MINUTE ITEM
This Calendar Item No. C31
was approved as Minute Item
No. 31 by the State Lands
Commission by a vote of 3
to 0 at its 5/26/94
meeting.

CALENDAR ITEM
C31

A 2

S 4

PRC 7286
J. Ludlow
05/26/94

AMENDMENT TO GENERAL PERMIT - PUBLIC AGENCY USE

PARTY:
United States Bureau of Reclamation
2800 Cottage Way
Sacramento, California 95825-1898

LOCATION:
Six parcels of submerged land totalling 8.224 acres located in the Sacramento River at the Red Bluff Diversion Dam, Tehama County.

EXHIBITS:
A. thru A-5. Vicinity and Site Maps.
B. Finding of No Significant Impact.

AB 884:
06/07/94

RECOMMENDED ACTION:
IT IS RECOMMENDED THAT THE COMMISSION:

CEQA FINDING:
FIND THAT A FINDING OF NO SIGNIFICANT IMPACT (FONSI) WAS PREPARED AND ADOPTED FOR THIS PROJECT BY THE UNITED STATES DEPARTMENT OF THE INTERIOR AND MEETS THE REQUIREMENTS OF THE CEQA THEREFORE PURSUANT TO 14 CAL. CODE REGS. 15225, AND ADOPT SUCH FEDERAL DOCUMENT FOR USE IN PLACE OF A NEGATIVE DECLARATION.

MITIGATION MONITORING PROGRAM:
FIND THAT THE ENVIRONMENTAL COMMITMENT LIST WITHIN THE FONSI PREPARED AND APPROVED BY THE UNITED STATES DEPARTMENT OF THE INTERIOR CONFORMS WITH THE REQUIREMENTS OF P.R.C. 21081.6 AND ADOPT SUCH LIST AS A MITIGATION MONITORING PLAN.

SIGNIFICANT LANDS INVENTORY FINDING:
FIND THAT THIS ACTIVITY IS CONSISTENT WITH THE USE CLASSIFICATION DESIGNATED FOR THE LAND PURSUANT TO P.R.C. 6370, ET SEQ.

AUTHORIZATION:

AMEND THE PERMIT ISSUED TO THE UNITED STATES BUREAU OF RECLAMATION FOR A PERIOD OF 49 YEARS EFFECTIVE NOVEMBER 11, 1988, TO INCLUDE THE CONSTRUCTION OF A PILOT PUMPING PLANT CONSISTING OF ONE HELICAL PUMP AND TWO CLOSED ARCHIMEDES SCREW PUMPS, AN ADDITIONAL PUMP, EITHER HELICAL OR ARCHIMEDES MAY BE ADDED IN THE FUTURE, THE CONSTRUCTION OF A SHEET PILE WALL AT THE PLANT SITE, EXCAVATION OF 1,000 CUBIC YARDS OF SAND FROM THE RIVER, PLACEMENT OF 12,000 CUBIC YARDS OF BACKFILL BEHIND THE SHEETPILE, AND PLACEMENT OF 1,000 CUBIC YARDS OF CONCRETE INTO THE RIVER AND DREDGING OF 15,000 CUBIC YARDS OF MATERIAL UPSTREAM AND DOWNSTREAM OF THE DAM; EFFECTIVE MAY 1, 1994 AND AS SHOWN ON EXHIBITS "A", "A-1", "A-2", "A-3", "A-4" AND "A-5" AND BY REFERENCED MADE A PART HEREOF.

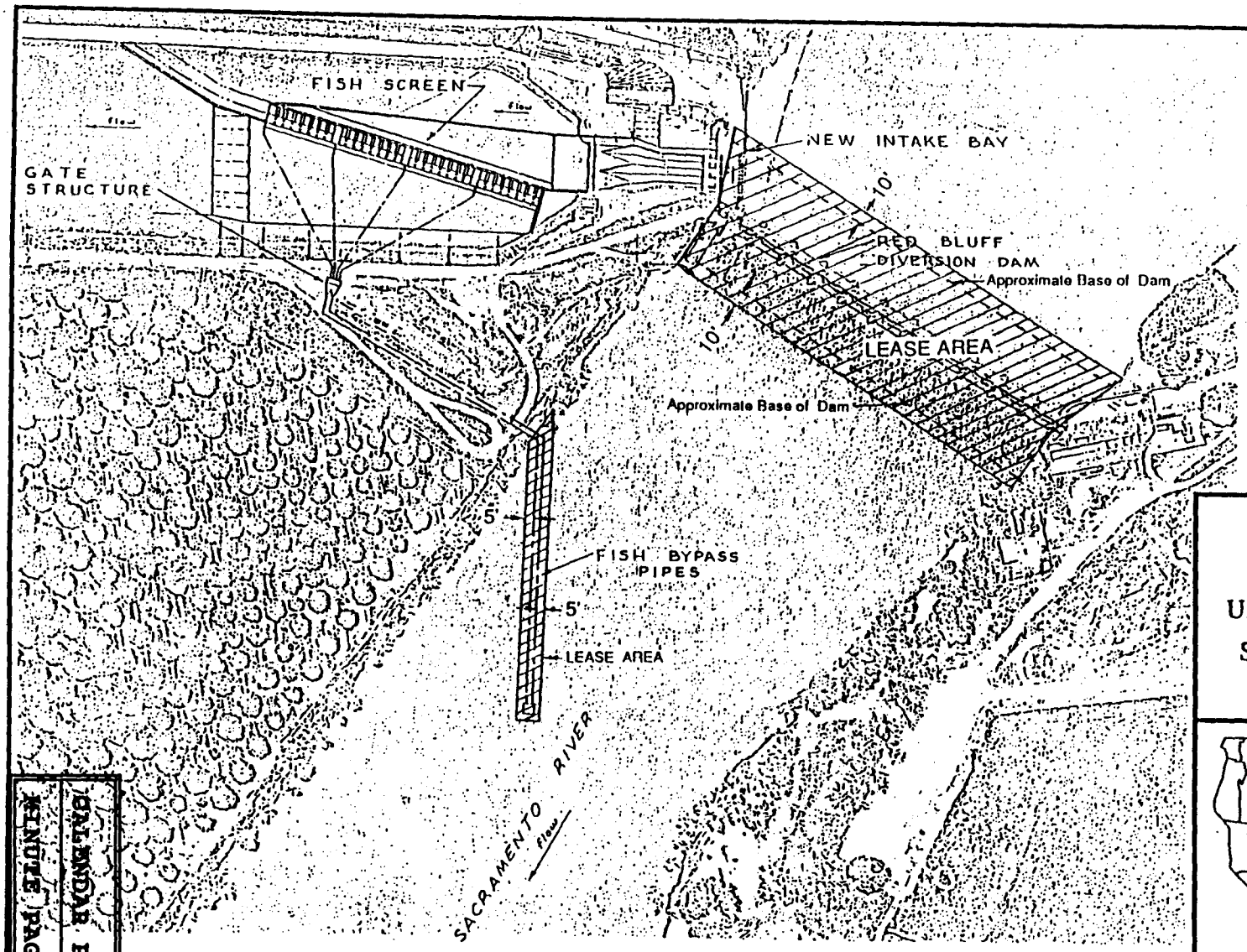

EXHIBIT "A"

PRC 7286

U.S. Bureau of Reclamation

SACRAMENTO RIVER

TEHAMA COUNTY

This Exhibit is solely for purposes of generally defining the lease premises, and is not intended to be, nor shall it be construed as, a waiver or limitation of any State interest in the subject or any other property.

CALENDAR PAGE 143

MINUTE PAGE 2065

CG 12/92

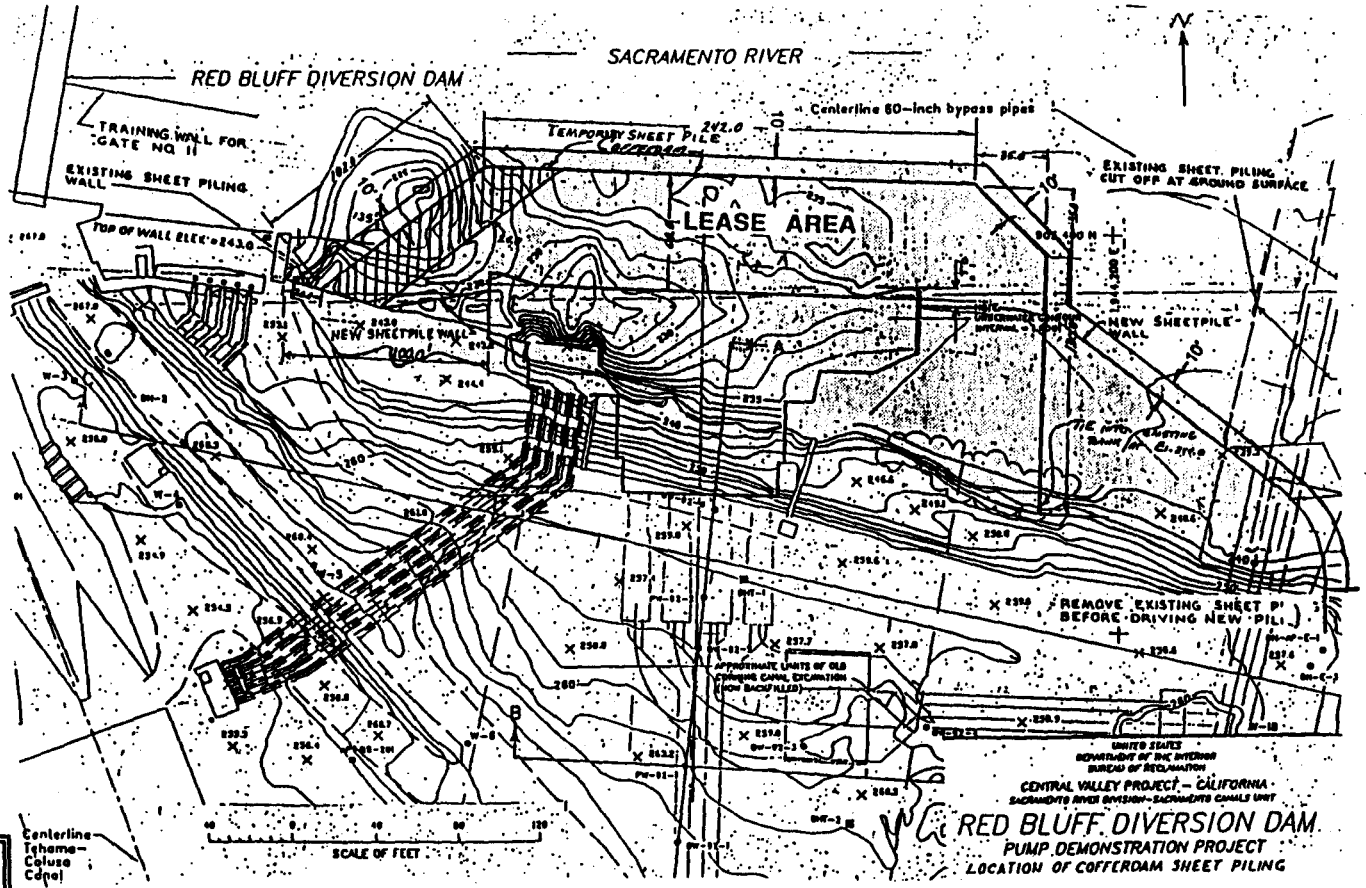

EXHIBIT "A - 1"

PRC 7286

U.S. Bureau of Reclamation

SACRAMENTO RIVER

TEHAMA COUNTY

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CALENDAR PAGE 144
CG 2006
MINUTE PAGE

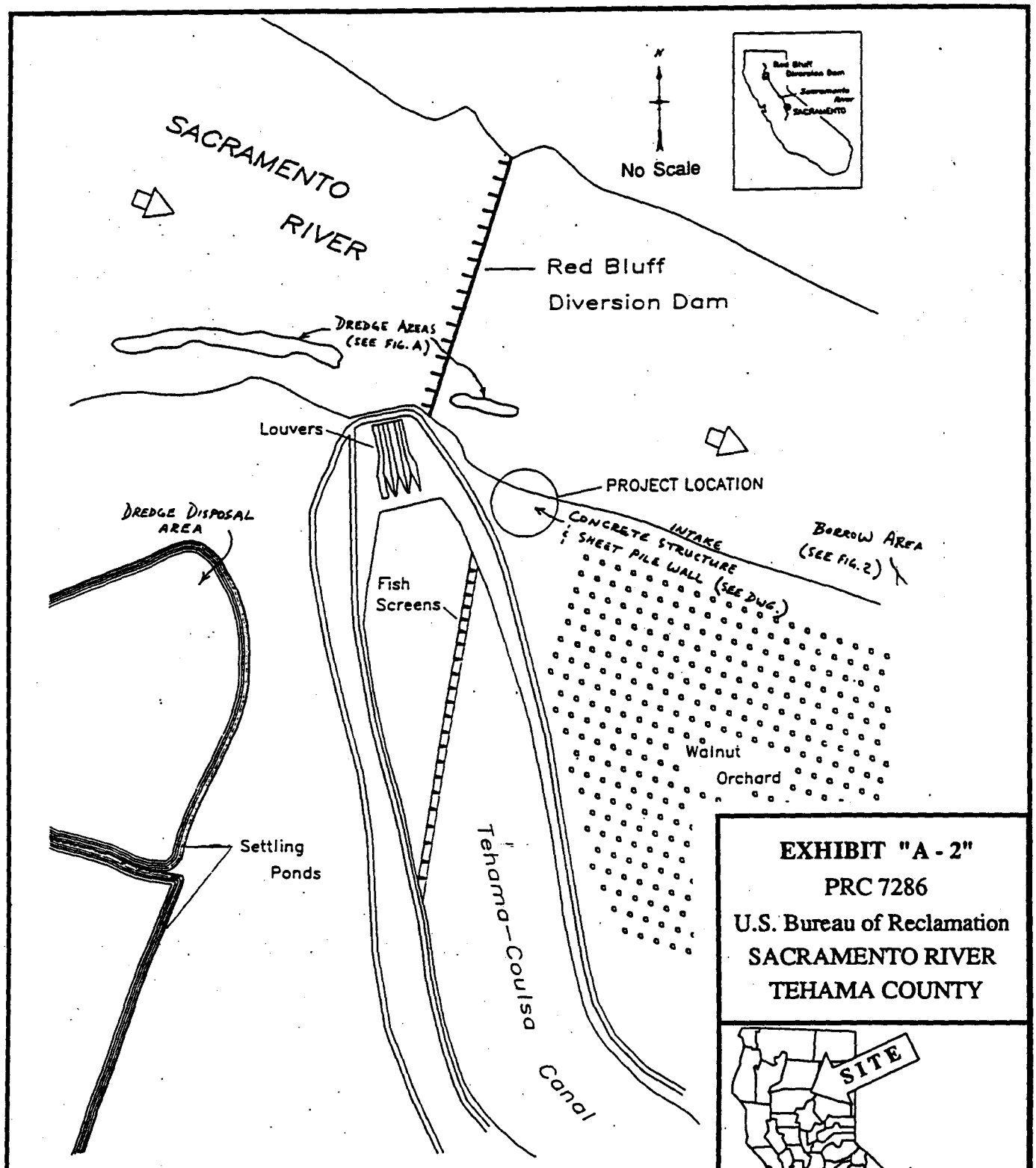

EXHIBIT "A - 2"
PRC 7286
U.S. Bureau of Reclamation
SACRAMENTO RIVER
TEHAMA COUNTY

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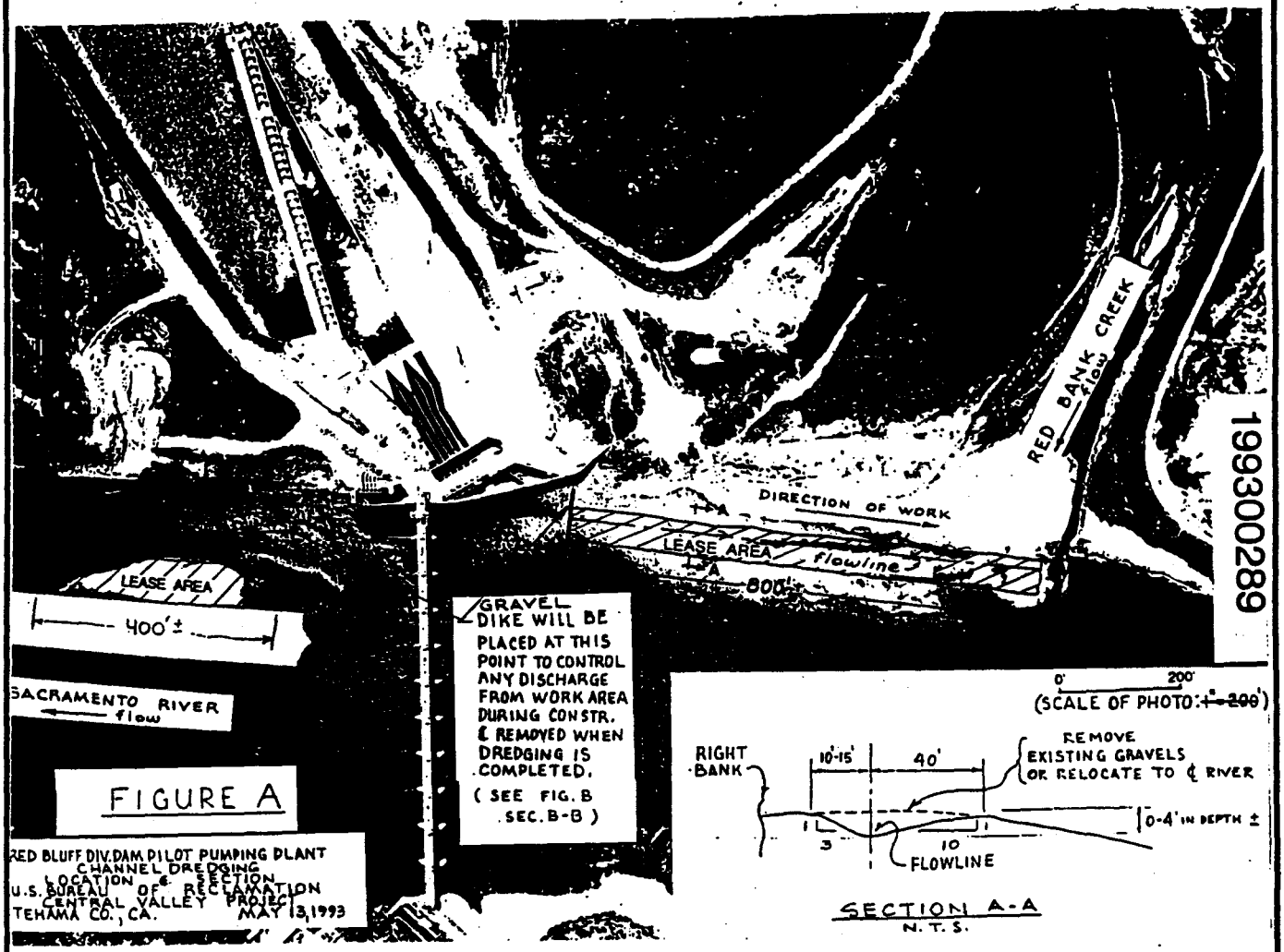
CALENDAR PAGE 145
MINUTE PAGE 2067

CG 12/93



19930289

EXHIBIT "A - 3"

PRC 7286

U.S. Bureau of Reclamation

SACRAMENTO RIVER

TEHAMA COUNTY

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CALENDAR PAGE 146
2068
MINUTE PAGE

CG 12/93

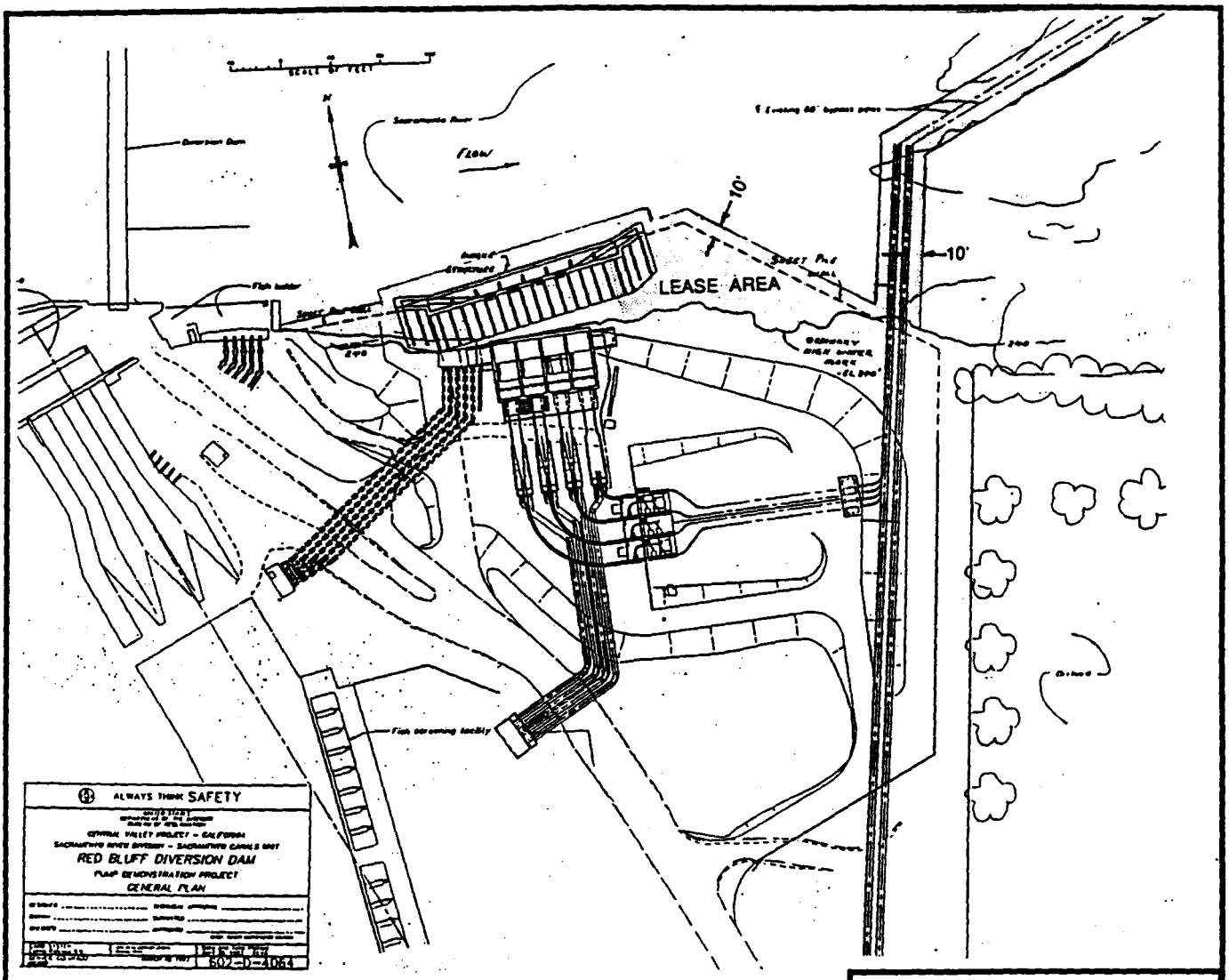
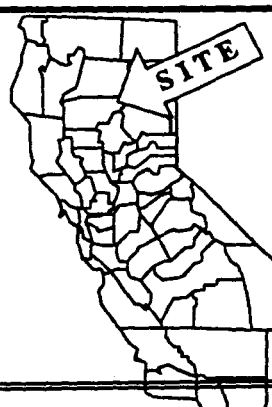


EXHIBIT "A - 4"
PRC 7286
U.S. Bureau of Reclamation
SACRAMENTO RIVER
TEHAMA COUNTY



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CG 12/93

N

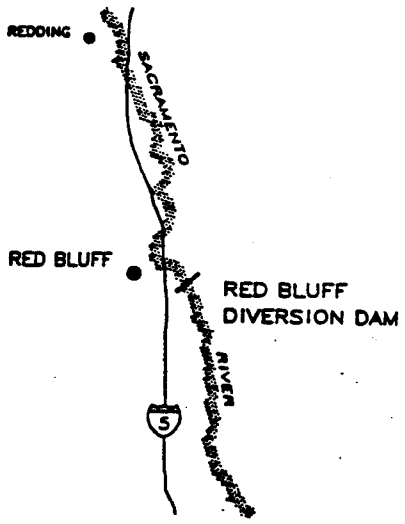
NOT TO SCALE

RED BLUFF PILOT PUMPING PLANT

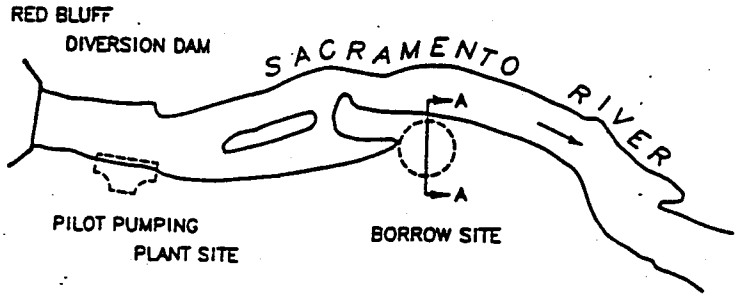
SACRAMENTO RIVER

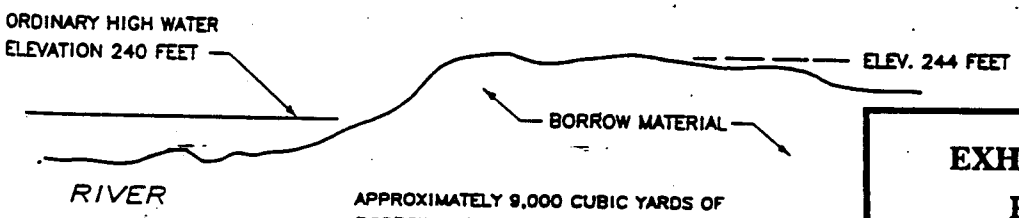
U.S. Bureau of Reclamation

Willows, California



AREA MAP





APPROXIMATELY 9,000 CUBIC YARDS OF BORROW MATERIAL TO BE USED AS BACKFILL FOR PILOT PUMPING PLANT

SECTION A – A

PROPOSED BORROW SITE

EXHIBIT "A - 5"

PRC 7286

U.S. Bureau of Reclamation

SACRAMENTO RIVER

TEHAMA COUNTY

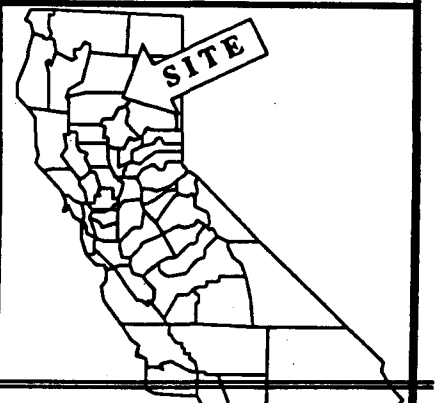


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EXHIBIT "B"

FINAL

ENVIRONMENTAL ASSESSMENT

AND FINDING OF NO SIGNIFICANT IMPACT

Red Bluff Diversion Dam
Pilot Pumping Plant Program

Prepared by

U.S. Department of the Interior

Bureau of Reclamation
Mid-Pacific Region

Sacramento, CA

August 1993

United States Department of the Interior

Bureau of Reclamation

Mid-Pacific Region
Sacramento, California

FINDING OF NO SIGNIFICANT IMPACT

RED BLUFF DIVERSION DAM
PILOT PUMPING PLANT PROGRAM

Recommended: _____
Study Manager

Concur: _____
ACTING Regional Environmental Officer

Approved: _____
ACTING FOR Regional Director

Date: August 11, 1993

FONSI No. 93-05-MP

CALENDAR PAGE	150 2072
MINUTE PAGE	

FINDING OF NO SIGNIFICANT IMPACT
RED BLUFF DIVERSION DAM PILOT PUMPING PLANT PROGRAM

In accordance with the National Environmental Policy Act of 1969, as amended, the Mid-Pacific Regional Office of the U.S. Bureau of Reclamation (Reclamation) has determined that an environmental impact statement is not required for the Red Bluff Diversion Dam (RBDD) Pilot Pumping Plant (PPP) Program.

Reclamation is proposing to assist salmonid populations while meeting the basic project purpose of the RBDD and the Tehama Colusa Canal (TCC) by implementing the Red Bluff Diversion Dam Pilot Pumping Plant Program. The design and placement of the pilot pumping plant has been developed by Reclamation in conjunction with the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game.

The project consists of the installation of a pilot pumping plant immediately downstream of the RBDD which will include one helical pump (100 cubic feet per second (cfs)) and two closed Archimedes screw pumps (100 cfs, each). It is expected that the Archimedes pumps will allow fish to pass through them with minimal impact. The impact of helical pumps are uncertain, but will be evaluated as part of this program. An additional pump either helical or Archimedes (100 cfs) may be added in the future.

The pilot pumping plant is proposed to begin operating in December of 1994. The normal annual operating period will run from September 15 to May 14. This would facilitate gates of the diversion dam to be up for an additional two months of the year, when compared to historical operations and thus allow for essentially unimpeded fish passage for this period of time. The pumps themselves are expected to have minimal impact on juvenile fish (25 mm and larger) migrating downstream. Impacts will be minimized by monitoring at the evaluation facility and implementing appropriate corrective measures, as necessary, through flexibility designed into the pilot pumping plant. This would include activities such as speed control, exchangeability of the trashrack, intake bell housings, vertical screens, operational flexibility of the bypass system and other features.

This project is expected to help prevent further loss of the threatened winter-run chinook salmon and facilitate continued delivery of water in the TCC. Without implementation of this program, and the continuation of normal operations at the Red Bluff Diversion Dam, a further decline in this species may occur and recovery may be inhibited.

The following are the reasons why the impacts of the proposed action are not significant:

1. The normal operation of the Red Bluff Diversion Dam will not be adversely impacted during the construction period and efforts to minimize impact on the

environment will be taken at every opportunity. Sheet pile will be installed to provide hydraulic isolation that will eliminate any disturbance of the river from construction.

2. Borrow material will be taken from an existing borrow area previously used by Reclamation. This site is serviced by a permanent road approximately 3/4 mile long. No threatened or endangered species occur at this site. Approximately 9,000 cubic yards of free draining material will be obtained here. No additional disturbance of the existing borrow area will occur.

3. The project will not affect public safety. All necessary precautions will be taken during the construction period. Traffic control will be utilized where necessary. Traffic on the road to access the construction site and the borrow area will be appropriately controlled by flagmen and warning signs during the construction period.

4. There will be no long-term adverse affects to fish. After construction, long-term effects of the PPP may help prevent further decline of the salmonid population while allowing the continuation of the basic project purpose of the RBDD and the TCC. The new base operation conditions required for the Central Valley Project includes maintenence of the RBDD gates in an uninterrupted raised position from September 15 to May 14. The PPP would allow flexibility to meet this requirement and still meet water delivery requirements.

5. There will not be any impact on the following Federally listed threatened, endangered or candidate species: the winter-run chinook salmon, (Oncorhyncus tshawytscha), the Valley Elderberry Longhorn Beetle (VELB), (Desmocerus californicus dimorphus), the Northwestern pond turtle, (Clemmys marmorata marmorata), the bald eagle, (Haliaeetus leucocephalus), Sacramento splittail, (Pogonichtys macrolepidotus), the green sturgeon, (Acipenser medirostris); the California red-legged frog, (Rana aurora draytonii), silky cryptantha, (Cryptantha crinita) and the adobe lily, (Fritillaria pluriflora).

6. Any vegetation, which may exist at the construction site, downstream of RBDD, will be replanted to replace that lost due to construction activity.

7. Recreation may be disrupted during the construction period. However, following completion of the pilot pumping plant, extended gates-up operation will allow for additional benefits to be realized by sport fishermen if, as expected, a subsequent inprovement in salmonid population results. The formation of Lake Red Bluff will occur after the gates of the RBDD are closed, beginning in mid-May before the Memorial Day holiday.

8. The project will not adversely affect water quality. Construction specifications will include a water quality management plan to minimize any impacts.

9. There will be no adverse impact from noise to the area surrounding the construction site.

10. The RBDD Pilot Pumping Plant will be located in an area completely altered by the construction of the Tehama Colusa Canal. A survey of the general area has been performed for cultural resources and none exist at the proposed site. In the unlikely occurrence that cultural resources are encountered after the project has begun, the procedures in 36 CFR 800.11 would be followed. The contractor would cease work at that location and notify Reclamation. Reclamation's Regional Archeologist would assess the nature and value of the site and would recommend to the State Historic Preservation Officer (SHPO) a course of action. Appropriate mitigation, as determined through negotiations with SHPO, would be completed for any significant sites.

11. There is no long term adverse impact to social and economic conditions that may result with the installation of the PPP at RBDD.

12. A need was identified to generate greater sweeping flows past the Red Bluff Diversion Dam Pilot Pumping Plant. Changes in the design of the PPP have been incorporated in order to generate these flows past the PPP intake. The changes include repositioning the intake (a 9 degree rotation which moves the upstream end of the intake about 5 feet and the downstream end about 30 feet further into the river).

The implementation of additional measures to achieve increased flows will be initiated following construction of the PPP. Initially, five possible courses of action were suggested to facilitate greater sweeping flows at the intake of the PPP. These options include:

1) gate manipulations at RBDD;
2) dredging of the site above and below RBDD, and;
3) use of groins or other channel control structures in the river;
4) constricting the channel cross section above the dam; and
5) a combination of the above.

Continued hydraulic model studies combined with comments from the first and second revised Draft Environmental Assessment (EA) review have led Reclamation to select a version of number 5) above as the channel modification option recommended for implementation. This option incorporates gate manipulation at RBDD with limited upstream dredging, has comparable flow manipulation benefits to the other channel modification options considered, and can be achieved at minimum cost, with no in-river construction. Only if this option fails to provide the necessary sweeping flows would other options be considered. A detailed explanation of the selected option as well as the other alternatives considered is provided in Appendix E of the EA. All options, other than the selected gate manipulation combined with upstream dredging, will be subject to separate environmental documentation at a later date, depending on their scope and nature.

ENVIRONMENTAL COMMITMENT LIST

The following is a summary list of environmental commitments that Reclamation would implement as part of the proposed alternative to lessen the effects on the environment. Additionally, Reclamation is committed to working with the participating agencies to correct to the extent practicable any design and/or operational sources of salmon mortality found during the evaluation studies.

1. Construction will begin in April, which would have the least impact on the winter-run in the Sacramento River adjacent to the proposed construction site.

The borrow area for the free draining material to be used for building the coffer dam, will be located at a site further downstream. This site was previously used by Reclamation as a borrow area for another project. It is serviced by a permanent road approximately 3/4 mile long. No endangered species of vegetation or wildlife occur at this site. Approximately 12,000 cubic yards of free draining material will be obtained here. No additional disturbance will occur at this site.

Sheetpiling installation is scheduled to be completed by end of April. The addition of rip rap to strengthen both sides of the sheetpiling may occur at this time. With adherence to timely contracting procedures and with favorable weather conditions permitting, installation of the sheetpiling may begin earlier so that the April 30 completion date may be assured.

During some phases of construction, work may take place at night, which will require lighting portions of the river at the construction site. This may affect fish in the vicinity by increasing the predation factor, especially of juveniles. Reclamation intends to minimize the need and the frequency of such lighting during construction.

2. Topsoil at the embankment area will be stockpiled, prior to excavation, for use in revegetation at the site. Embankment hauling will be limited to a maximum number of trucks at a frequency to be determined, in order to minimize highway traffic impacts.

3. All roads will be maintained during construction and repaired, as necessary, following completion of construction. Temporary roads should be scarified after restoring their cross section to their original grades. Surface drainage should be installed, where necessary, to avoid hydraulic rutting and soil removal during precipitation and runoff. No vegetation should be required where the restored slopes are less than 5%.

4. Reclamation will notify local authorities prior to any major construction activity.

5. Truck travel within the construction area will be restricted to speed limits as regulated locally. To minimize disturbance, construction and staging areas will be marked so as to confine equipment to those areas. Adequate erosion controls must also be implemented.

6. Access to the construction site will be restricted and controlled. Public access to the haul roads may also be restricted, if warranted from a safety standpoint.

7. Traffic control will be utilized where necessary. Likely areas include the entrance to the Reclamation facilities at the intersection of Altube Avenue and Road 99W.

8. Reclamation will require the Contractor to obtain encroachment permits from Caltrans for any required traffic control operations. Reclamation will coordinate with Tehama County for use of any road(s) for hauling. Reclamation will notify the California Highway Patrol prior to initiation of hauling.

9. Dust abatement measures will be required and implemented, including watering dirt roads, exposed areas, and soil piles, and covering soil piles in staging areas if piles in staging areas will be worked in the short-term.

10. The contractor will be required to comply with applicable Occupational Safety and Health Administration guidelines. All construction equipment will be required to use properly maintained, factory equipped sound suppression equipment such as mufflers.

11. Although the greatest potential impact during construction will take place during the installation of the sheet pile, the hydraulic isolation that will result after its installation will prevent any further disturbance of the river. In addition, the Contractor would be required to comply with applicable Federal, State, and local laws, orders, regulations, and water quality standards concerning the control and abatement of water pollutants.

Additionally, the Contractor's construction activities would be performed by methods that would prevent entrance or accidental spillage of solid matter, contaminants, debris, or other pollutants into streams, whether flowing or dry watercourses. Precautions shall be taken to prevent excavated material from being washed away by high water or storm runoff.

The Contractor's methods of dewatering, unwatering, excavating or stockpiling of earth and rock materials would include appropriate measures to control siltation. Wastewater from general construction activities, such as drainwater collection, drilling, grouting, or other construction operations, would not be permitted to enter watercourses without the use of approved turbidity control methods. These methods may include, but are not restricted to: interception ditches, settling ponds, gravel-filter entrapment dikes, flocculating processes, recirculation, or combinations thereof.

12. If oak trees of any species are found on the project site, they will be protected if at all possible. If removal is unavoidable, Tehama County will be contacted. Any restrictions they may have on oak tree removal, will be incorporated into the specifications.

13. Other vegetation on site, which creates riparian habitat, or serves to control erosion, will be preserved to the extent possible. All land surfaces having vegetative removal will be suitably replanted to prevent subsequent erosion.

14. If any suspected cultural resources are encountered during construction, all work in the area of the find will be halted until it is evaluated by the Regional archeologist or his designated representative, and the State Historic preservation officer has been consulted (36 CFR 800.11).

15. Additionally, during the construction phase for the PPP, the fish screens for the temporary pumps will be removed prior to cofferdam construction, beginning in mid-March or early April 1994, and will remain out through late summer. They will be replaced prior to pumping for the TCC canal, scheduled to resume on September 15, 1994. It is anticipated that pumping may occur during the gates-up portion of this time period, as necessary, to meet water delivery needs.

16. Biological evaluation studies as listed in Appendix F will be implemented.

APPENDIX F

RED BLUFF DIVERSION DAM PILOT PUMPING PLANT
BIOLOGICAL STUDIES

RED BLUFF PILOT PUMPING PLANT BIOLOGICAL STUDIES *

1993 - 1998

GOALS AND OBJECTIVES - COMPILED BY C. LISTON

I. DETERMINE IF A MAJOR PUMPING PLANT AT RBDD CAN OPERATE WITH MINIMAL LOSS OR HARM OF DOWNSTREAM MIGRATING CHINOOK SALMON YOUNG

A. Determine survivorship and potential injury to young salmon in the present bypass system at RBDD under differing conditions that reflect seasonal and flow rate changes.

Time Frame: May, 1993 - November, 1994

B. Determine survivorship and potential injury to young salmon entrained into the Archimedes and screw-centrifugal pumps under differing conditions that reflect seasonal and flow rate changes.

Time Frame: January, 1995 - April, 1997

C. Determine the efficiency of recovering young salmon in the holding tanks following introduction of fish directly into the pump effluents; if less than 100 % recovery, determine where fish are remaining in the system and recommend and implement improvements.

Time Frame: January, 1995 - March, 1996

D. Determine survivorship and potential injury to young salmon exposed to the various structures of the fish evaluation facility including the immediate area receiving pump effluents, sluiceways, separation facilities with vertical angled screens, bypass channels upstream of the holding tanks, and the holding tanks, under differing conditions that reflect seasonal and flow rate changes.

Time Frame: January, 1995 - September, 1996

E. Determine residence time, survivorship, and potential injury of young salmon in the bypass pipe leading from the fish evaluation facility to the bypass outlet in the Sacramento River under flow rates expected with normal use of the fish evaluation facility, and under "pulsed" flows proposed for transporting fish to the bypass outlet.

Time Frame: January, 1995 - September, 1996

F. Determine movement and behavior of young salmon along trashracks, near openings to the pump barrels, and near the lower end of the Archimedes and screw centrifugal-type pumps using underwater video cameras and hydroacoustics.

Time Frame: November, 1994 - November, 1997

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* Biological study evaluations will be an adaptive management process which may lead to some modifications and changes as the studies progress. The studies are subject to funding availability.

G. Determine predator-prey interactions between young salmon and Sacramento squawfish following passage of young salmon through the Archimedes and internal screw centrifugal pumps.

Time Frame: January, 1996 - June, 1997.

H. Develop an increased understanding of the timing and abundance of downstream migrating salmon in the Sacramento River near RBDD.

Time Frame: April, 1993 - February, 1998

I. Estimate seasonal and annual numbers of downstream migrating salmon young entrained into the RBPPP pumps by sampling holding tanks; determine viability of fish sampled from the holding tanks; determine seasonal and annual percentage of young Sacramento River salmon entrained.

Time Frame: January, 1995 - December, 1998

II. DETERMINE IF A MAJOR PUMPING PLANT AT RBDD CAN BE CONSTRUCTED AND OPERATED IN A MANNER THAT CREATES NO NEW ATTRACTION FOR FISH PREDATORS, AND, WHERE POSSIBLE, MINIMIZES FISH PREDATION NEAR STRUCTURES ASSOCIATED WITH THE PUMPING PLANT

Determine seasonal adult squawfish movements and behavior at RBPPP near RBDD through radiotracking techniques.

Time Frame: April, 1995 - May 1998

Determine seasonal relative numbers of predators near the trashracks and intake structure of RBPPP, and immediately below the bypass outlet in the Sacramento River; if predators increase through time, develop methods for removing or scattering predators.

Time Frame: March, 1994 - May, 1998

L. Determine the extent of predator colonization inside the intake sump area of RBPPP; if predators are residing in this area, develop methods to remove all predators.

Time Frame: May, 1995 - November, 1998

(Note: to accomplish objectives K and L above, considerable electrofishing and possibly netting will be done in the Sacramento River; with this, other species such as green and white sturgeon, catfish and American shad will be sampled and studied for any potential negative interactions between RBPPP and these species; focus will be on "native" species)

III. DETERMINE IF A MAJOR PUMPING PLANT AT RBDD COULD BE OPERATED WITH NO DELETERIOUS EFFECTS ON UPSTREAM SPAWNING MIGRATIONS FOR THE FOUR RACES OF SALMON AND STEELHEAD TROUT IN THE SACRAMENTO RIVER AT RBDD

M. Determine, through radiotracking, the seasonal and diel movement patterns of upstream migrating adult chinook salmon and steelhead trout near the operating RBPPP; if adult salmonid behavior is modified and upstream runs are negatively affected, provide recommendations for operational or structural changes at RBPPP.

Time Frame: January, 1995 - November, 1997

IV. DETERMINE IF AN EXPANDED PUMPING PLANT AT RBDD CAN BE OPERATED WITH NO HARM TO NATIVE SACRAMENTO RIVER FISH POPULATIONS FROM ENTRAINMENT OF LARVAE

N. Determine annual entrainment levels of larval and post-larval fishes in the RBPPP pumps; assess if entrainment rates limit populations of native Sacramento River fishes.

Time Frame: February, 1996 - August, 1997

V. PROVIDE A COMPLETE RECORD OF ENVIRONMENTAL AND ENGINEERING DATA OF IMMEDIATE USE TO ALL RESEARCHERS FOR INTERPRETING BIOLOGICAL DATA

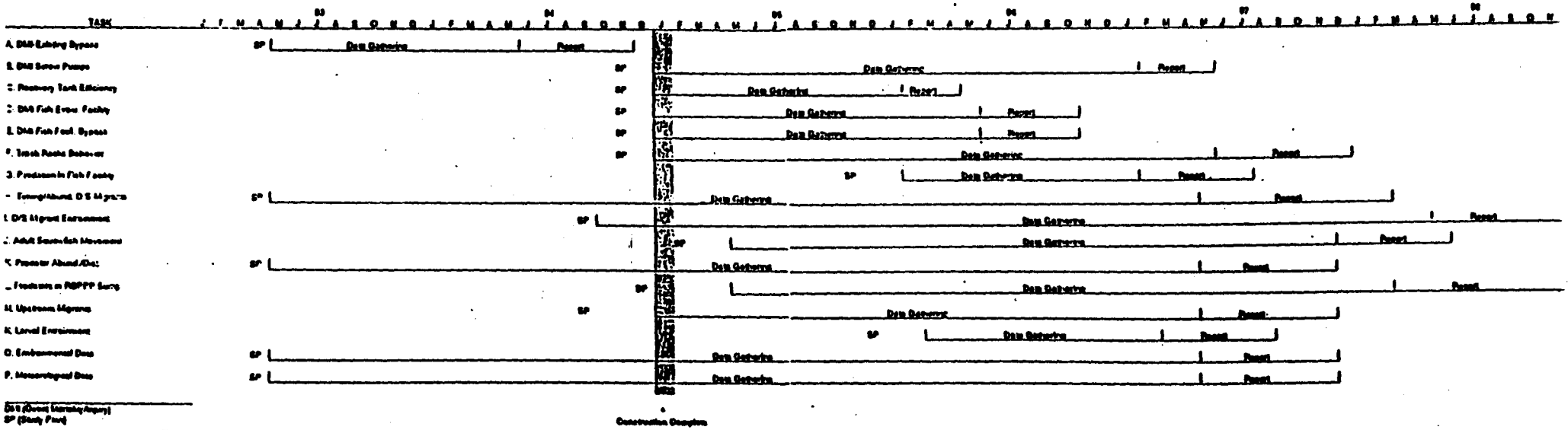
O. Obtain and analyze records of frequent readings of water temperature, dissolved oxygen, pH, conductivity, turbidity, suspended sediments, river stage height, and river flow of the Sacramento River near the intake area of the RBPPP throughout the evaluation study; assure immediate access of data through computer technology to all RBPPP researchers.

Time Frame: May, 1994 - November, 1998

P. Obtain a continuous record of local atmospheric conditions including precipitation, barometric pressure, wind patterns and cloud cover throughout the evaluation study: assure immediate access of data through computer technology to all RBPPP researchers.

Time Frame: May, 1994 - August, 1998

RBPPP Biological Enhancement Tasks and Schedule



D/S (Down Stream Migrant)
SP (Study Plan)