

MINUTE ITEM

This Calendar Item No. C131 was approved as Minute Item No. 131 by the California State Lands Commission by a vote of 3 to 0 at its 6-19-98 meeting.

**CALENDAR ITEM
C131**

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CONSIDER APPROVAL OF A NON-EXCLUSIVE GEOPHYSICAL SURVEY PERMIT ON TIDE AND SUBMERGED LANDS UNDER THE JURISDICTION OF THE STATE LANDS COMMISSION

APPLICANT:

Solid State Geophysical Corporation
Attn.: David Fuller
100 East Second Street
Whitefish, MT 59937

AREA, LAND TYPE AND LOCATION:

The proposed geophysical survey will cover approximately 71 square miles within Sacramento and Solano Counties and includes a portion of the Western Sacramento-San Joaquin River Delta and the Montezuma Hills area. The proposed project area includes State tide and submerged lands in Delta waterways and around Sherman and Decker Islands. Waterways within the project area include the Sacramento River, Horseshoe Bend, and Mayberry Slough.

TERMS OF PROPOSED PERMIT:

Beginning June 1, 1998, through September 30, 1998.

PREREQUISITE CONDITIONS, FEES AND EXPENSES:

Required fees, expense deposit, and other security have been received.

PROPOSED SURVEY:

The geophysical survey will be conducted by establishing a temporary grid of 6,917 seismic detectors on 55 parallel receiver lines. The detectors, called geophones, will be connected to the receiver lines which will be connected to recording instruments. The receiver lines will average 5 - 6 miles in length and will be spaced 1,320 feet apart, progressing southwest to northeast. The combined length of the receiver lines is approximately 287 miles. The seismic cable that will be used for the receiver lines is 3/8 inch, insulated cable in

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connecting segments approximately 240 feet long. Each receiver line will be equipped with 100 - 150 geophone detectors spaced 220 feet apart along the lines. The receiver line cables will be weighted down to the bottom of all waterways where they cross. Geophone stations will be marked by buoys at the 220 foot receiver interval. Placement of the seismic cable will be done by boat or barge. Crossing the receiver lines will be "source lines". Shot holes will be drilled along the source lines and explosives discharged for the seismic source. Source lines will be located perpendicular to receiver lines at 1,320 foot intervals. The proposed project will include approximately 35 source lines, and most lines will have approximately 250 shot holes per line. The shot holes will be spaced 220 feet apart.

No shot holes will be drilled or air guns used in State waterways under this Geophysical Survey Permit.

STATUTORY AND OTHER REFERENCES:

- A. Public Resources Code section 6826.
- B. Public Resources Code section 21080(c).
- C. Public Resources Code section 6870.
- D. California Code of Regulations, section Title 2, Article 2.9, 2100.
- E. California Code of Regulations, section Title 2, 2905(e)(3).
- F. California Code of Regulations, section Title 14, 15074.

PERMIT STREAMLINING ACT DEADLINE:

July 29, 1998

OTHER PERTINENT INFORMATION:

1. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines (Title 14, California Code of Regulations, section 15025), the staff has prepared a Proposed Mitigated Negative Declaration identified as CSLC ND 686, State Clearinghouse No. 98032040. Such Proposed Mitigated Negative Declaration was prepared and circulated for public review pursuant to the provisions of the CEQA.

Based upon the Initial Study, the Proposed Mitigated Negative Declaration, and the comments received in response thereto, there is no substantial evidence that the project will have a significant effect on the environment; Title 14, California Code of Regulations, section 15074 (b).

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2. A Mitigation Monitoring Program has been prepared in conformance with the provisions of the CEQA (Public Resources Code section 21081.6).
3. This activity involves lands identified as possessing significant environmental values pursuant to Public Resources Code section 6370, et. seq. Based upon the staff's consultation with the persons nominating such lands and through the CEQA review process, it is the staff's opinion that the project, as proposed, is consistent with its use classification.

EXHIBITS:

- A. Survey Area
- B. Location Map
- C. Mitigation Monitoring Program

RECOMMENDED ACTION:

IT IS RECOMMENDED THAT THE COMMISSION:

CEQA FINDINGS:

1. CERTIFY THAT A PROPOSED MITIGATED NEGATIVE DECLARATION, CSLC ND 686, STATE CLEARINGHOUSE NO. 98032040 WAS PREPARED FOR THIS PROJECT PURSUANT TO THE PROVISIONS OF THE CEQA AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.
2. ADOPT THE PROPOSED MITIGATED NEGATIVE DECLARATION AND DETERMINE THAT THE PROJECT, AS APPROVED, WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.
3. ADOPT THE MITIGATION MONITORING PROGRAM, AS CONTAINED IN EXHIBIT C, ATTACHED HERETO.
4. FIND THAT THIS ACTIVITY IS CONSISTENT WITH THE USE CLASSIFICATION DESIGNATED BY THE COMMISSION FOR THE LAND PURSUANT TO PUBLIC RESOURCES CODE SECTIONS 6370, ET. SEQ.

CALENDAR ITEM NO. C131 (CONT'D)

AUTHORIZATION:

AUTHORIZE ISSUANCE TO SOLID STATE GEOPHYSICAL CORP OF A NON-EXCLUSIVE GENERAL PERMIT TO CONDUCT GEOPHYSICAL SURVEYS FOR THE PERIOD JUNE 1, 1998, THROUGH SEPTEMBER 30, 1998, USING ONLY GEOPHONES AND RECEIVER LINES ON TIDE AND SUBMERGED LANDS UNDER THE JURISDICTION OF THE COMMISSION WITHIN THE PERMIT AREA DESIGNATED ON EXHIBIT B.

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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.

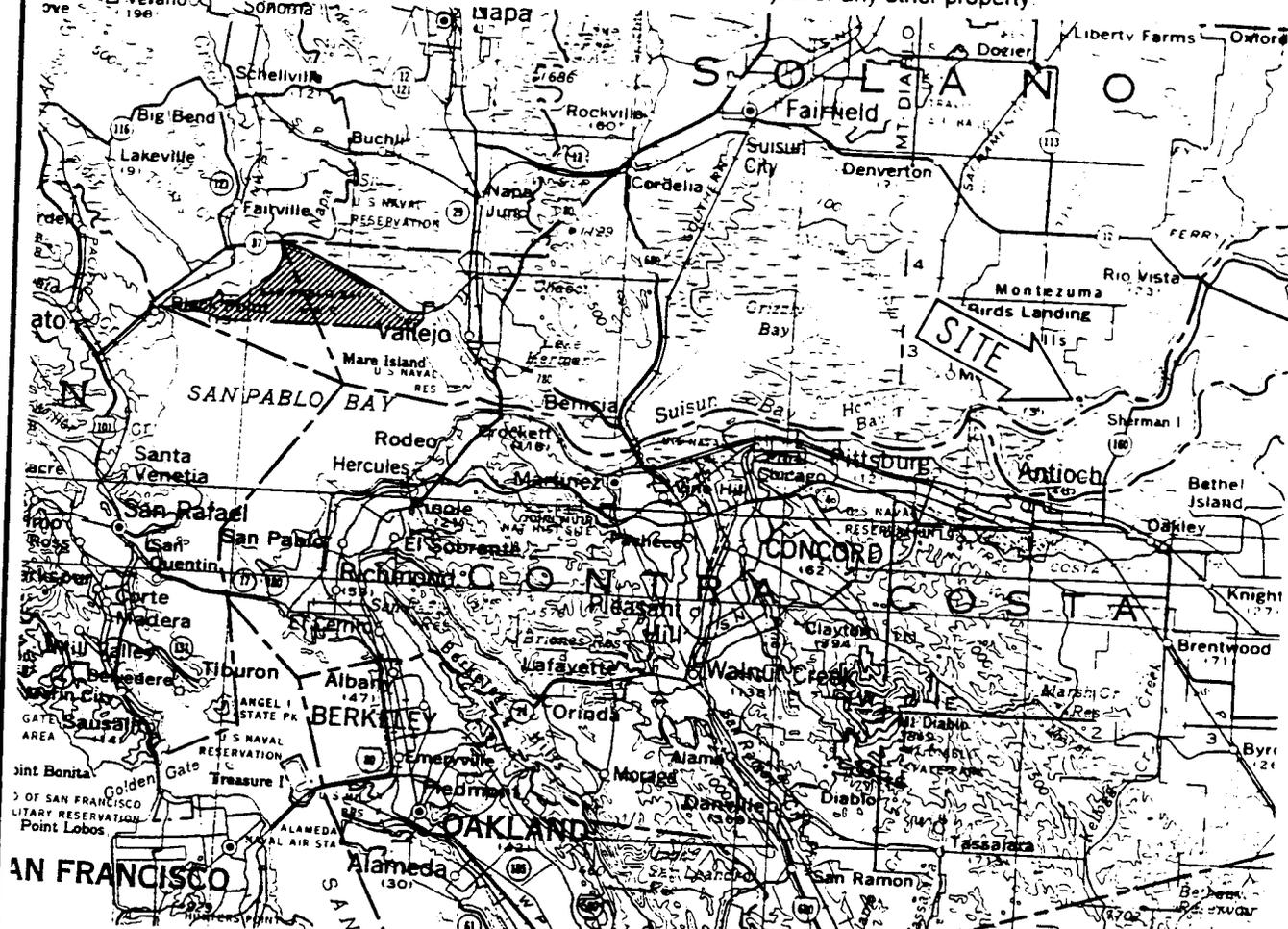


EXHIBIT "A"
 LOCATION MAP
 PRC 6005.62
 GEOPHYSICAL SURVEY-ONSHORE
 SHERMAN ISLAND
 SACRAMENTO/SOLANO CO. CA.



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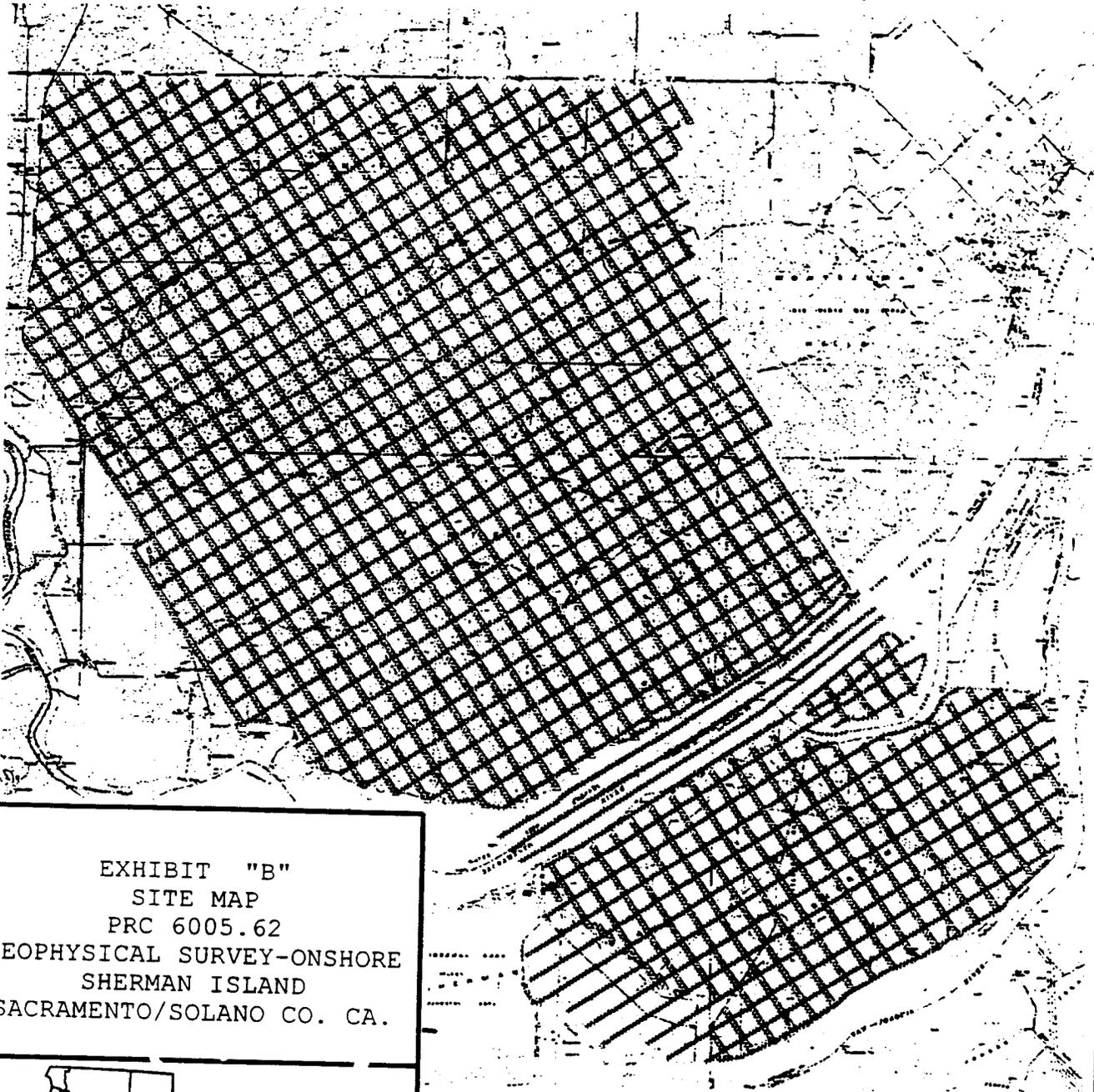


EXHIBIT "B"
SITE MAP
PRC 6005.62
GEOPHYSICAL SURVEY-ONSHORE
SHERMAN ISLAND
SACRAMENTO/SOLANO CO. CA.



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EXHIBIT C

MITIGATION MONITORING PROGRAM

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Solid State Geophysical Natural Gas Exploration Seismic Survey Mitigation Monitoring Program

Mitigation Measure	Implementation	Monitoring Criteria	Compliance and Verification	Effectiveness
<p>BIOLOGICAL RESOURCES</p> <p>Solid State Geophysical shall implement the following mitigation measures to reduce impacts to biological resources to a less-than-significant level:</p> <ol style="list-style-type: none"> 1. Conduct Preconstruction Surveys for the Golden Eagle, Double-Crested Cormorant, Burrowing Owl, Northern Harrier, White-Tailed Kite, Tricolored Blackbird, and Short-Eared Owl, and Determine Presence of the Suisun Song Sparrow and Saltmarsh Common Yellowthroat. [Mitigation Measure 2.7.3.1, attached] 2. Establish a Buffer Area Around Nest Sites. [Mitigation Measure 2.7.3.2, attached] 3. Prohibit all project activities within specified zones for biologically unique habitats. [Mitigation Measure 2.7.3.3, attached] 4. Identify landing sites that will avoid impacts on riparian and marsh vegetation. [Mitigation Measure 2.7.3.4, attached] 5. Avoid removing natural vegetation. [Mitigation Measure 2.7.3.5, attached] 6. Avoid disturbance to wintering waterfowl populations on Sherman Island after October 1, 1998. [Mitigation Measure 2.7.3.6, attached] 7. Provide biological monitors to provide clearance for biologically sensitive areas. [Mitigation Measure 2.7.3.7, attached] 	<p>State Lands Commission as approving agency to include measures, agreed to by the applicant to be a part of the project, in conditions of approval for seismic survey activities.</p> <p>Solid State Geophysical to include/implement measures during the seismic survey activities as specified by criteria listed in Mitigation Measures 2.7.3.1 through 2.7.3.7.</p>	<p>Inclusion of measures into conditions of approval for seismic survey activities.</p> <p>Avoidance of impacts to sensitive biological resources and habitat areas in conjunction with seismic survey activities as specified by criteria listed in Mitigation Measures 2.7.3.1 through 2.7.3.7.</p>	<p>State Lands Commission as approving agency to verify compliance.</p>	

Solid State Geophysical Natural Gas Exploration Seismic Survey Mitigation Monitoring Program (Continued)

Mitigation Measure	Implementation	Monitoring Criteria	Compliance and Verification	Effectiveness
<p>CULTURAL RESOURCES</p> <p>Solid State Geophysical shall implement the following mitigation measure to reduce impacts to cultural resources to a less-than-significant level:</p> <ol style="list-style-type: none"> 1. No seismic survey activities will be conducted near known sites of cultural resources, including prehistoric sites, structures, levees, canals, and ditches, that would result in adverse physical impacts on the site. [Mitigation Measure 2.14.3.1, attached] 2. Halt work within 100 feet of any find of above-ground or buried cultural resources until the find is assessed by a qualified archeologist. [Mitigation Measure 2.14.3.1, attached] 	<p>State Lands Commission as approving agency to include measure, agreed to by the applicant to be a part of the project, in conditions of approval for seismic survey activities.</p> <p>Solid State Geophysical to include/implement measure during all seismic survey activities.</p>	<p>Inclusion of measures into conditions of approval for seismic survey activities.</p> <p>Avoidance of disturbance to cultural resources in conjunction with all seismic survey activities as specified by criteria listed in Mitigation Measures 2.14.3.1.</p>	<p>State Lands Commission as approving agency to verify compliance.</p>	

Native American remains

Attachment to Mitigation Monitoring Program Table
Solid State Geophysical Natural Gas Exploration Seismic Survey

2.7 BIOLOGICAL RESOURCES

2.7.3 Mitigation Measures

Mitigation Measure 2.7.3.1. Conduct Preconstruction Surveys for the Golden Eagle, Double-Crested Cormorant, Burrowing Owl, Northern Harrier, White-Tailed Kite, Tricolored Blackbird, and Short-Eared Owl, and Determine Presence of the Suisun Song Sparrow and the Saltmarsh Common Yellowthroat. Preconstruction surveys will be conducted for the golden eagle, double-crested cormorant, burrowing owl, northern harrier, white-tailed kite, tricolored blackbird, and short-eared owl in the project area when construction activities will occur before August 31. The project proponent shall retain a qualified biologist to survey construction areas for the presence of these nesting species (Mitigation Measure 2.7.3.7). Surveys for the golden eagle will be focused on the areas of historic nesting and the areas in the Montezuma Hills where potential nest trees exist. Surveys for the short-eared owl will only be conducted in the ruderal areas on Sherman Island southwest of Mayberry Slough. Surveys for the double-crested cormorant will be conducted near their historic breeding location on Sherman Island. Surveys for tricolored blackbirds will be conducted in blackberry patches on Sherman Island. Surveys for the white-tailed kite will be conducted in suitable nest trees within the project area. Surveys for northern harriers will only be conducted in suitable ruderal or grassland habitat.

Preconstruction surveys will focus on specific species occurring in specific habitat types or locations in the project area. The surveys would include driving to specific high-quality habitat types in the project area and inspecting the habitats for nesting special-status species. Potential nesting locations (or survey areas) are known to exist on the project site for many of the species that would require preconstruction surveys, including golden eagle, double-crested cormorant, and short-eared owl. Preconstruction surveys for these species will take less than one day. However, only general potential nesting areas are known for the tricolored blackbird, northern harrier, white-tailed kite, and burrowing owl. Preconstruction surveys for these species will take 2-3 days.

If no nesting golden eagles, double-crested cormorants, tricolored blackbirds, white-tailed kites, northern harriers, or short-eared owls are found, construction activities may proceed and no further mitigation measures are required. If nesting sites are found, Mitigation Measure 2.7.3.2 has been incorporated to reduce potential impacts to a less-than significant level.

The qualified biologist shall also determine the presence of the Suisun song sparrow and the saltmarsh common yellowthroat in marsh and riparian habitat areas. If the marsh and riparian habitat areas are not occupied by the Suisun song sparrow or the saltmarsh common yellowthroat, a 50-foot buffer will be established. If the marsh and riparian habitats are occupied by the Suisun song sparrow or the saltmarsh common yellowthroat, a 100-foot buffer will be established around the marsh and riparian habitat areas. (Refer to Mitigation Measures 2.7.3.2 and 2.7.3.3)

Implementing Party: Solid State Geophysical Corporation.

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Timing: Survey and stakeout phase.

Standards for Success: Impacts on nesting special-status species are avoided.

Monitoring Program: Refer to Mitigation Measure 2.7.3.7.

Mitigation Measure 2.7.3.2. Establish a Buffer Area Around Nest Sites. Where nest sites are identified during preconstruction surveys, the qualified biologist will establish the following buffer zones around the nest sites and no seismic survey activities will occur within these buffer zones.

Golden Eagle Nests: To avoid or minimize impacts on this species, a ½-mile buffer area will be identified around active golden eagle nests until young have fledged or the eagles are no longer attempting. The ½-mile buffer can be reduced depending on topographic features in the area (e.g., nests located on hillslopes would not be disturbed from activities on the opposite side of the hill even though the opposite side of the hill is less than ½ mile from the nest). No further mitigation measures are required once young have fledged or adults have stopped nesting attempts for the 1998 breeding season.

Tricolored Blackbird, Northern Harrier, White-Tailed Kite, and Short-Eared Owl Nests: To avoid and minimize impacts on this species, a 300-foot buffer area will be identified around active tricolored blackbird, northern harrier, white-tailed kite, and short-eared owl nests until young have fledged or the species are no longer attempting to nest. No further mitigation measures are required once young have fledged or after August 1.

Double-Crested Cormorant Breeding Colony. To avoid impacts on this species, a 450-foot buffer area will be identified around the double-crested cormorant colony. No further mitigation measures are required once young have fledged or after August 1.

Burrowing Owl Burrows. A 250-foot buffer area will be identified and flagged around all burrowing owl sites. The buffer area can be removed before August 31 if a qualified biologist determines that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

Suisun Song Sparrow and Saltmarsh Common Yellowthroat. A 100-foot buffer zone will be identified and flagged around marsh and riparian habitat areas occupied by the Suisun song sparrow or the salt marsh common yellow throat. If the marsh and riparian habitat areas are not occupied by the Suisun song sparrow or the saltmarsh common yellowthroat, a 50-foot buffer will be established around the marsh and riparian habitats.

Implementing Party: Solid State Geophysical Corporation.

Timing: Survey and stakeout phase, drilling phase, acquisition (line layout and line pickup) phase.

Standards for Success: Impacts on nesting special-status species are avoided.

Monitoring Program: Refer to Mitigation Measure 2.7.3.7.

Mitigation Measure 2.7.3.3. Prohibit All Project Activities Within Specified Zones for Biologically Unique Habitats. The locations on the project area where biologically unique habitats could potentially occur are shown in Figure 2-1. The project proponent shall retain at least one qualified biologist to identify biologically unique habitat areas and establish the following buffer zones for these habitat areas during the survey and stakeout phase:

- Vernal pools and swales: 250 feet.
- Marsh and riparian habitats: 50 feet if not occupied by the Suisun song sparrow or saltmarsh common yellowthroat: 100 feet if the biologist determines the site is occupied by the saltmarsh common yellowthroat or the Suisun song sparrow (refer to Mitigation Measure 2.7.3.7).
- Alkaline flats: 50 feet.
- Sensitive grassland and meadow habitats: 50 feet.

To avoid impacts on sensitive habitats and associated plant and wildlife species, the project proponent shall ensure that no project activities occur within the specified buffer zones for biologically unique habitats. In order to inspect and ensure compliance with this measure, a qualified compliance monitor shall be onsite during the drilling phase and acquisition phase (line layout and line pickup) of the proposed project when these project activities are occurring in the vicinity of these identified unique biological habitats and associated buffer zones. (Refer to Mitigation Measure 2.7.3.7.)

Implementing Party: Solid State Geophysical Corporation.

Timing: Survey and stakeout, drilling, acquisition phases.

Standards for Success: Biologically sensitive habitats are avoided.

Monitoring Program: Refer to Mitigation Measure 2.7.3.7.

Mitigation Measure 2.7.3.4. Identify Landing Sites That Will Avoid Impacts on Riparian and Marsh Vegetation. During the survey and stakeout phase, a qualified biologist will identify four to five landing sites along the north and south side levee banks of the Sacramento River, two sites along the east and west sides of the northwestern portion of Horseshoe Bend, and three sites along the north and south side levee banks of the Mayberry Slough. The survey crews will use the identified landing sites to connect cables across the river to maintain connectivity between Sherman and Decker Islands and the Montezuma Hills and surrounding areas. The biologist will choose landing sites that are dominated by ruderal vegetation and conduct a special-status species survey to ensure that no special-status plant and wildlife species are present at these sites.

In the event the analog "bottom cable" system is deployed, this mitigation measure will be implemented as described above except that only one or two landing sites will be identified along the north and south side levee banks of the Sacramento River. These site locations will be selected

as close as possible to the midpoint of the receiver lines given biological resource protection constraints.

To ensure compliance with this measure, a qualified compliance monitor will be onsite when survey operations associated with the acquisition phase are being conducted within the vicinity of the identified landing sites.

During the survey acquisition phase, lines that transverse landings into the waterways to maintain cable connectivity are not in violation of Mitigation Measure 2.7.3.3 if they must unavoidably transverse sensitive marsh or riparian habitat in order to reach the landing. The qualified biologist shall first determine whether the lines can be rerouted to avoid the sensitive habitats. If the biologically unique habitat is unavoidable, the project proponent shall ensure that:

- corridors for the cable connections are identified by the qualified biologist that do not significantly affect special-status plant or wildlife species within these unique habitat areas;
- where feasible, low-impact methods of deploying these connecting lines are used, such as throwing the lines across narrow riparian habitat areas;
- activities take place away from riparian or streamside vegetation and emergent marsh vegetation;
- no excessive vehicular or foot traffic takes place in these areas;
- coupling and decoupling of geophones and cables is conducted on unvegetated portions of the bank or levee or from boats; and
- boat landings are minimized and located on unvegetated or riprap revetment areas where feasible.

Implementing Party: Solid State Geophysical Corporation.

Timing: Survey and stakeout phase and acquisition phase.

Standards for Success: Impacts on riparian and marsh vegetation are avoided.

Monitoring Program: Refer to Mitigation Measure 2.7.3.7.

Mitigation Measure 2.7.3.5. Avoid Removing Natural Vegetation. In addition to the buffer zones established pursuant to Mitigation Measure 2.7.3.3, to avoid impacts on sensitive habitats and special-status plant species, the project proponent shall ensure that no vegetation will be cut, cleared, or otherwise removed in any habitat types other than agricultural or herbaceous upland (ruderal) types. The qualified biologist will identify natural vegetation areas and assist the project personnel with rerouting to avoid these areas.

Implementing Party: Solid State Geophysical Corporation.
Timing: Survey and stakeout phase and acquisition phase.
Standards for Success: Disturbance to natural vegetation is avoided.
Monitoring Program: Refer to Mitigation Measure 2.7.3.7.

Mitigation Measure 2.7.3.6. Avoid Disturbance to Wintering Waterfowl Populations on Sherman Island after October 1, 1998. In the event seismic survey operations are conducted on Sherman Island after October 1, 1998 (i.e., October - December 1998), the project proponent shall ensure that all major roosting areas for waterfowl populations (e.g., snow geese, tundra swans, white-fronted geese, pintails, mallards) will be identified by a qualified biologist on an ongoing basis throughout the duration of the project and shall be avoided while they are occupied. Generally, birds will disperse off of roost sites in the morning and return during the late afternoon. To protect wintering waterfowl populations on Sherman Island, restrictions for all project activities on Sherman Island after October 1, 1998, shall be implemented as follows:

- No project activities, including helicopter flights, will occur within 1,000 feet of waterfowl roost sites before 8:00 a.m. each morning and after 4:00 p.m. each evening. These timing restrictions shall be modified based on the findings of the initial monitoring (refer to Mitigation Measure 2.7.3.8). If monitoring determines that roosts are occupied for longer periods during the day, these areas shall be avoided until the biological monitor determines the roosts are unoccupied.
- To avoid keeping birds off of important foraging areas for extended period, the project proponent shall avoid continual concentrated activity in any specific area for more than 5 consecutive days. If clean-up work or other activities required additional time in any specific area, no work will be permitted until after 5 consecutive non-work days have passed, unless the project proponent is given clearance to enter the area by the biological monitor.

Implementing Party: Solid State Geophysical Corporation.
Timing: Stakeout and survey, drilling, or acquisition phases after October 1, 1998.
Standards for Success: Disturbance to wintering waterfowl roost sites is avoided.
Monitoring Program: Refer to Mitigation Measure 2.7.3.7.

Mitigation Measure 2.7.3.7. Provide Biological Monitors to Provide Clearance for Biologically Sensitive Areas. The project proponent shall hire at least one qualified biologist to provide clearance for sensitive areas before any project activity commences. The qualified biologist shall be onsite during the survey and stakeout phase of the project to assist ground crews with flagging the biologically unique or sensitive habitat areas, such as vernal pools and riparian habitats associated with drainages and channels. During the survey and stakeout phase the biologist will work with survey GPS crews to input and map the location of the identified sensitive habitat areas. The qualified biologist will have experience in the identification and behavior of the special-status wildlife species described in this section, habitat assessment, and identification of special-status plant

species, and will have general knowledge of the natural resources of the Montezuma Hills and the Delta.

The project proponent shall also hire a qualified compliance monitor to be onsite during the drilling and the acquisition phases of the seismic survey activities at times when ground crews and heavy equipment are in the vicinity of the sensitive biological resource areas flagged during the survey stakeout phase. The compliance monitor shall ensure that project activities are conducted in a manner consistent with the mitigation measures so that impacts on sensitive habitats and special-status species are avoided or minimized.

The qualified biologist will be responsible for the following:

- Identifying nesting areas for the golden eagle, double-crested cormorant, burrowing owl, northern harrier, white-tailed kite, tricolored blackbird, and short-eared owl, and determine the presence of the Suisun song sparrow and saltmarsh common yellowthroat as described in Mitigation Measure 2.7.3.1. The biologist shall identify the boundaries of nest sites and establish buffer zones for the areas as provided in Mitigation Measures 2.7.3.2 and 2.7.3.3.
- Identify wintering waterfowl populations and major roosting areas on Sherman Island in the event seismic survey activities occur on Sherman Island after October 1, 1998, as described in Mitigation measure 2.7.3.6.
- Identifying all biologically unique habitats (e.g., vernal pools, riparian areas, and alkaline flats) that will be avoided by the project proponent as described in Mitigation Measure 2.7.3.3. As part of this responsibility, the biologist shall determine whether marsh and riparian habitats within the project area are occupied by the saltmarsh common yellowthroat or the Suisun song sparrow. The biologist will establish appropriate buffer zones for these habitat areas.
- Identifying landing sites that will avoid impacts on riparian and marsh vegetation as described in Mitigation Measure 2.7.3.4. *3 Sherman to Decker*
- Conducting preconstruction surveys for rare plants in all suitable habitats potentially affected by project activities (surveys need not occur in areas where avoidance is indicated).
- Monitoring vegetation removal to ensure that removal of natural vegetation is avoided as describe in mitigation measure 2.7.3.5.

The qualified compliance monitor will be responsible for the following:

- Ensuring compliance with Mitigation Measures 2.7.3.3 and 2.7.3.4 during the survey drilling and acquisition phases as described in those measures.
- Reporting incidents of noncompliance directly to field crews and to project supervisors.

Both the qualified biologist and the qualified compliance monitor shall be responsible for:

- Communicating directly with the project supervisor and ground crew and providing information as needed to the project supervisors on the locations of sensitive habitat areas. If necessary, the qualified biologist shall conduct an employee orientation program for all project personnel. The orientation shall include the occurrence and distribution of listed species and other sensitive resources in the project area, measures being implemented to protect these sensitive resources during project actions, and applicable definitions and prohibitions under the state and federal Endangered Species Acts.

Implementing Party: Solid State Geophysical Corporation.

Timing: Stakeout and survey, drilling, and acquisition phases.

Standards for Success: Successful implementation of biological resources mitigation measures.

Detailed Implementation Procedures for Mitigation Measures 2.7.3.1 to 2.7.3.7

Under the direction of the CSLC, the qualified biologist (Biologist) and qualified compliance monitor (Compliance Monitor) shall implement and monitor compliance with the requirements of the Negative Declaration for this project.

The Biologist and Compliance Monitor shall be familiar with and follow guidelines recommended for seismic operations published in the International Association of Geophysical Project Monitors (IAGC) "Land geophysical operations: Safety Manual" (IAGC 1991 and current edition).

The Biologist's scope of services will be to work onsite during the survey and stakeout phase of the project to assist ground crews with flagging the biologically unique or sensitive habitat areas, such as vernal pools and riparian habitats associated with drainages and channels. During the survey and stakeout phase the Biologist will work with survey GPS crews to input and map the location of the identified sensitive habitat areas. The Biologist will assist the survey and stakeout crew to identify repositioning of travel paths for source and receiver lines, as necessary, within travel corridors so as to meet agency criteria for T&E resource avoidance.

The Biologist will have experience in the identification and behavior of the special-status wildlife species described in the Initial Study/Negative Declaration, habitat assessment, and identification of special-status plant species, and will have general knowledge of the natural resources of the

Montezuma Hills and the Delta. The Biologist shall employ agency-approved methods of the California Native Plant Society, (CNPS 1991), CDFG (1984), Nelson (1987), The California Burrowing Owl Consortium (1993), and guidelines given in Section 402.12 of the Federal Register Vol. 51, No. 106, pp. 19960-19963 to survey for sensitive wildlife and special status plant species.

The Compliance Monitor's scope of services will be to work onsite during the drilling and the acquisition phases of the seismic survey activities at times when ground crews and heavy equipment are in the vicinity of the sensitive biological resource areas flagged during the survey stakeout phase. The Compliance Monitor shall ensure that project activities are conducted in a manner consistent with the mitigation measures so that impacts on sensitive habitats and special-status species are avoided or minimized. As necessary, the Compliance Monitor shall assist layout crews in positioning source and receiver lines to avoid impacts to sensitive biological resources as identified by the Biologist and mapped by the survey and stakeout crew.

Biological Surveys and Compliance Monitoring Tasks

The Biologist will work with the survey crew during this survey and stakeout phase during which sensitive biological and other cultural resources are identified, mapped, and flagged for avoidance. To avoid disturbance to sensitive habitat areas (e.g. vernal pool areas), the Biologist will coordinate with the survey and stakeout crew each day and provide biological survey data to the crew for sensitive wildlife and special status plant species and unique habitats. These areas will be identified in the field and mapped electronically for project personnel and equipment avoidance. Communication will occur between the Biologist and the stakeout and survey crew via hand-held two-way radio, mobile phone, and at any daily meetings concerning these issues.

A typical day for the Biologist will be to:

1. Attend any appropriate meetings at the survey site to report on the status of survey and stakeout activities.
2. Dispatch to the field and conduct surveys for sensitive nesting bird species, and other sensitive wildlife and special status plant species, as defined in the Negative Declaration, prior to project activities. Sensitive water channel crossings and other types of habitats will be identified in advance for avoidance.
3. Participate in the initial survey and stakeout phase of the project, and communicate with the survey and stakeout crew to enable the crew to map the location of sensitive habitat and/or resources for avoidance. Communications may occur by any practicable means including two-way radios or hand-held telephones. Biological resources and sensitive habitats will be placed on the map each day. Seismic surveyors will digitize these areas into their data base.

The Compliance Monitor will ensure biological resource mitigation compliance during the drilling

and acquisition phases when survey crews are in the vicinity of sensitive biological resources. Solid State Geophysical Corporation will provide advance notice to the Compliance Monitor when drilling or acquisition activities (line layout or pickup) are expected to occur on the vicinity of sensitive biological resource areas. The Compliance Monitor will work in close proximity to the crew throughout those days. This approach will be used to direct seismic field crews for resource avoidance and cable and/or shothole re-routing and relocations.

A typical day for the Compliance Monitor will be to:

1. Attend any appropriate meetings at the survey site regarding biological mitigation compliance. Communication during the day is mandatory between the Compliance Monitor and the seismic crew so that resource avoidance and compliance will be met.
2. Communicate with the seismic crew, as often and by any means necessary, to direct and monitor the crew for reroutes, relocations, planning while in the vicinity of a sensitive habitat or resource.

The Compliance Monitor shall monitor for compliance and non-compliance issues and report them to CSLC and to Solid State Geophysical. The Compliance monitor will report weekly to the CSLC regarding project compliance. Infractions will be conveyed to the seismic crew(s) and their managers and to CSLC by phone or e-mail. Strategies will be implemented immediately to correct non-compliance, repair damage and ensure that they do not reoccur.

Reference and Methodology Literature Cited

California Burrowing Owl Consortium. 1993. Burrowing owl survey protocol and mitigation guidelines. Draft Unpubl. Rpt. by the California Burrowing Owl Consortium. 15 pp.

California Department of Fish and Game (CDFG). 1984. Guidelines for assessing effects of proposed developments on rare and endangered plants and plant communities. The Resources Survey, CDFG. 1 pp.

California Native Plant Society (CNPS). 1991. Mitigation guidelines regarding impacts to rare, threatened, and endangered plants. Unpublished manuscript by CNPS - Rare plant scientific advisory committee. 17 pp.

International Association of Geophysical Project Monitors (IAGC). 1991. Land geophysical operations: Safety manual. Printed by Conoco Inc., Ponca City, Oklahoma. 191 pp.

Jones and Stokes Associates, Inc. 1998. Initial study and proposed negative declaration for Solid State Geophysical natural gas exploration seismic survey of the Montezuma Hills and Western Delta. Unpublished report prepared for the California State Lands Commission.

Nelson, J. R. 1987. Rare plant surveys: Techniques for impact assessment. pp. 159-166. In: T.

2.14 CULTURAL RESOURCES

2.14.3 Mitigation Measures

Mitigation Measure 2.14.3.1. Halt Work Within 100 Feet of Any Find of Above-Ground or Buried Cultural Resources until the Find is Assessed by a Qualified Archeologist. Solid State Geophysical Corporation shall ensure that no seismic survey activities are conducted near known sites of cultural resources, including prehistoric sites, structures, levees, canals, and ditches, that would result in adverse physical impacts on the site. If above-ground or buried cultural resources (such as chipped or ground stone, historic debris, building foundations, human bone, remnants of village structure, lithic scatters) are inadvertently discovered during seismic survey activities (including drilling, cable and platform placement, and detonation), Solid State Geophysical Corporation shall stop work within that area and within 100 feet of the find until a qualified archeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Appropriate treatment measures shall be implemented before ground-disturbing activities in the area are resumed.

Implementing Party: Solid State Geophysical Corporation

Timing: During all phases of the seismic survey operation.

Standards for Success: Identification and protection of important cultural resources at the project site.

Monitoring Program: Cultural resource monitoring would be limited to the vicinity of the survey site. No additional monitoring is recommended.

Detailed Implementation Procedures for Mitigation Measure 2.14.3.1.

1. The project proponent shall not conduct any seismic survey operations within 300 feet of cultural resources identified within the project area via the cultural records search conducted by the North and Central and Northwest Information Centers of the California Historical Resources Information System.
2. If above ground or buried cultural resources are inadvertently found during seismic survey activities, the project proponent shall stop work within that area and within 100 feet of that find until a qualified archeologist can assess the significance of any unearthed cultural resources and, if necessary, develop appropriate treatment measures in consultation with the Commission's Project Manager and SHPO, as specified in Mitigation Measure 2.14.3.1.