations.

The Commission hereby finds and declares as follows:

1. Site Description.

The applicant proposes to seasonally remove up to 200,000 cubic yards of river run sand and gravel per year and install a seasonal crossing of the Eel River from a portion of the Sandy Prairie Landform within the lower Eel River, immediately west of Fortuna in Humboldt County (see Exhibits 1-3). The site is just west of Highway 101 and is accessed via Dinsmore Drive.

The Sandy Prairie landform is a depositional feature with multiple channels at high flows, separated by islands. Sandy Prairie is located just upstream of the zone of tidal influence and is also at a transition point in the river where the channel slope of the river decreases from points further upstream. The proximity to the zone of tidal influence and the decrease in slope result in large quantities of sand and gravel carried in suspension in the river to be deposited at Sandy Prairie. The applicant's property includes only a portion of the Sandy Prairie landform. Other gravel operators extract sand and gravel from the landform both upstream and downstream of the applicant's property.

The total project site occupies approximately 202 acres, with 180 acres within the coastal zone and 22 acres outside the coastal zone (see Exhibit 3). The 180 acres within the coastal zone is all located below the ordinary high water channel of the river, and is all within the Commission's retained jurisdiction. Three separate areas within this 180-acre portion of the coastal zone would be mined under the proposed project. The 22 acres outside the coastal zone is located immediately adjacent to the river on a river terrace above the ordinary high water mark of the river channel. Approximately 8.7 acres of the 22 acres outside the coastal zone will be mined and reclaimed as a pond and riparian habitat, and 13 acres will be used for a gravel processing facility where processing activities including, stockpiling, aggregate crushing, washing, sorting, screening, ready-mix concrete production, and asphalt concrete production occur.

The surrounding properties to the west of the river are all devoted to agricultural grazing. The North Coast Railroad and Highway 101 lie adjacent to the subject property to the east, buffering the site from the developed portions of the City of Fortuna. The gravel extraction areas and processing facilities are visible from the highway.

Although the applicant is applying for a coastal development permit from the Commission for gravel extraction at this site for the first time, there has been an ongoing gravel extraction and processing operation occurring at this location for many years. No extraction has occurred over the last two years, however, during the time the County was processing a supplemental EIR, conditional use permit, and reclamation plan for the project.

The Eel River and its tributaries are ranked among the most significant anadromous fisheries in Northern California. Chinook salmon, Coho salmon, and steelhead trout are among the most important species with regard to commercial and sport fisheries. The project area and the lower Eel River are mainly important for the anadromous fish as a migration route to and from the upstream spawning grounds, as an insignificant amount of spawning occurs in the lower Eel River.

Virtually the entire portion of the project area within the coastal zone is considered to be environmentally sensitive habitat. The sensitive habitat consists of several different kinds (see Exhibit 4). The riverine habitat of the river channels and the occasional ponds that form under summer low water conditions provide habitat for invertebrates, fish, amphibians such as frogs and salamanders, invertebrate-eating birds, and various mammals including river otters and mink and other mammals that come to the river to forage such as deer and raccoon. The exposed cobble in the gravel bars adjacent to the low-flow channels provides roosting habitat for one avian species, killdeer, but represents one of the sparsest habitats in terms of wildlife diversity and numbers. Two kinds of riparian habitat are found at the site as well.

North Coast riparian scrub habitat occurs on "islands" between the low flow channels and is the most extensive plant community at the project site occupying a total of approximately 48 acres. Portions of this habitat are inundated every winter during high river flows. The vegetation growing within the North Coast riparian scrub habitat is dominated by coyote brush which forms a dense shrub layer in some areas. The understory is comprised of weedy annual grasses and forbs. Only a sparse covering of small trees is found in the north coast riparian scrub communities (5%-25%), including black cottonwood and willows. The North Coast riparian scrub habitat of the Sandy Prairie Bar supports a variety of wildlife species, including a number of small mammals such as raccoon, striped skunk, gray fox, rodents, and rabbits, and many bird species that use the habitat for foraging, nesting, and cover.

The most important of the habitat types found at Sandy Prairie is the North Coast black cottonwood forest. A total of approximately 19 acres of this habitat is found on the applicant's property on four islands within the bank full channel and on the right bank and left bank terraces adjacent to the river. This habitat type is a broadleaved, winter deciduous forest dominated by black cottonwood with willow, and red alder. The forest has a dense canopy as well as a dense shrub layer and herbaceous understory. The stands of North Coast black cottonwood forest on the applicant's property are approximately 20

to 25 years old, having been established following the major flooding of the Eel River that occurred in 1964. The cottonwood forest represents the most structurally complex habitat on Sandy Prairie, which in turn supports a higher number and diversity of wildlife species than the other habitats. The North Coast black cottonwood forest provides valuable foraging, breeding, roosting (resting), and shelter habitat for a wide variety of wildlife species, including at least 9 bird species, eight mammalian species two amphibian species, and one reptile species.

In general, the riparian vegetation lining the lower Eel River is perhaps the single-most important element for the natural environment in the area. The riparian habitat provides habitat for most of the birds and mammals in the project area. The presence of two different kinds of riparian habitat, the North Coast scrub and the North Coast black cottonwood forest, provides habitat for a greater number of wildlife species than a more uniform and simple habitat structure would. Also, the riparian zone along the river provides migration routes for wildlife. Over 200 different species of birds and 40 different species of mammals have been observed in the Eel River Delta, most of which utilize portions of the riparian corridor. In addition to its habitat value, the riparian corridor also provides protection of water quality, stream bank stabilization through root penetration, and flood protection.

The previously mentioned Chinook salmon, Coho salmon, and steelhead trout that use the Eel River are listed by the California Department of Fish & Game as "species of special concern." Other fish species in the river that are so listed include coastal cutthroat trout, Pacific lamprey, and Green sturgeon. Other than fish species of special concern, no other known special status species have been found at the project site. Special status species are those legally protected by state or federal endangered species laws, those under consideration for such protection, or those of concern to state or federal resource agencies. The EIR notes however, that even though no special status species apart from the fish species mentioned above have been found at the site, the black cottonwood riparian forest areas at the site offer suitable habitat for a state listed endangered species, the willow flycatcher, and four "species of special concern," the black-shouldered kite, Cooper's hawk, yellow warbler, and yellow-breasted chat.

## 2. Background.

The lower Eel River has been used for gravel extraction since 1911. Currently, 11 gravel operations are located along the Lower Eel River, and two additional operations are located on the lower reaches of the Van Duzen River which flows into the Eel at Alton. The 11 operations along the Eel are within the coastal zone. The annual maximum amount of gravel extracted by the 13 gravel mining operations in the lower Eel and Van Duzen Rivers is estimated by the County to be approximately 1,480,000 cubic yards.



The projects are interrelated in the sense that all of the gravel bars derive their material from the same source. A report prepared by a Department of Fish & Game Scientific Team examining gravel extraction on the nearby Mad River describes the interrelationship of gravel miners on a river as follows:

The gravel resource stored in any reach of a river can be visualized as a bank account. The capital in the account is contained in the bed, and in the bars and banks along the channel. Deposits are made naturally into the account as new gravel is brought in (recruited) from upstream. Natural withdrawals from the account occur as gravel is transported downstream out of the reach by the river. Checks are written on the account as gravel is extracted by man. As with any bank account, if deposits exceed withdrawals, the capital in the account will increase, that is, the river will raise its bed (aggrade) and build up the bars. On the other hand, if withdrawals and checks exceed the deposits, the balance in the account will diminish; in the case of a river, this means lowering of the bed (degradation) and widening of the channel.

The river as a whole can be looked at as a string of serially linked adjacent bank accounts (reaches), whereby the natural withdrawals (outflows) of bed material from each account provide the natural deposits (inflows) to the account immediately downstream. Thus deposits to any downstream account reflect the cumulative effects of all upstream actions. In particular, if upstream reaches intercept most of the natural gravel recruitment (i.e., the cash flow to downstream accounts is reduced), deposits to reaches farther downstream can only come by reducing the capital in the intervening accounts, i.e., by eroding the bed and banks.

Thus, the projects can contribute cumulatively to erosion of the bed and banks of the river, which in turn can erode adjacent riparian and other habitat areas, interfere with fishery resources, undermine bridge supports, and cause other impacts. Besides the cumulative impacts resulting from river morphology changes, other cumulative impacts resulting from the gravel mining operations include habitat degradation from the installation of gravel processing operations and access roads within environmentally sensitive habitat adjacent to the gravel bars, exclusion of recreational use of the river banks, and noise.

Until recently, there had been very little coordinated review of the combined effects of the various gravel mining operations. A gravel mining operation on the river can require the approval of a number of different agencies. Permits granted in the past by the various approving agencies were site specific and granted with little knowledge of the cumulative impacts of gravel mining throughout the lower Eel River.

The lack of coordinated review began to change in 1991. That year, Humboldt County considered the granting of a gravel mining lease from the County owned bar at Worswick. To comply with environmental review requirements under CEQA,

the County decided to prepare a Program Environmental Impact Report to describe and analyze the potential environmental effects resulting from the 13 gravel removal operations in the lower Eel River watershed. The document was certified on July 28, 1992, and is intended to be incorporated by reference into future environmental documents prepared for individual gravel removal projects in the area.

At the same time, the County initiated a comprehensive review of the status of County permits for each of the 13 operators in an effort to reach a final determination as to which operations were proceeding according to valid vested rights or County permits, and which ones required further review. The Department of Fish and Game also began to insist that the operators demonstrate that they had all necessary County approvals before the Department would issue annual 1603 agreements.

As a result, much was learned about the cumulative impacts of the gravel mining operations and the County developed a strategy for controlling the cumulative impacts of the gravel operations on river bed degradation and bank erosion. At the heart of the strategy is an annual administrative renewal of reclamation plans that will set a yearly limit on the amount of gravel that may be removed in any given year and specifies the particular method and location of extraction. The primary mitigation measure recommended by the Program EIR is for the County to prepare a River Management Plan which includes as a primary component an annual monitoring program to make annual decisions on where and how much gravel can be removed from the lower Eel and Van Duzen Rivers without adversely affecting the river. As described in the program EIR, the monitoring program was to be conducted by a consulting firm using funds provided by the gravel operators. The monitoring program would involve periodic biological surveys, creating cross-sections and thalweg profiles, plus taking aerial photos and ground photos each year for each gravel removal operation. This information would be compiled and compared to data from previous years to determine gravel recruitment, changes in channel morphology, and impacts on wildlife and fisheries.

To initiate the river management planning process, the County established a Surface Mining Advisory Committee composed of gravel operators, representatives of certain environmental groups, and interested citizens to advise the County on how to proceed with the preparation and implementation of the plan. However, the River Management Plan has not yet been developed. In the interim period before adoption of a River Management Plan, the County has been conditioning permits it grants for gravel extraction operations to require that the projects be made consistent with the river management plan when it is adopted.

Before an effective river management plan can be created, there is a need to collect additional data about the flow characteristics of the river and how flows vary from year to year. Much data is collected by the gravel operators as part of the annual reports that are required by many of the permitting and reviewing agencies before the commencement of mining each season.

In an effort to standardize the information in annual monitoring reports, so that the cumulative impacts of all the various gravel operations on the river can be better understood, Region 1 of the Department of Fish & Game has developed standards for gravel operators to follow in developing their annual monitoring reports. The standards were developed after a series of meetings were held with County Planning staff, numerous gravel operators and their representatives, and experts in the scientific community. Before an operator can obtain an annual 1603 Streambed Alteration Agreement from Fish & Game, the operator must submit annual reports consistent with the standards.

In a separate effort to standardize reporting and monitoring requirements, an Inter-Agency committee headed by the California Department of Conservation has developed an Instream Mining and Monitoring Program. The program is mandated by the California Code of Regulations Section 3710(c). The goal is to create a consistent set of standards for monitoring that could be required of gravel miners by local government and the various state agencies that review instream mining proposals to ensure that collected data is comparable to other data collected at other mining locations within the same river to facilitate better analysis of cumulative effects of mining operations and to ensure that the requirements of the different agencies do not conflict. The Instream Mining and Monitoring Program is in draft form and has not yet been officially adopted. The Instream Mining and Monitoring Program was based in part on the standards developed by the Department of Fish & Game.

In another new development in mining regulation, due to a recent amendment of the Army Corps of Engineers Clean Water Act Regulatory Program (effective September 24, 1993) the Army Corps of Engineers (Corps) will be taking a more expanded role in the review of instream gravel processing operations. Whereas previously the Corps' regulatory review of many instream gravel extraction operations focused mainly on the installation of channel crossings and stockpiling of material, the Corps will now be actively regulating the actual gravel and sand mining activities. The applicant for the subject project will be one of the first to be reviewed under the new program by the Corps' San Francisco District.

The combination of the new federal regulatory authority of the Corps of Engineers, the Program EIR requirement for preparation of River Management Plan for the Eel River, and the standardization of state and local agency monitoring requirements, underscore how a comprehensive approach to river management of the Eel River gravel operations may be the only way in which permitted operations will be allowed to continue in the future.

### 3. Detailed Project Description.

The applicant proposes to seasonally extract up to 200,000 cubic yards of sand and gravel per year from the Sandy Prairie landform, install seasonal crossings of low flow river channels as needed to facilitate gravel extraction, and reclaim the mined areas.

Four areas are proposed for mining, three of which are within the banks of the river in the coastal zone (Areas B, C, and D) (see Exhibits 5 through 11). The fourth area (Area A) is located just east of the river on a terrace that is outside of the coastal zone. The four mining sites include two areas in the active channel of the river (Areas C and D) that are subject to inundation by high flows and potentially frequent (annual) replenishment. The other two areas (Areas A and B) are above the active channel and are subject to inundation only during high flows and floods and are expected to recruit gravel less frequently or in the case of Area A, not at all. After mining in Area A is completed, the site will be reclaimed into a permanent riparian habitat. Areas C and D will be mined using traditional and modified skimming or trenching excavation techniques as options. Area B will be mined as a pit excavation, and is to be reclaimed to riparian habitat for wildlife.

The different mining areas are separated by low water channels. To allow access for extraction equipment and hauling trucks, the applicant proposes to install seasonal crossings. Each crossing would consist of two railroad flatcars placed side by side across the channel. Approximately 200 cubic yards of gravel would be scraped from adjoining areas to form abutments for the crossings. The crossings would be removed at the end of each extraction season and the abutment material would be regraded to restore the original contours.

The extraction operation will be served by processing facilities located on the applicant's property east of the river bank. These processing facilities are outside of the coastal zone and are not addressed by this permit.

The specific mining proposals for the three sites within the coastal zone are as follows:

Area B. Area B is approximately 7.1 acres in size and is above the active channel at a location with elevations ranging from 25 to 30 feet (see Exhibits 6 and 7). The area would likely not be mined initially until a particularly low flow year occurs when Areas C and D, which are at lower elevations, are not replenished with sufficient gravel to allow mining to occur at those locations. The mining plan calls for extracting gravel in a manner that would create a basin within a larger expanse of gravel. The basin would not connect to any low flow channels. The estimated volume of gravel to be yielded under the mining design for Area B is approximately 200,000 cubic yards. Because of its relatively high elevation, the site would only be inundated during high flow years and is unlikely to be fully replenished any more frequently than once every ten years. Thus, although it is possible the site may replenish during the five year life of this permit and allow another round of extraction, the likelihood that it would be mined more than once is small. If the area is mined again, the same reclamation plan would be implemented.

The reclamation plan for Area B calls for the creation of a 2.5-acre open water pond to be surrounded by 2.7 acres of submergent/emergent wetland area, which in turn will be surrounded by 1.9 acres of North Coast riparian scrub habitat.

Area C. Area C is part of the active channel bed and consists of a low elevation bar on the inside bend of a meander in the river channel (see Exhibit 8). Replenishment could occur yearly depending on the magnitude and duration of the annual high flows. Two mining options are proposed for Area C. Option 1 is skimming the lower two-thirds of Area C (approximately 10 acres), leaving the upper third of the bar intact. Skimming would be conducted with a loader starting at an elevation one foot above the low water channel and proceeding at a cross bar slope of 1.0% to 1.5%. Reclamation for this option simply consists of ensuring the bar is left in a configuration which will encourage future gravel recruitment by maintaining the upstream approach to the mining area in its natural form. Option 2 is to trench, incrementally in bands, the lower two-thirds of the bar (a maximum of 6.2 acres). The trenches will not be excavated below the elevation of the adjacent channel bottom (thalweg). Reclamation under option 2 is to increase the channel capacity of the low flow channel and create deep water habitat by the proposed mining, and maintain the upstream bar morphology to encourage gravel recruitment.

Area D. Area D is an approximately 44-acre site along one of the five channels that pass through the subject property (see Exhibit 9). Area D is similar to Area C in that it is subject to frequent inundation. The site has surface elevations ranging from 12 feet to approximately 24 feet mean sea level. Two mining options are proposed for Area D. Option 1 is to skim Area D to a depth that will not drop below low flow water surface elevations. The reclamation plan under Option 1 is to leave an alternating bar morphology in a meandering secondary channel above low flow water surface elevation. Option 2 is to trench to create a backwater channel. Reclamation consists of shaping the channel to create a backwater pool habitat.

No mining in any given season will occur at any location until after preparation of specific operating plan for mining and reclamation developed on the basis of annual environmental assessments and monitoring of the proposed project site and the entire Sandy Prairie landform. Annual assessments and site evaluation will be used to determine when aggregate can be excavated without causing river bed degradation. The proposed 200,000 cubic yards of annual gravel extraction is an upper limit. If after a low flow winter season there is a net reduction in surface elevation of Sandy Prairie and if long term storage supplies of gravel have been exhausted by prior years mining, the applicant proposes not to mine at all. Annual monitoring will determine the levels and volume of recruitment and identify areas of mining using the following criteria.

1. If there is a net reduction in surface elevation for Sandy Prairie's bankfull bed as determined by the annual environmental assessment and monitoring program, no mining shall occur within the bankfull channel bed. In this case, mining would be limited to Area A outside of the coastal zone.

2. If there is no net change in surface elevation, no mining shall occur within the active channel bed and excavation of instream aggregate shall be limited to those long-term storage sites of alluvium above the active channel described in the submitted mining and reclamation plan.
3. If there is a net increase in surface elevation, mining may occur within the bankfull channel at those sites described in the submitted mining and reclamation plan that have experienced sufficient replenishment to accommodate the proposed mining. However, excavation would be limited to those sites that have experienced replenishment.

The applicant is proposing to use sophisticated techniques for monitoring and annual assessment that exceed the quality of monitoring that has been performed to date at other gravel extraction operations in the lower Eel. The applicant will develop cross sectional data and other monitoring information based on field surveys in accordance with the recently developed monitoring standards developed by both Region 1 of the Department of Fish and Game and the inter-agency committee headed by the Department of Conservation. In addition, though, the applicant will also utilize aerial photogrammetry and computer software to produce a Digital Terrain Model (DTM) of the Sandy Prairie Landform each year. Sequential DTM's depicting the previous and current year's surface topography for the entire river bed will be used to calculate net gravel recruitment. Volumetric calculations will determine the volume of recruitment and replenishment for the entire area. Contour maps will identify the location and area of replenishment. A complete description of the Annual Environmental Assessment and Monitoring program is attached as Exhibit 12.

The applicant's proposed annual assessment and monitoring program is also unique in that it surveys an entire unit of the river rather than just the project site itself. The entire Sandy Prairie landform will be monitored each year and decisions as to how much and where to mine will be based in part on whether there is a net recruitment for the landform as a whole. This approach allows cumulative changes in the river to be considered to better avoid river bed degradation from the mining operation.

4. Protection of Coastal Waters, Biological Productivity, Water Quality, and Environmentally Sensitive Habitat Areas.

A number of Coastal Act policies address the protection of river environments from the impacts of gravel mining operations. Coastal Act Section 30233 allows dredging of coastal waters, wetlands, and estuaries, but only where there is no feasible less environmentally damaging alternative, where feasible mitigation measures have been provided to minimize adverse environmental effects, and where the project is limited to one of eight specified uses, such as mineral extraction if not located within an environmentally sensitive area. Coastal Act Section 30231 requires that the biological productivity and

the quality of coastal waters be maintained by a variety of means, such as by minimizing the alteration of natural streams and by maintaining natural vegetation buffer areas that protect riparian habitats. Coastal Act Section 30240 requires that environmentally sensitive habitat areas be protected against significant disruption of habitat values. Coastal Act Section 30250(a) requires in applicable part that new development not have significant adverse effects, either individually or cumulatively, on coastal resources.

Depending on the manner in which the gravel operations are conducted, the proposed project could have four potential adverse effects on the natural environment of the lower Eel River. These impacts include alteration of the river bed and increased bank erosion, impacts on fisheries, impacts on environmentally sensitive habitat, and impacts to the water quality of the river. The potential impacts and their mitigation are discussed separately in the following four sections.

a. River Morphology.

As discussed in the Background Finding above, (Finding IV.2), a potential major impact of gravel mining operations is degradation of the river bed and erosion of the river banks. Such impacts can occur if the amount of gravel extracted from a particular part of the river over time exceeds the amount of gravel deposited at the site through natural recruitment, or downstream transport of sand and gravel by the waters of the river. Bed degradation and river bank erosion can also occur as a result of the manner in which the gravel is extracted. For example, according to the Fish & Game scientific Team examining gravel extraction on the nearby Mad River, if bars are skimmed too flat, and too close to the low-water surface, at slightly higher stages the river will tend to spread across the bars, reducing the depth of flow, and the channel may both migrate rapidly and break into a number of shallow channels or threads. Such sites will tend to trap gravel which would otherwise move downstream and may trap fish migrating up and down the river.

The applicant proposes to extract a maximum of 200,000 cubic yards of sand and gravel per year from the site. However, extraction is proposed to be limited in part by the rate of natural replenishment of gravel to avoid degradation of the river bed. No mining in any given season will occur until after preparation of specific operating plan for mining and reclamation developed on the basis of annual environmental assessments and monitoring of the entire Sandy Prairie landform. The applicant will use a combination of tradition field surveys, aerial photogrammetry, and computer modeling of the site to prepare annual assessments that will determine the levels and volume of gravel recruitment during the last winter high flow period and identify areas where mining can occur without causing bed degradation.

If after a low flow winter season there is a net reduction in surface elevation of Sandy Prairie and if long term storage supplies of gravel have been exhausted by prior years mining, the applicant proposes not to mine at all. Annual monitoring will determine the levels and volume of recruitment and identify areas of mining using the following criteria.

1. If there is a net reduction in surface elevation for Sandy Prairie's bankfull bed as determined by the annual environmental assessment and monitoring program, no mining shall occur within the bankfull channel bed. In this case, mining would be limited to Area A outside of the coastal zone.
2. If there is no net change in surface elevation, no mining shall occur within the active channel bed and excavation of instream aggregate shall be limited to those long-term storage sites of alluvium above the active channel described in the submitted mining and reclamation plan.
3. If there is a net increase in surface elevation, mining may occur within the bankfull channel at those sites described in the submitted mining and reclamation plan that have experienced sufficient replenishment to accommodate the proposed mining. However, excavation would be limited to those sites that have experienced replenishment.

The applicant is proposing to use sophisticated techniques for monitoring and annual assessment utilizing field surveys as well as aerial photogrammetry and computer modeling.

The mining plans for each area to be mined are designed to ensure that the configuration of mining will also not lead to bed degradation. Only two of the proposed mining areas are located along the active channels of the river (Areas C and D). The other two sites are pit excavations away from the channels in higher ground where they would not affect the channel beds. At Areas C and D, no mining will occur unless that particular area has experienced gravel replenishment since the last mining episode at the site. In addition, skimming in Area C will commence no lower than an elevation one foot above the low water channel. Thus, the excavation will avoid mining below the thalweg or bottom elevation of the river which can lead to a lowering of the river channel. In addition, skimming at Area C will proceed at a cross bar slope of 1.0% to 1.5%. Leaving the bar with the prescribed slope will encourage future gravel recruitment and minimize bed degradation.

The Commission finds that the proposed mining criteria and the annual assessment and monitoring procedures incorporated into the applicant's project will ensure that the project will not cause river bed degradation. To ensure that the criteria are followed, the Commission attaches Special Condition No. 3 which sets annual extraction limits in accordance with the described criteria. To ensure that the extraction limits of Special Condition No. 3 are appropriately applied to the changed conditions of the gravel bar each year, Special Condition No. 2 establishes an annual administrative review process to occur prior to each year's extraction operations. The condition requires in part, that the applicant submit for the review and approval of the Executive Director an annual report that contains the annual assessment and monitoring information described in the application. In addition, the report must



contain evidence that the applicant has obtained other required agency approvals for extraction during the coming season. The Executive Director will approve the report if the report adequately provides the required information and if the proposed gravel extraction for the coming season is consistent with the terms and conditions of this permit, including the seasonal extraction limits established under Special Condition No. 3.

b. Fisheries.

As noted previously, the Eel River and its tributaries are ranked among the most significant anadromous fisheries in Northern California. Chinook salmon, Coho salmon, and steelhead trout are among the most important species. The project area and the lower Eel River is mainly important for the anadromous fish as a migration route to and from the upstream spawning grounds. This stretch of the river itself is not a significant fish spawning area.

As proposed for seasonal extraction of gravel during the summer months only, the proposed gravel extraction operation, will not adversely affect fisheries. However, gravel mining operations need to be out of the river bed before the rainy season to prevent impacts on fisheries. This is especially important in that the runs of the various species of anadromous fish up and down the river increase in the fall with the rise in river levels and remain at high levels through the early spring.

In previous 1603 Streambed Alteration Agreements issued for gravel extraction at this site, the Department of Fish & Game has imposed a seasonal limitation on gravel extraction operations of June 1 through September 30 each year, which corresponds to the period when potential impacts to fisheries is lowest. Therefore, the Commission attaches Special Condition No. 4. which states that extraction shall only be performed during the period from June 1 through October 1 of each year, unless the season is extended by the Executive Director after consultation with the Department of Fish and Game.

c. Environmentally Sensitive Habitat.

As noted previously, virtually the entire portion of the project site within the Coastal Zone is considered to be environmentally sensitive habitat, as it is located within the banks of the Eel River. The environmentally sensitive habitat consists of various types, including riverine habitat within the river channels, exposed cobble habitat along the channel borders, North Coast riparian scrub habitat occurring on islands within the bankfull channel of the river, and North Coast black cottonwood forest occurring on four islands and on the right and left banks of the river within the project site. Descriptions of the habitats and their use by wildlife are found in the "Site Description" finding of this report.

Three of the four habitat types will not be adversely affected by the proposed project. The riverine habitat may be slightly expanded in certain areas as skimming or trenching extraction operations may extend back from existing

channel edges. However, due to scouring, the riverine habitat has very little vegetation that would be affected by the extraction operations and the wildlife that uses the riverine environment will be able to continue to use the riverine habitat before and after gravel extraction episodes. As limited by Special Condition No. 4, the annual mining activities will be completed by October first of each year, prior to the peak runs of anadromous fish through the channels.

Much of the proposed gravel extraction will occur within the exposed cobble habitat. However, this habitat contains very little vegetation as high winter river flows inundate the habitat and scour away or bury vegetation that might take root during low flow summer months. The limited wildlife use made of the exposed cobble habitat will be able to continue before and after gravel extraction episodes.

The proposed project has been designed to avoid the North Coast black cottonwood forest habitat because of its importance for overall habitat values. No extraction will occur within or immediately adjacent to the cottonwood forest areas. The Commission attaches Special Condition No. 7 to ensure that this intention to avoid the habitat areas is carried out.

In addition, no special status species will be affected by the project. As noted previously, the only special status species that have been found at the project site to date are several fish species. Fisheries will be protected by Special Condition No. 4 which requires that gravel extraction operations cease each year before the runs of anadromous fish reach their peak.

The environmentally sensitive habitat type within the coastal zone that will be adversely affected by the proposed gravel extraction operations is the North Coast Riparian Scrub habitat. One of the three proposed extraction sites within the coastal zone, Area B, is located within a North Coast Riparian Scrub habitat area.

Area B is approximately 7.1 acres in size and is above the active channel at a location with elevations ranging from 25 to 30 feet. The area would likely not be mined initially until a particularly low flow year occurs when Areas C and D, which are at lower elevations, are not replenished with sufficient gravel to allow mining to occur at those locations. The mining plan calls for extracting gravel in a manner that would create a basin within a larger expanse of gravel. The basin would not connect to any low flow channels. Because of its relatively high elevation, the site would only be inundated during high flow years and is unlikely to be fully replenished any more frequently than once every ten years. Thus, although its possible the site may replenish during the five year life of this permit and allow another round of extraction, the likelihood that it would be mined more than once is small. If the area is mined again, the same reclamation plan would be implemented.

The reclamation plan for Area B calls for the creation of a 2.5-acre open water pond to be surrounded by 2.7 acres of submergent/emergent wetland area, which in turn will be surrounded by 1.9 acres of North Coast riparian scrub

habitat. Reclamation will occur annually, prior to removal of low water bridges, on the portion of the area disturbed by mining. The requisite vegetation will be planted at a density of 1213 plants per acre, and the applicant proposes to conduct vegetative monitoring annually for three years to determine whether at least 50% of the planted vegetation survives to establish a final density of at least 600 plants per acre. The proposed reclamation will replace the approximately 7.1 acres of North Coast riparian scrub habitat disturbed by mining with a matching amount of mixed habitat, of which only 1.9 acres is North Coast riparian scrub. The overall habitat value of the reclamation is expected to be much greater than the habitat values provided by the existing 7.1 acres of riparian scrub in that the reclaimed site will provide much greater habitat diversity, and will create suitable habitat for certain species of concern, such as the red-legged frog and the yellow-legged frog, which have been found in the lower Eel River.

The Commission finds that the proposed reclamation plan for Area B will adequately mitigate the adverse affects of the gravel extraction in this area and will enhance overall habitat values within the sensitive habitat area. To ensure that the proposed mitigation is implemented, the Commission attaches Special Condition No. 5. The Condition requires the applicant to implement the reclamation design and monitoring for Area B be as described in the Final SEIR Surface Mining and Reclamation Plan, and if vegetation survival at the end of the three year monitoring period does not attain the prescribed success standards, the condition requires the applicant to perform additional remediation until the success criteria are met.

d. Water Quality.

The principal impacts of the Canevari Timber Company gravel extraction and processing operation on water quality occur from the processing operations located adjacent to the east bank of the river in an area outside of the coastal zone. Water quality is affected by stormwater runoff from the concrete plant, asphalt plant, and a contaminated soils containment structure, in addition to potential discharge of dissolved petroleum products and admixtures in storm water. As the impacts are generated outside of the coastal zone, the Commission does not have permit jurisdiction to address these impacts. However, Humboldt County in its approval of a use permit and reclamation plan imposed conditions requiring runoff containment and other measures in an attempt to control these impacts. The processing facility is also subject to a Waste Discharge Requirements Order adopted by the California Regional Water Quality Control Board which is scheduled to be revised after the applicant completes a required stormwater pollution prevention plan.

If properly managed, the proposed gravel extraction operations themselves should not adversely affect the river's water quality. However, excessive or sloppy gravel extraction operations could adversely impact water quality, and ultimately the biological productivity and fishery resources of the river. For example, pushing gravel materials into the water could degrade water

quality and biological productivity by increasing the turbidity of the water. Similarly, allowing muddy water to enter the river due to inappropriate gravel trenching operations could create similar impacts.

To prevent such occurrences, the Commission attaches Special Condition No. 8 which requires that gravel extraction operations not push any material into the river except as required for installing and removing the seasonal river crossing.

h. Conclusion on Consistency with Sections 30233, 30231, 30240, and 30250(a).

The Commission finds that as conditioned to (1) limit gravel extraction in a manner that will avoid degradation of the river bed (Special Condition Nos. 2 and 3), (2) limit the operation to the summer season when flows are low and runs of anadromous fish are not at their peak (Special Condition No. 4), (3) to prevent the deposition of material into the river (Special Condition No. 7), (4) require reclamation of mining Area B into a diverse riparian wetland habitat (Special Condition No. 5) and (5) allow the Commission to consider an amendment to the permit in the event that the planning process for Humboldt County's River Management Plan develops more appropriate recommendations for managing gravel extraction along the river to reduce impacts to the river (Special Condition No. 9), the project will minimize alteration of the Eel River and maintain the biological productivity and quality of the river in a manner consistent with Sections 30231 30233, 30240 and 30250(a) of the Coastal Act.

4. Permissible Use For Dredging of Coastal Waters.

Gravel extraction within a river bed is a form of dredging within a wetland. Coastal Act Section 30233, states in part, that the diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be allowed for only certain limited purposes.

The proposed project involves both dredging for mineral extraction and the temporary and seasonal placement of fill for the installation of seasonal crossing of the low flow channels to access the gravel extraction areas. Each river crossing fill includes a total of approximately 200 cubic yards of gravel graded from the surrounding area for creation of approach ramps and abutments for the bridge. After each extraction season, the bridge is removed and the gravel fill is regraded back into the surrounding area.

Section 30233(6) allows dredging for mineral extraction. Therefore, as conditioned herein, the proposed gravel extraction is consistent with the use limitations of Section 30233 on dredging in wetlands and coastal waters as the extraction operation is for mineral extraction.

The seasonal crossings are an essential part of the gravel extraction operation as there would be no access to portions of the gravel extraction

area. Therefore, the fill required for the seasonal crossings can be considered an ancillary component of the proposed dredging for mineral extraction and is on approvable use of fill under 30233(6).

#### 5. Public Access.

The project is located between the first public road (Highway 101) and the sea (the Eel River is considered to be an arm of the sea in this area).

Coastal Act Section 30210 requires that maximum public access opportunities be provided when consistent with public safety, private property rights, and natural resource protection. Coastal Act Section 30211 requires that development not interfere with the public's right of access to the sea where acquired through use. Coastal Act Section 30212 requires that public access from the nearest public roadway to the shoreline and along the coast be provided in new development projects, except in certain instances, as when adequate access exists nearby. In applying Sections 30210, 30211, and 30212, the Commission is limited by the need to show that any denial of a permit application based on those sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential public access.

The Program EIR indicates that recreational use of the river in this particular section of the river is very limited, largely because there are very few access points to the river. The principal public access use of the project site that does occur is by fishermen who go out to the river channel for recreational fishing. Other public access and recreational uses of this stretch of the river include canoeing and recreational boating. The prime fishing seasons occur during the wet months, when gravel extraction is not occurring. The peak canoeing and boating use occurs in the spring before the gravel extraction season begins. Thus, the project will not significantly affect the fishermen, canoeists, or other recreational boaters. Furthermore, gravel extraction operations have been occurring at the site for many years. The continued extraction authorized by this permit will not create any additional burdens on public access than have existed in the past. The project will not create any new demands for fishing access or other public access use.

Therefore, the proposed project does not appear to have any adverse effect on public access that would be significant enough to warrant requiring public access. The Commission finds that public access is not warranted for this project and that the project as proposed without new public access is consistent with Sections 30210 and 30212.

#### 6. State Lands Commission Review.

The project is located in the bed of the Eel River, a navigable river, where the State of California holds a fee ownership between the two ordinary low water marks. In addition, the entire river between the ordinary high water

marks is subject to a public trust easement. Both the easement and the fee owned lands are under the jurisdiction of the State Lands Commission. The State Lands Commission is scheduled to consider the approval of a general lease for the project at its meeting of April 6, 1994. To assure that the applicant has a sufficient legal property interest in the site to carry out the project and to comply with the terms and conditions of this permit, the Commission attaches Special Condition No. 1 which requires that the applicant submit a copy of the approved general lease for the project required from the State Lands Commission.

7. Department of Fish and Game Review.

The project requires an annual 1603 streambed alteration agreement from the Department of Fish and Game. The applicant has not yet received an agreement for the 1994 gravel extraction season. Therefore, to ensure that the project area reviewed by the Department of Fish and Game is the same project area that was reviewed under this permit by the Commission, and to ensure that the requested amount of gravel extraction does not exceed the seasonal extraction limits established under Special Condition No. 3, the Commission requires as part of Special Condition No. 2 that prior to commencing each gravel extraction season, the applicant submit a copy of a 1603 agreement from the Department of Fish and Game that is valid for that season.

8. U.S. Army Corps of Engineers Review.

The project is within and adjacent to a navigable waterway and is subject to review by the U.S. Army Corps of Engineers (Corps). Pursuant to the Federal Coastal Zone Management Act, any permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Under agreements between the Coastal Commission and the U.S. Army Corps of Engineers, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. To ensure that the project ultimately approved by the Corps is the same as the project authorized herein, the Commission requires as part of Special Condition No. 2 that prior to commencing each gravel extraction season, the applicant demonstrate that it has all necessary permits from the U.S. Army Corps of Engineers for the proposed gravel extraction to be performed that season.

9. Permit Expiration.

As noted in the "Background" finding of this report, regulation of gravel mining operations along the Eel River has been evolving rapidly over the last few years and is likely to continue to evolve in the future. The development of a river management plan is called for in the Program EIR for the gravel mining operations along the lower Eel River. The U.S. Army Corps of Engineers has recently been given greater regulatory authority over instream gravel extraction operations and is currently developing the approach the agency will take to exercise its new authority. An inter-agency instream gravel mining

committee at the State level is developing new monitoring standards. Therefore, to enable the Commission to review future mining at the applicant's site in light of the new information and changed circumstances that may develop over the next few years, the Commission attaches Special Condition No. 6, which states that the permit shall expire on December 31, 1999.

The Commission notes that it may be necessary for the applicant to amend this authorization even before expiration of the permit at the end of 1999. The Eel River is a dynamic environment that can change dramatically in the course of a single winter due to extreme high water flows. Standard Condition No. 3 requires that the project adhere to the project plans submitted with the application, as modified by the conditions of the permit. In the event that changes in the riverine environment necessitate changes to the extraction and/or reclamation plans for the project, such changes will require further review by the Commission.

10. Humboldt County LCP.

The project is consistent with Humboldt County's Local Coastal Program. The project area within the coastal zone is designated Agriculture Exclusive (AE) under the Eel River Area Plan (the LUP segment covering this area), and zoned Natural Resources with a Streams and Riparian Corridor Protection combining zones (NR/R) under the Coastal Zoning Ordinance. Both the land use plan designation and zoning allow for the proposed gravel extraction use. Section 3.41.F.2 of the Eel River Area Plan states that new development within stream channels shall be permitted when there is no less environmentally damaging feasible alternative, where the best feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to only certain uses, including surface mining. Surface mining shall be conducted in a manner that, among other things, avoids or minimizes disturbance of banks, does not leave holes or pits which could adversely affect aquatic life, and adheres to Department of Fish and Game guidelines for seasonal limits on extraction. As conditioned herein, the proposed project will meet these requirements. In its action to approve the use permit for the project, the Humboldt County Board of Supervisors found that the proposed project is consistent with the Humboldt County LCP. The Commission concurs with this determination.

11. CEQA.

The lead agency for the project, Humboldt County, certified a Program Environmental Impact Report (EIR) for the project and other gravel removal projects on the lower Eel River on July 28, 1992. The County also certified a Supplemental EIR for this particular project on October 26, 1993. As discussed above, the project has been mitigated to avoid or minimize impacts to environmentally sensitive habitats, fisheries, water quality, and river channel morphology to ensure consistency with the Coastal Act.

ATTACHMENT A

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. 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 of 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.



PROJECT LOCATION

EXHIBIT NO.	2
APPLICATION NO.	1-94-06
CANEVARI	
Vicinity map	
California Coastal Commission	

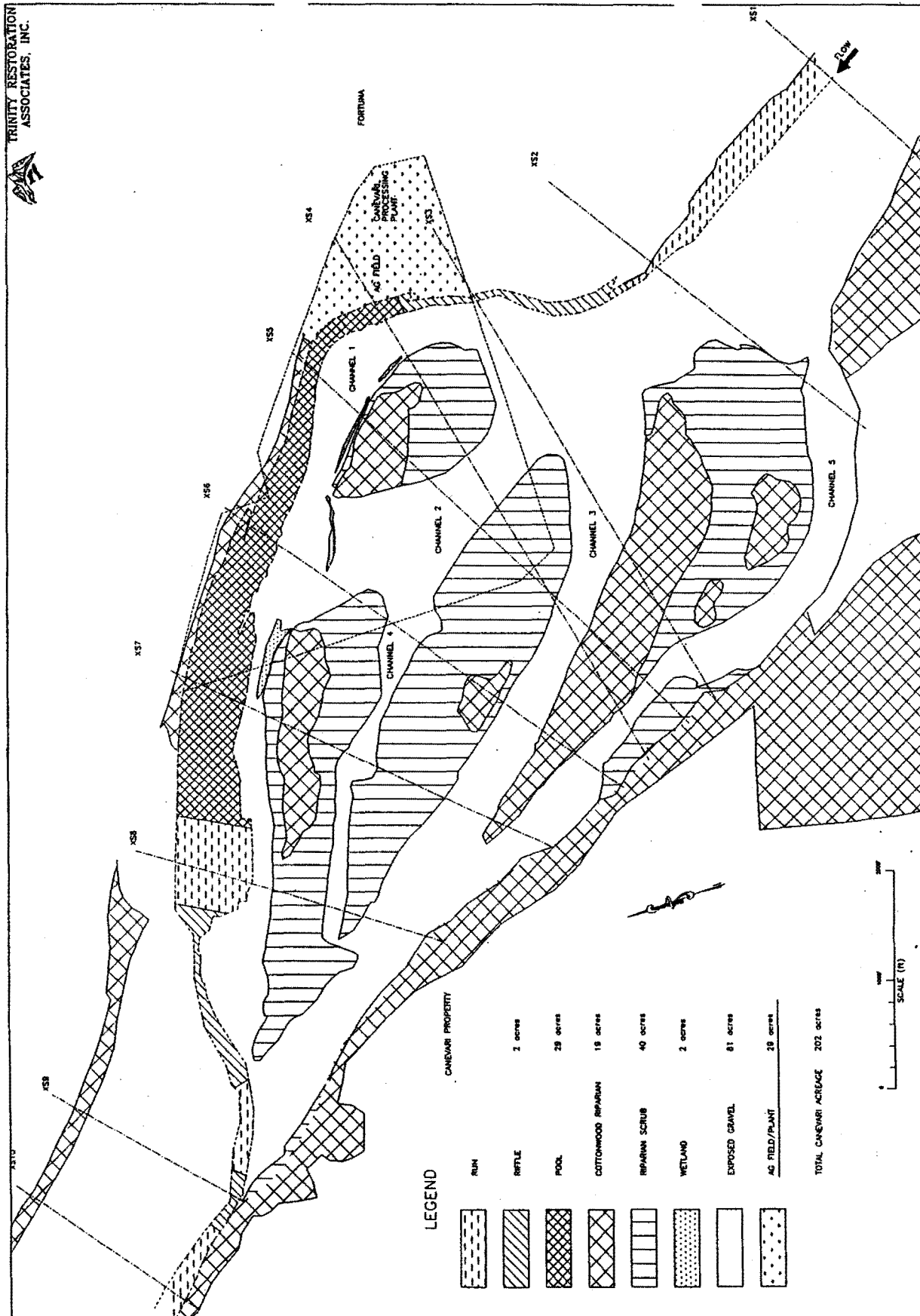


Exhibit 3 EEL RIVER - SANDY PRAIRIE VEGETATIVE, WILDLIFE AND AQUATIC HABITATS.

EXHIBIT NO.

APPLICATION NO.  
1-94-06

CANEVARI

Habitat areas

California Coastal Commission

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**ANNUAL ENVIRONMENTAL ASSESSMENT AND MONITORING PROGRAM**

MINNESOTA  
COMMISSION

The lower Eel River is a dynamic system subject to change during ordinary high water events. The most significant concept of the proposed project is conducting annual site assessments to evaluate new opportunities and constraints presented by the changing river conditions. Annual assessments and site evaluation will provide the maximum amount of flexibility in developing annual mining and reclamation plan amendments which can minimize environmental impacts.

Conducting an annual environmental assessment will involve the documentation and evaluation of changes to the 1992 baseline established for river morphology and habitat on Sandy Prairie (as described in the Draft SEIR, Appendix 1, section 3.0), following the high flow season each year. The documentation includes physical and biological surveys and aerial photography based mapping. The physical evaluation will include a comparison of pre- and post-high flow season morphologic conditions such as elevations, cross sectional area, channel patterns or configuration, flow direction, flow routing, surface area distribution of exposed sediments and open water, and other parameters.

The annual biological evaluation will include a comparison of pre-and post-high flow season conditions, such as the number, extent, and location of habitats and species. The air photos produced each year will be used to delineate vegetation and habitat areas. Air photos will also be used to assess changes in habitat. On-the-ground biological surveys will assess the use of or presence on the property by sensitive species. Long term environmental assessment and monitoring, consisting of physical and biological surveys, are necessary in order to detect trends beyond the annual variability expressed in such a dynamic fluvial system as the Eel River at Sandy Prairie.

Project monitoring will also occur to ensure compliance with the mining and reclamation plan and to assess the success of the mining and reclamation designs (see Final SEIR Section 5.1.3.2 through 5.1.3.5, Monitoring Plans). Compliance surveys will document that mining designs and reclamation features are built as designed and that revegetation is implemented. Surveys to measure success of reclamation will assess whether graded slopes provide the proper setting for establishing submergent-emergent aquatic vegetation and riparian habitat, that revegetation efforts are meeting design specifications, and habitat features are functioning as designed.

The entire bed of Sandy Prairie's bankfull channel will be surveyed each year when high flows recede in the spring to determine changes to morphology and surface topography. These surveys will be used to generate a Digital Terrain Model (DTM). The DTM will be based on photogrammetry from controlled aerial photography and ground based methods that utilize a total station. Aerial photography can economically survey extensive areas above water, in the normal course of producing current photographs. Surveys in the wetted channel, utilizing a total station will map the thalweg and river bed morphology.

EXHIBIT NO. 7

APPLICATION NO.

1-94-06A CANEVARI  
(1 of 3)

ANNUAL ASSESSMENT

Surface elevations thus generated will be tied to the National Geodetic Vertical Datum (NGVD, mean sea level) and California Coordinate System. Monuments and ground control elevations will also be tied into the NGVD, and location coordinates correspond to the California Coordinate System.

Topographic maps will be produced from the DTM that will meet National Map Accuracy Standards for 1"=100' scale with 2' contour interval. Generally, horizontal accuracy should be 1/100 of plot scale (+/- 1 ft. at 100 scale) and spot elevations to 1/4 of contour interval (+/- 0.5 ft at a 2 ft. contour interval). Any number of cross sections can be generated at any location covered by the DTM, as well as provide the ability to re-orient cross sections for future DTM comparisons to account for changing channel configurations.

Each year these surveys will produce current aerial photographs, topographic maps, and cross sections. Standards for performing surveys have been developed by CDF&G Region 1 for Fish and Game Code 1603 agreements, and by an Inter-agency committee headed by Mines and Geology that has developed an Instream Mining and Monitoring Program as mandated in Article 9 Reclamation Standards, CCR Section 3710(c). The proposed project will incorporate these standards and amendments to the standards each year with the project's mining and reclamation plan revisions.


Annual monitoring will provide aerial photographic bases with mylar overlays to portray current contours, thalweg location, delineation of channel and alluvial features, vegetative communities, and areas of replenishment. Cross sections and longitudinal profiles containing the previous year and current conditions will be generated. Aerial photographic interpretation, computer mapping and DTM will document changes to thalweg location, channel and bar patterns, vegetative communities, and excavation areas. Sequential DTM's depicting the previous and current years surface topography for the entire river bed will be used to calculate net recruitment. Volumetric calculations will determine the volume of recruitment and replenishment for the entire area. Isopach plots or cut and fill contour maps will identify the location, and area of replenishment.

The monitoring methodology and assessment concept discussed will determine when aggregate can be excavated without causing river bed degradation. Annual monitoring will determine the levels and volume of recruitment and identify areas of replenishment, using the following criteria.

- 1) If there is a net reduction in surface elevation for Sandy Prairie's bankfull bed, then more material was removed from natural scour or extraction than was recruited, and there will be no mining within the bankfull channel bed;
- 2) If there is no net change in surface elevation for Sandy Prairie's bankfull bed, then the same amount of material was removed from natural scour or extraction as was recruited, and there will be no mining in the active channel bed;
- 3) If there is a net increase in surface elevation for Sandy Prairie's bankfull channel bed, then the amount of material removed from natural scour or

extraction was less than what was recruited, and mining can occur in the bankfull channel bed.

Herein, it is assumed that in years when there is a net increase in surface elevation for Sandy Prairie's bankfull bed, excavation of instream aggregate would be limited to those sites that have experienced replenishment. In those years when there is no net change in surface elevation for Sandy Prairie's bankfull bed, excavation of instream aggregate would be limited to those long-term storage sites of alluvium, above the active channel. As the data base builds with successive years of surveys, tracking of long term trends in the bed elevation, form and pattern of Sandy Prairie will be possible.

EXHIBIT NO. 7
APPLICATION NO. 1-94-06ACANEVARI
ANNUAL ASSESSMENT (3 of 3)
 California Coastal Commission

