



EXHIBIT I - C

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EXHIBIT III - MODE OF OPERATIONS

The energy source utilized for this project shall be dynamite. The majority of the project will use the down hole phonyx system. This requires the drilling of data collection points along the seismic line location at an interval of 165'. Each data collection point will be 50' in depth with a phonyx phone (a sensing device) and a 6 lbs. charge placed at the bottom of each hole. The only exceptions to this procedure are as may be required by California Department of Fish and Game and as illustrated in Exhibit IV Operations In The Vicinity of Levees. Every hole shall be satisfactorily plugged following OSHA, California Oil and Gas Commission and local government standards.

In areas where the geophysical data shows little or no effect due to the peat soil a mini hole energy method may be used. This method will involve the drilling of nine 5' hole, each loaded with a 1/3 lbs. charge. This pattern of drill holes will be repeated every 330'. Instead of a phonyx phone a set of geophones will be placed on the surface of the ground at each data collection point.

CGG shall employ the use of two different recording systems, depending on need and availability. The majority of the seismic data will be collected with the Myriaseis Recording System. This system is a radio telemetry system, where the seismic signal generated by the geophones or phonyx phone will be transmitted to the recording device by a series of Telemetry Sending Units (TSU). Each TSU consists of a microprocessor and transmitter, encased in a 30" high, watertight, metal cylinder weighing 22 lbs and equipped with an antenna. A TSU will be stationed at each data collection point and will be connected to either a phonyx phone or a geophone set. The TSU will be fitted with a tripod on land and buoy in the water. This system allows the seismic signal to be transmitted by radio frequency, alleviating the need for seismic cable.

The second recording system CGG will be using is the Sercel SN 348 Telemetry System. This is a cable based telemetry system. The 348 system consists of a series of interconnected station units, seismic cables and either surface geophone sets or down hole phonyx phones. The station unit is a box 8" square and 8" tall, which digitizes the seismic signal received from the geophones or phonyx phone and transmits that signal via cable to the main recording instrument.

The majority of the project area will be situated on agricultural lands under private ownership. CGG's operations on land will consist of the use of buggy mounted drills, ATV's, pickup trucks used primarily as support vehicles and some use of helicopter for the transportation of equipment and personnel.

Operations in waterways, marsh lands and other bodies of water will be conducted mainly by boat. Either large 30' flat bottom steel work boats, aluminum skiffs or zodiacs will be used. At times a helicopter may also be used to transport equipment and personnel. All of the drilling will be accomplished by pontoon drill. For the majority of the project the drill will operate as a self powered unit. It may be necessary in some marsh areas to use an amphibious marsh vehicle to tow the drilling pontoon into place and to transport personnel and equipment.

For all water crossings either a TSU or station unit/cable combination will be placed at each data collection point. This equipment will be connected to a down hole phonyx phone or weighted geophone. The equipment will be placed by hand from available boats. In some areas an amphibious marsh vehicle may need to be used to place the recording equipment.

In some cases where a narrow water crossing is encountered and a boat is not already launched, it will be necessary to hand carry from a pickup truck on the levee a 12'-15' aluminum boat to transport the recording equipment into the water. This process should cause no alteration to the levee or stream bed.

All necessary permits will be obtained from and all operations in the water will be coordinated with the California State Department of Fish and Game. All boats and other amphibious equipment shall enter and exit the water at approved locations. Amphibious equipment use in marsh areas will be coordinated with Department of Fish and Game and subject to their approval. A Fish and Game representative shall be present during the detonation of any charge located in the water and for any other stages of the operation if deemed necessary.

STATION: 1-100-13
NOISE: ...
GEOL: ...

EIR/NOTICE MAILING LIST

W 6005-12

*Honorable John Garcamendi
Member of the Senate 5th District
California State Legislature
State Capitol, Room 4076
Sacramento, CA 95814

*Honorable Patrick Johnston
Member of the Assembly 26th District
California State Legislature
State Capitol, Room 4112
Sacramento, CA 95814

* Solano County
Board of Supervisors
Old Courthouse
Fairfield, CA 94533

NOTE: If more than one Legislator or Board of Supervisors are affected, add to list in the spaces provided on the following pages.

Hon Lloyd G. Connelly
Assemb. 6th Dist
Rm 2176

Hon. Robert Campbell
Assemb. 11th Dist.
Rm. 2163

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City News Service
304 South Broadway, Suite 520
Los Angeles, CA 90013

REGIONAL NEWSPAPERS
(For Publication)

- ① Antioch Daily Ledger
- ② Sacramento Bee
- ③ Fairfield Suisun Daily Republic
- ④ Stockton Record

Addresses on Legal Notice Mailing

Hon LEROY GREENE
Senate 6th Dist
Rm 3082

Hon. DANIEL BONTWAIGHT
Senate 7th Dist
Rm 3086

*NOTE: An asterisk indicates that a copy of the environmental document should be sent in addition to the notice.

✓ *Martha Valdes
Senate Office of Research
1100 J Street, Suite 650
Sacramento, CA 95814

✓ The California Development Bulletin
P.O. Box 715
Mariposa, CA 95338

✓ *Michael Shapiro, Senior Consultant
Senate Committee on Energy and Public
Utilities
State Capitol, Room 2035
Sacramento, CA 95814

✓ Terry Trumbull
Lawrence/Trumbull Associates
101 University Avenue, 2nd Floor
Palo Alto, CA 94301-1638

✓ *Jeffrey Arthur, Consultant
Senate Committee on Natural
Resources and Wildlife
State Capitol, Room 2031.
Sacramento, CA 95814

Applicant

✓ *Assembly Natural Resources Committee
State Capitol, Room 2136
Sacramento, CA 95814

* CGG American Services, Inc.
P.O. Box 488
Thornton, CA 95686

~~*Commander, 11th Coast Guard District(m)
Union Bank Building
400 Ocean Gate
Long Beach, CA 90802
(So. Cal. ocean related items only)~~

Center Costa County
Board of Supervisors
651 Pine St., Rm. 106
Martinez, CA 94553

✓ *Scott Brown
Land Department, Room 500
Pacific Gas & Electric Company
P.O. Box 7444
Sacramento, CA 95826

Sacramento County
Board of Supervisors
700 "H" St St 2450
SAC, CA 95814

✓ *Robert Collins
Office of Attorney General
3580 Wilshire Boulevard
Los Angeles, CA 90010

San Joaquin County
Board of Supervisors
222 E Webber Ave
Stockton, CA Rm. 701
95202

~~*Don Hoagland (Geothermal only)~~

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*The Resources Agency
1416 Ninth Street
Sacramento, CA 95814

*Office of Planning & Research (10 copies)
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, CA 95814

*U.S. Fish & Wildlife Service
Division of Ecological Services
2800 Cottage Way, Room E-1803
Sacramento, CA 95825

*U.S. Fish & Wildlife Service
24000 Avila Road
Laguna Niguel, CA 92677
Attn.: John C. Wolfe

*Mike Shoaff
P.O. Box 6854
Santa Rosa, CA 95406

*Emmet E. Wolter
The Wolter Associates
337 E. San Antonio Drive, #203
Long Beach, CA 90807

*San Diego Gas & Electric Company
925 L Street
Sacramento, CA 95814
Attn.: Jim Cassie

* _____ County
Planning Department

~~FOR LONG BEACH EIR/ND ONLY~~

~~*Environmental Protection Agency
215 Fremont Street
San Francisco, CA 94105
Attn.: EIS Review (P-5, Federal Activities
Branch)~~

AREAWIDE CLEARINGHOUSE
(Where Applicable)

* _____

ALL Parties on Distribution
List, Except STATE Agencies
(Clearinghouse will get those)

N.D # 447

Title Ref.: W6005.

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631 Howard Street, 4th Floor
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California Energy Comm.
1516 Ninth Street, Room 200
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- Charlotte Oates
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(916)324-1127
- William A. Johnson
Native American Heritage Comm.
915 Capitol Mall, Room 288
Sacramento, CA 95814
(916)322-7791
- Hans Kreutzberg
Office of Historic Preservation
P.O. Box 942896
Sacramento, CA 94296-0001
(916)322-9621
- James M. Doyle
Dept. of Parks & Recreation
P.O. Box 942896
Sacramento, CA 94296-0001
(916)324-6421
- Mike Burke
Public Utilities Comm.
505 Van Ness Avenue
San Francisco, CA 94102
(415)557-2903
- William P. Vaughn, Jr.
Public Works Board
505 Van Ness Avenue
San Francisco, CA 94102
(415)557-2903
- Mel Schwartz
Reclamation Board
1416 Ninth Street, Room 204-8
Sacramento, CA 95814
(916)445-2458
- Norris Milliken
S.F. Bay Conserv. & Dev't. Comm.
30 Van Ness Avenue, Room 2011
San Francisco, CA 94102
(415)557-3086
- Eric Maher
Calif. Waste Management Board
1020 Ninth Street, Room 300
Sacramento, CA 95814
(916)322-2674
- Nadell Gayou
Dept. of Water Resources
1416 Ninth Street, Room 215-4
Sacramento, CA 95814
(916)445-7416
- Reed Holderman
State Coastal Conservancy
1330 Broadway, Suite 1100
Oakland, CA 94612
(415)464-1015
- Jerry Haynes
Caltrans-District 1
1656 Union Street
Eureka, CA 95501
(707)445-6320
- Michelle Gallagher
Caltrans-District 2
1657 Riverside Drive
Redding, CA 96001
(916)225-3259
- Brian J. Smith
Caltrans-District 3
703 B Street
Marysville, CA 95901
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- Ed Boyle
Caltrans-District 4
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San Francisco, CA 94120
(415)557-3405
- Jerry Laumer
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(619)873-8411
- Terry L. Barrie
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- Jim Cheshire
Caltrans-District 11
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San Diego, CA 92118-5406
(619)594-2271

CALENDAR PAGE
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STATE WATER RESOURCES CONTROL BOARD

Ed Anton
State Water Resources Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95801
(916)445-9552

Dave Beringer
State Water Resources Control Board
Delta Unit
P.O. Box 2009
Sacramento, CA 95810
(916)322-9870

REGIONAL WATER QUALITY CONTROL BOARDS

Regional Water Quality Control Board
North Coast Region (1)
1000 Coddington
Santa Rosa, CA 95401
(707)620-4460

Regional Water Quality Control Board
San Francisco Bay Region (2)
1111 Jackson Street, Room 6040
Oakland, CA 94607
(415)464-1255

Regional Water Quality Control Board
Central Coast Region (3)
1102A Laurel Lane
San Luis Obispo, CA 93401
(805)549-3147

Regional Water Quality Control Board
Los Angeles Region (4)
107 South Broadway, Room 4027
Los Angeles, CA 90012-4596
(213)684-9330

Regional Water Quality Control Board
Central Valley Region (5)
3201 S Street
Sacramento, CA 95816
(916)445-0270

Regional Water Quality Control Board
Lahontan Region (6)
2092 Lake Tahoe Boulevard
South Lake Tahoe, CA 95731
(916)544-3481

Regional Water Quality Control Board
Colorado River Basin Region (7)
73-271 Highway 111, Suite 21
Palm Desert, CA 92260
(619)346-7491

Regional Water Quality Control Board
Santa Ana Region (8)
6809 Indiana Avenue, Suite 200
Riverside, CA 92506
(714)684-9370

Regional Water Quality Control Board
San Diego Region (9)
6154 Mission Gorge Road, Suite 205
San Diego, CA 92120
(619)594-5114

FISH & GAME - REGIONAL OFFICES

A. Haylor, Regional Manager
Dept. of Fish & Game-Region I
601 Locust
Redding, CA 96001
(916)225-2300

Jim Messersmith, Regional Manager
Dept. of Fish & Game-Region II
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670
(916)355-0922

B. Hunter, Regional Manager
Dept. of Fish & Game-Region-III
7320 Silverado Trail
Napa, CA 94558
(707)944-2011

G. Nokes, Regional Manager
Dept. of Fish & Game-Region-IV
1234 East Shaw Avenue
Fresno, CA 93710
(209)222-3761

F.A. Worthley, Jr., Regional Manager
Dept. of Fish & Game-Region V
245 West Broadway, Suite 350
Long Beach, CA 90802
(213)590-5113

Rolf E. Hall
Marine Resources
245 West Broadway, Suite 350
Long Beach, CA 90802
(213)590-5155

.....

OTHER

Dept. of Fish & Game
Bay Delta Fisheries Project
4061 N. Wilson Way
Stockton, CA 95205

Commanding Officer
U.S. Coast Guard
Marine Safety Office
Bldg 14, Coast Guard Island
Alameda, CA 94501

U.S. Army Corps of Engineers
211 Main St.
San Francisco, CA 94105-1905

... MTN: Calvin C. Fong
Chief, Regulatory Branch

OTHER

Solano County
Environ. MGT Dept
County Courthouse
601 Texas St.
Fairfield, CA 957

Solano County Fire WA
Crestline Annex
600 Texas St.
Fairfield, CA 94533

Sacramento County
Planning Dept
827-7th St, Rm 2
Sacramento, CA 95

Contra Costa County
Community Develop. Div
651 Pine St, 4th Flr
N.W.
Martinez, CA 9453

San Joaquin County
Planning Dept
1810 E. Hazelton Ave
Stockton, CA 9520

Antioch Development
Services Dept
P.O. Box 130
Antioch, CA 9450

Lodi Planning Comm
Call Box 3006
Lodi, CA 9524

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P.O. Box 1318
Antioch, CA 94501

Exhibit "C"

November 16, 1988

CGG LAND SEISMIC
A DIVISION OF CGG AMERICAN SERVICES, INC.
CGG Crew 0524
P.O. Box 397
Rio Vista, CA 93453

Ms. Susan Livenick
State Lands Commission
245 West Broadway, Suite 425
Long Beach, CA 90802-4471

Dear Ms. Livenick:

Subject: Geophysical Survey - Sac Delta Phase IV
File Reference W-6005.12

Contact has been made with all the local agencies involved in our current project, and a letter of approval or permit has been obtained from each. Some of the documentation will be sent direct to your office.

The following is a list of the information enclosed within.

- San Joaquin County Public Works Encroachment Permit
- San Joaquin Local Health District Permit
- Sacramento Explosives Permit and Amendment
- Sacramento County Public Works Encroachment Permit

All of the above permits are in force, with the exception of the Sacramento County Encroachment Permit. That permit has been approved, but awaits payment of the \$200 fee before it is valid.

This should fulfill your request for additional information, and complete our current permit application. Please contact me at (707) 374-6855 if there are further questions, or if any of the information sent direct to you has not reached your desk.

Sincerely,

James F. Prossick
CGG Permit Agent

JFP/foz

Enclosures

699 HAMPSHIRE ROAD
SUITE 100A
WILSON LAKE VILLAGE, CALIFORNIA

805 496-4311

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November 9, 1988

CGG LAND SEISMIC
A DIVISION OF CGG AMERICAN SERVICES, INC.
CGG Crew 0524
P.O. Box 397
Rio Vista, CA 93453

Sacramento County Sheriff's Dept.
711 G Street
Sacramento, CA 95814

Attention: Sgt. R. Howell #12

Gentlemen:

Subject: Explosives Permit No. 105-88

CGG would like to amend its current permit to include additional geophysical work within Sacramento County. A map of the proposed work is included within.

This project will involve the drilling of 50' shot holes, with a 5 lbs. charge placed in each hole. We plan to begin work on or about November 30th, 1988.

If there are any further questions regarding this project, please contact me at (707) 374-6855.

Sincerely,

James F. Prossick
CGG Permit Agent

JFP/foz

Enclosure

699 HAMPSHIRE ROAD
SUITE 00A
SACRAMENTO VILLAGE, CALIFORNIA
95811

805 496 4311

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SACRAMENTO COUNTY SHERIFF'S DEPARTMENT
711 G Street, Sacramento, California

EXPLOSIVES PERMIT

Permit No. 105-88
New
Renewal

Fingerprint No. _____
Application Date 4-3-85
Permit Date 9-28-88
(Min. 7 day waiting period)

1. Permittee:

Name FROSSICK, James Frank
(Last) (First) (Middle)
Address P.O. Box 488, Thorton, Ca. 95686 Phone No. 209-794-2382
Street City
Representing: C.G.G. Land Seismic Phone No. 209-794-2382
Address 699 Hampshire Road, Suite 100A, Westlake, Ca. 91361
Street City State Zip Code
Driver Lic. # C3164453 State Calif. Expiration Date 1990
Social Security # 062-54-2528 Date of Birth 5-22-58

2. Transport Vehicle:

Make Ford Model P/U Yr. 1984 License No. 2J31801 State Ca.
Travel Route & Safe Stopping Places Approved

3. Activity:

Manufacture Store Receive and/or Transport Use Sell or Dispose
Restrictions Store, transport, and use in seismic operations.

4. Material:

Type of Explosives Vibro-Gel Quantity 100+ lbs
Location of storage Off Lambert Rd., near I-5
Type of storage Approved Class A
How and/or where used Seismic exploration within Sacramento County

I, the undersigned, certify that I understand and will abide by all Federal, State and local laws, ordinances, rules or orders to perform those acts noted herein. I also understand that all unused inventory covered by the permit on or before the expiration date will be disposed of in the following manner:

- (1) Returned to source
- (2) Totally destroyed
- (3) Turned over to the authority issuing the permit or reapply for a new permit.

XPLU 10.00
IUIL 10.00
CASH 20.00
CHNG 10.00

X Owen D. Gray for Jim Frossick
Signature 09/30/88

3526AUU1

APPROVAL

This permit is granted on 9-28-88 to perform those activities noted above, and will expire 9-28-89 or until suspended or revoked.
(1 yr. max. from date of issue)

The permittee is limited to perform these activities as indicated times or during the tenure of the permit, subject to the conditions noted below. This permit is not transferable.

Sgt. R. HOWELL

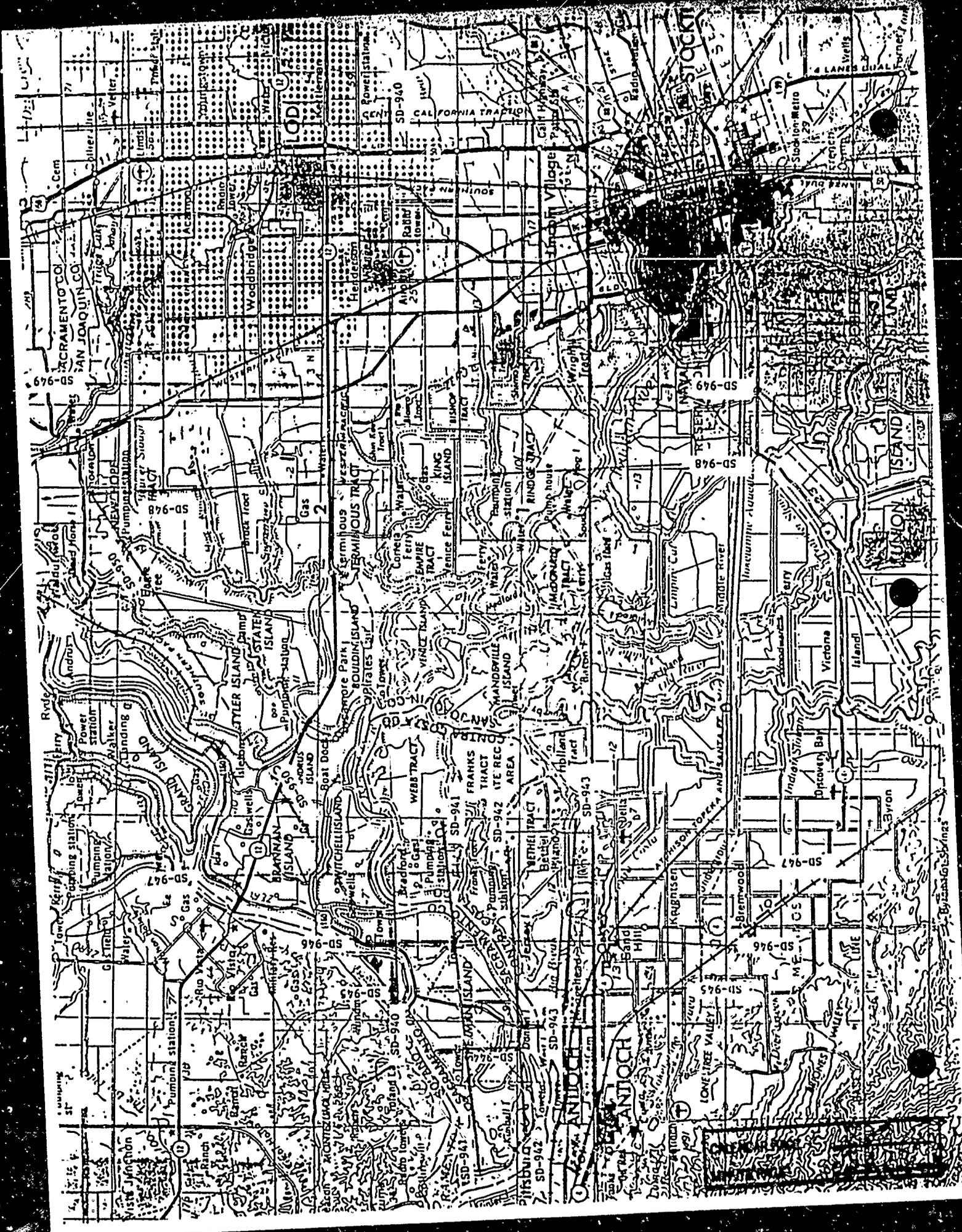
ISSUING AUTHORITY 416-440-8153

Distribution:

- (1) Permittee - White
- (2) ID Copy - Green
- (3) State Bureau of CII, Sacramento - Yellow
- (4) Chief fire authority where explosives to be stored

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APPLICATION FOR PERMIT
SAN JOAQUIN LOCAL HEALTH DISTRICT
 1601 E. HAZELTON AVE., STOCKTON, CA
 Telephone (209) 466-6781
PERMIT EXPIRES 1 YEAR FROM DATE ISSUED
 (Complete in Triplicate)

Application is hereby made to the San Joaquin Local Health District for a permit to construct and/or install the work herein described. This application is made in compliance with San Joaquin County Ordinance No. 549 for sewage or No. 1862 for well/pump and the Rules and Regulations of the San Joaquin Local Health District.

Job Address Various San Joaquin Delta - See Map City _____ Lot Size _____ PM _____
 Owner's Name CGG American Services Inc. Phone (707) 374-8855

Contractor SAME Address P.O. 397 Rio Vista License No. _____ Phone (707) 374-885

TYPE OF WELL/PUMP: NEW WELL WELL REPLACEMENT DESTRUCTION
 PUMP INSTALLATION SYSTEM REPAIR OTHER Seismic test hole
 DISTANCE TO NEAREST: SEPTIC TANK _____ SEWER LINES _____ DISPOSAL FLD. _____ PROP. LINE _____
 FOUNDATION _____ AGRICULTURE WELL _____ OTHER WELL _____ PITS/SUMPS _____

INTENDED USE Industrial Domestic/Private Public Irrigation
 TYPE OF WELL Open Bottom Gravel Pack Other
 PROBLEM AREA Manteca Tracy Delta Eastern
 CONSTRUCTION SPECIFICATIONS
 Dia. of Well Excavation 5' / 50' Dia. of Well Casing _____
 Type of Casing _____ Specification Slurry/Coarse
 Depth of Grout Seal 5' / 50' Type of Grout Bentonite BEK
 Surface Seal Installed by _____ State Work Done ATTACHMENT
 Repair Work Done Type of Pump _____ H.P. _____
 Well Destruction Well Diameter 2" / 4" Sealing Material (top 50') _____
 Depth 5' / 50' Filler Material (Below 50') _____

TYPE OF SEPTIC WORK: NEW INSTALLATION REPAIR/ADDITION DESTRUCTION (No septic system permitted if public sewer is available within 200 feet.)

Installation will serve: Residence _____ Commercial _____ Other _____
 Number of living units: _____ Number of bedrooms _____ Water table depth _____
 Character of soil to a depth of 3 feet: _____ Capacity _____ No. Compartments _____
 SEPTIC TANK Type/Mfg _____ Method of Disposal _____
 PKG. TREATMENT PLT. Distance to nearest: Well _____ Foundation _____ Property Line _____

LEACHING LINE No. & Length of lines _____ Total length/size _____
 FILTER BED Distance to nearest: Well _____ Foundation _____ Property Line _____

SEEPAGE PITS Depth _____ Size _____ Number _____
 SUMPS Distance to nearest: Well _____ Foundation _____ Property Line _____
 DISPOSAL PONDS

I hereby certify that I have prepared this application and that the work will be done in accordance with San Joaquin county ordinances, state laws, and rules and regulations of the San Joaquin Local Health District.
 Home owner or licensed agent's signature certifies the following: "I certify that in the performance of the work for which this permit is issued, I shall not employ any person in such manner as to become subject to workman's compensation laws of California." Contractor's hiring or sub-contracting signature certifies the following: "I certify that in the performance of the work for which this permit is issued, I shall employ persons subject to workman's compensation laws of California."

The applicant must call for all required inspections. Complete drawing on reverse side.
 Signed X James F. Prossick Title: PERMIT AGENT Date: 11/10/88
 FOR DEPARTMENT USE ONLY

Application Accepted by Don M. B... Date 11/14/88 Area 01
 Pit or Grout Inspection by _____ Date _____ Final Inspection by _____ Date _____

Additional Comments: 2000 389-3621 350 Manteca 823-7100 01/18/87 835-6385
 Stk 466-6781
 Applicant - Return all copies to: Environmental Health Permit/Services 1601 E. Hazelton Ave., P.O. Box 2009, Stk., CA 95201

FEL INFO	AMOUNT DUE	AMOUNT REMITTED	CK # CASH	RECEIVED BY	DATE	CALENDAR PAGE	PERMIT NO.
	<u>4500</u>	<u>02500</u>	<u>1000</u>	<u>11</u>	<u>11</u>	<u>302</u>	<u>233</u> <u>3424</u>

SAC DELTA PHASE IV

CGG agrees to follow all San Joaquin County Health Department drilling and plugging procedures. Those procedures are as follows.

5' holes east of I-5 will be plugged with gravel/natural fill.
5' holes west of I-5 will be plugged with coarse bentonite.
All 50' holes will be plugged using the slurry method.
All water used in drilling will be potable "drinking" water.

Full-time inspection will not be required if these procedures are followed.

10' hole or mini hole pattern will be drilled every 165' along the indicated line locations.

CGG hopes to begin operations on September 30, 1988. Any questions call (714) 374-6855 or by mail - P.O. 397 Vista, CA 94571.

KEY

10' holes in pink
5' Hole pattern (9-5' holes) in blue.

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CGG LAND SEISMIC
A DIVISION OF
CGG AMERICAN SERVICES, INC.

JAMES F. PROSSICK
Permit Agent

(714) 374-6855



SACRAMENTO COUNTY DEPARTMENT OF PUBLIC WORKS
 827 - 7th ST., SACRAMENTO, CALIFORNIA
 PHONE 440-6544

PERMIT NO. 88-672
 MAINTAINED ROAD MAP NO. 003
 COORD. NO. _____

U.S.A. TICKET NO. _____

APPLICATION FOR ENCROACHMENT PERMIT

1. Application is made for permission to excavate, construct and/or otherwise encroach on county right of way by performing the work described below on: GEOPHYSICAL CABLE CROSSING

VARIOUS - SEE ATTACHED MAP Between _____
(Name of Road) (Cross Roads or Address)
LOCATIONS

2. Estimated
 (a) Excavations: _____
Width Depth Length Type of surface to be cut
 (b) Conduit: _____
(Type PVC, Metal, etc.) Diameter (Conveying water gas, etc.)
 (c) Other: _____
(Sidewalk Sign, Driveway, etc.) Description

- Attach Plans to applications in quadruplicate
- Applicant must check with all Utility Companies serving the area covered by this permit, for location of existing underground pipes, conduits or cables
- Before starting work, the Permittee shall notify Sacramento County Construction Inspection, Phone (916) 366-2201, 24 hours in advance of the date work is to begin.
- Attention is directed to the General Provisions and Specific Conditions printed on the reverse side of this permit and to any Special Provisions attached hereto and made a part hereof.

In consideration of the granting of this application it is agreed by the applicant that the County of Sacramento and any officer or employee thereof shall be saved harmless by the applicant from any liability or responsibility for any accident, loss or damage to persons or property happening or occurring as the proximate result of any of the work undertaken under the terms of this application and the permit or permits which may be granted in response thereto, and that all of said liabilities are hereby assumed by the applicant. It is further agreed that if any part of this installation interferes with the future use of the highway it must be removed or relocated, as designated by the Director of Public Works, at the expense of the applicant or their successor in interest.

Applicant: CGG American Services, Inc.
(Print Business Name)

Address: P.O. Box 397 Phone: (707) 374-6855
RIO VISTA CA (Zip) 94571

FOR USE BY UTILITY COMPANIES
 District: _____ Division: _____
 Engineer: _____ Job No.: _____

Signature: James F. Prussick

SPACE FOR SKETCH OR COMMENTS:

Assessor Parcel No. _____

SEE ATTACHED

DEPARTMENTAL REVIEW

County Water	<u>11/15/88</u>	Highways	<u>11-15-88</u>
Water Resources	<u>11/15/88</u>	Water Quality	<u>N/A</u>
Deposit: \$		Code: 2980	055003
Permit Fee: \$	<u>200.00</u>	Code: 2900-9258	OSH 0002900
Validation:			

CONDITION

- BOND ON FILE
- _____
- _____
- _____

Application approved subject to payment of fees, CONDITIONS OF WORK, and is revocable at any time.

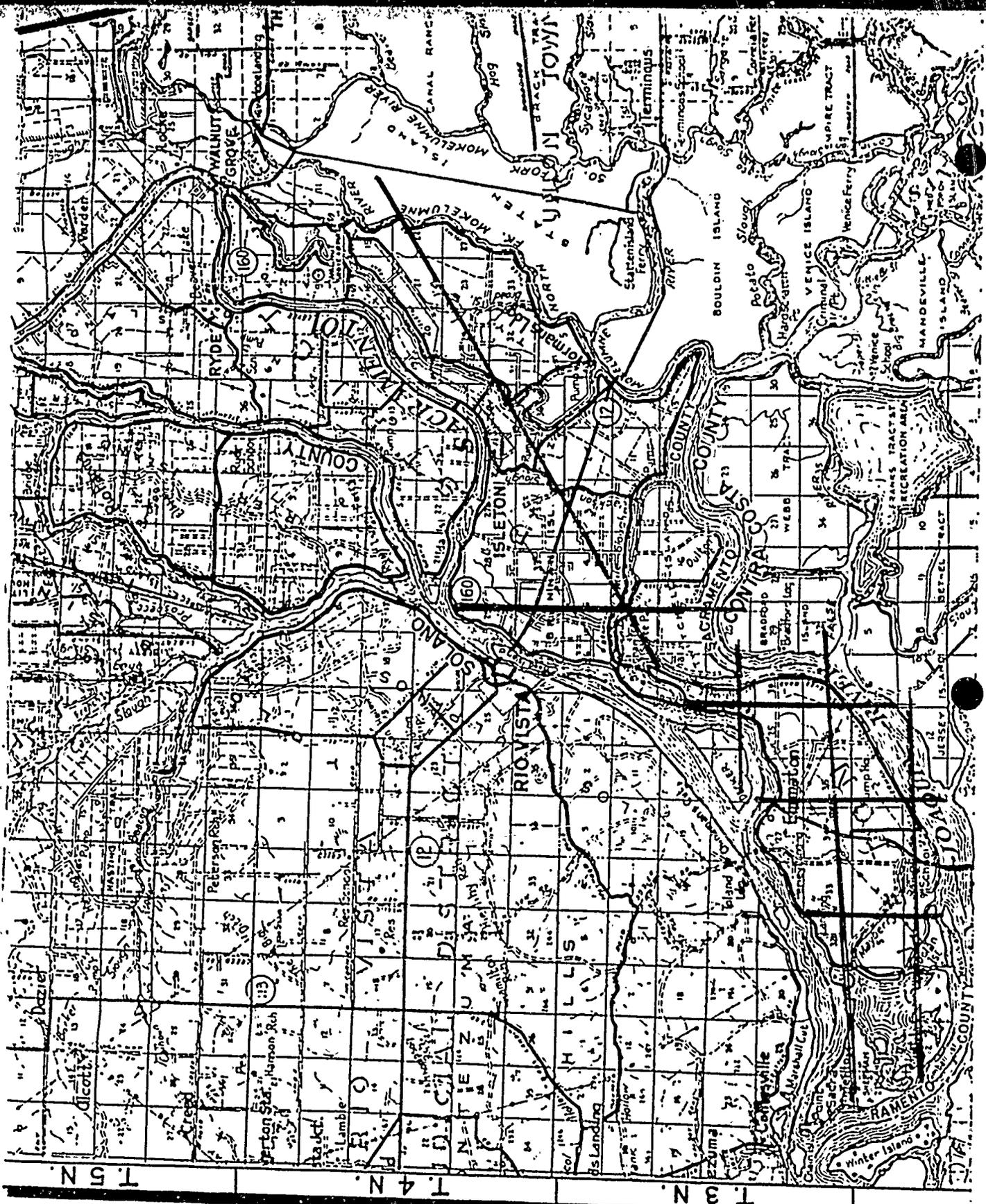
This permit is nontransferable and EXPIRES ONE YEAR from date issued.

D. M. FRALEIGH, Director of Public Works

By [Signature] Date: _____, 19 _____

Inspector Approval

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AGREEMENT TO DO GEOPHYSICAL SURVEY WORK ON
ROAD RIGHTS OF WAY OF SAN JOAQUIN COUNTY

THIS AGREEMENT, made and entered into by and between the
COUNTY OF SAN JOAQUIN, a political subdivision of the State of
California, hereinafter referred to as "COUNTY", and CGG American
Services Inc., hereinafter referred to as "PERMITTEE".

I. PERMIT REQUIRED: No person shall conduct any survey for
the purpose of locating and studying underground deposits
of ores, minerals, oil, gas, or water on any street, high-
way, road, or other public place except upon application to
and permit granted by the Director or his designee.

II. INSPECTION FEES: Upon written authorization by the
Director, or his designee, the work of performing the
geophysical survey within the County right of way will be
permitted only under the condition that PERMITTEE agrees to
pay COUNTY on demand the cost of performing the necessary
field inspection of the work including incidental
expenses.

III. LIABILITY OF PERMITTEE:

A. The PERMITTEE shall abide by all laws, regulations and
rules, either Federal, State, Regional, County or
District.

B. All work shall be conducted at the risk and expense of,
and all damages, costs, or expense suffered or
incurred, thereby, will be paid by PERMITTEE, and
PERMITTEE will indemnify, defend and save COUNTY free
and harmless of and from any and all liability to, or

1 claims of others which may result from or in any way
2 arise out of, or in connection with project operations.

3 C. If it is determined by the Department of Public Works
4 that said roads or underground facilities in the said
5 roads are damaged as a result of the operations of
6 PERMITTEE, PERMITTEE shall pay to COUNTY, on demand,
7 the cost of all repairs to all damaged facilities
8 located within the road right of way. In case of
9 emergency, COUNTY has the right to repair all damaged
10 facilities immediately at the expense of PERMITTEE.

11 D. The PERMITTEE shall furnish a certificate to COUNTY
12 indicating that PERMITTEE has, and is maintaining,
13 liability insurance, insuring against legal liability
14 for bodily injuries and death, and for damages to
15 property in the amount of \$1,000,000.00. An additional
16 insured endorsement to PERMITTEE'S liability insurance
17 policy naming COUNTY, its officers and employees as
18 additional insureds, shall be furnished COUNTY. The
19 above insurance shall be of the broad form coverage
20 type.

21 IV. PROPERTY OWNERS PERMISSION: Permission shall be obtained
22 by PERMITTEE from the owners of fee title in the form of
23 signed letters of consent from abutting property owners on
24 each side of all roads, or segments thereof, or a notarized
25 affidavit from the PERMITTEE attesting that permission has
26 been obtained by PERMITTEE from abutting property owners on
27 each side of all roads, or segments thereof, authorizing

1 such geophysical operations, filed by the PERMITTEE with
2 the Director or his designee, prior to the issuance of the
3 permit.

4 V. SHOT METHOD: PERMITTEE shall abide to the following
5 conditions when shot method is employed:

6 A. Prior to issuance of permit from Director or his
7 designee PERMITTEE must first obtain clearance from the
8 Sheriff's Department for the use and storage of
9 explosives.

10 B. Prior to issuance of permit from Director or his
11 PERMITTEE must first obtain clearance from the San
12 Joaquin Local Health District for the drilling of shot
13 holes.

14 C. All holes shall be refilled with clay or grout and the
15 existing facilities shall be repaired with material
16 equal to or better in quality and quantity.

17 This Agreement shall be effective for not more than one (1)
18 year after the date hereof. It may be revoked without notice
19 upon violation of any of its conditions.

20 The undersigned has read and understands and does hereby
21 agree to abide by the conditions as stated in this Agreement.

22 /////
23 /////
24 /////
25 /////
26 /////
27 /////

1 IN WITNESS WHEREOF, the parties have executed this Agreement
2 the day and year first written above.

3
4 Recommended for Approval:
5
6 *Manuel Lopez*
7 MANUEL LOPEZ
8 Deputy Director

9 COUNTY OF SAN JOAQUIN, a
10 political subdivision of
11 the State of California

12 *Henry M. Hirata* Date: 10/27/88
13 HENRY M. HIRATA
14 Director of Public Works

15 "COUNTY"
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E ME-PS-AGS

OGG American Services Inc.

(Company name)
505 Community Lane

(Mailing address)
Woodland, CA. 95695

(City, State, Zip Code)

(916) 662-8652

(Telephone number)
James F. Prossick Date: 10/11/88

(Signature of Representative)
James F. Prossick
Permit Supervisor Pacific Coast Division

(Print name and title of
Representative)

"PERMITTEE"



JOHN ZUNINO
Sheriff-Coroner

OFFICE OF
SHERIFF-CORONER

COUNTY OF SAN JOAQUIN

COURTHOUSE
STOCKTON, CALIFORNIA
TELEPHONE 209-944-2181

November 18, 1988.

Mrs. Susan Livenick
State Land Commission
245 W. Broadway, Suite #425
Long Beach, California 90802-4471

Dear Mrs. Livenick:

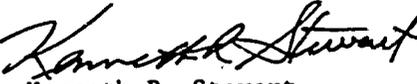
This letter is to advise you that CGG Land Seismic, Inc. may be issued an explosive permit to do seismic exploration work in our county if the proper applications are filed and all other requirements are met.

If you have any questions, please feel free to contact this office.

Assuring you of our continued cooperation in this and all matters of mutual concern.

Sincerely,

JOHN ZUNINO
Sheriff-Coroner


Kenneth R. Stewart
Undersheriff

KS:DH

C: CGG Land Seismic, Inc.

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Contra
Costa
County

Public Works Department

255 Glacier Drive
Martinez, CA 94553-4897

November 14, 1988

J. Michael Walford
Public Works Director

Milton F. Kubcek
Deputy Director

Maurice E. Mitchell
Deputy Director

Susan Livenick
State Land Commission
245 West Broadway, Suite 425
Longbeach, CA 90802-4471

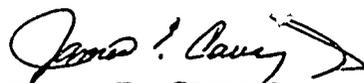
ES-Encroachment Permit, Seismic Work

Dear Ms. Livenick:

We are writing at the request of CGG American Services, Inc. in regard to our policy for issuance of encroachment permits for seismic work in Contra Costa County road right of way, in the unincorporated areas. We routinely issue encroachment permits for the temporary installation of cables along and across County maintained roads. A permit will be issued to CGG American Services, Inc. when they apply.

If you have any questions, please contact Ed King at 646-4470, extension 348.

Very truly yours,


James E. Causey
Assistant Public Works Director
Engineering Services Division

JEC/EK/dr
pr:seismic.t11

cc: James Prossick CGG American Services, Inc.
Ed King, Permit Engineer

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DEPARTMENT OF EMERGENCY SERVICES

FRANK J. SCHOBER, JR., ASSISTANT DIRECTOR
600 TEXAS STREET
FAIRFIELD, CA 94533

24 HOUR PHONE 707.425-5470
BUSINESS PHONE 707 429 6506



EMERGENCY SERVICES DIVISION
EMERGENCY MEDICAL SERVICES
COMMUNICATIONS DIVISION
FIRE WARDEN'S OFFICE

November 14, 1988

Ms. Susan Livenick
State Lands Commission
245 West Broadway, Suite 425
Long Beach, CA 90802-4471

Dear Ms. Livenick,

CGG has notified our office of its intent to obtain an Explosives Permit for its upcoming geophysical survey.

Once the request is filed, it will take about one week to process the permit. We are familiar with geophysical operations and have no problem in issuing a permit, as long as all the necessary requirements are followed.

We have had a good working relationship with CGG in the past and expect the same in the future.

If there are any further questions, please contact me at (707) 429-6506.

Sincerely,

Frank J. Schober, Jr.
Frank J. Schober
Assistant Director

FJS/mo

cc:James Prossick



October 26, 1988

CGG LAND SEISMIC
A DIVISION OF CGG AMERICAN SERVICES INC

CGG Crew 0524
P.O. Box 397
Rio Vista, CA 93453
(707) 374-6855

Ms. Pat Perkins
Department of Fish and Game
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

Dear Ms. Perkins:

Subject: Negative Declaration CGG Sac Delta Phase IV.

Thank you for taking the time to meet with me this morning. The points we discussed and agreed to are summarized below.

- * There shall be no geophysical testing within the boundaries of the Sherman Island Waterfowl Management Area, during the months of October through March. A map has been enclosed, illustrating the routes of CGG's seismic lines in the refuge.
- * As stated in the Negative Declaration, CGG's operations in the water and marsh areas shall be coordinated with DFG and a DFG representative shall be present during any detonations in the water.
- * Dow Chemical has given clearance for CGG's activities on Lower Sherman Island. A copy of that letter is included.
- * All holes located in the water or marsh areas and loaded with a charge shall be drilled to a depth of 100 feet.
- * Presently, there are no plans to cross DFG's properties located on Brack Tract. A map has been provided, detailing our seismic line location and the DFG property boundaries. Any intrusion into those areas is subject to written consent from your office.

The above guidelines will be followed by CGG throughout the course of operations on Sac Delta Phase IV. These points should answer the concerns raised in DFG's October 6th, memo and those mentioned in the meeting today.

9 HAMPSHIRE ROAD
SITE 100A
ESTLAKE VILLAGE, CALIFORNIA
361

5496-4311

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Ms. Pat Perkins

-2-

October 26, 1988

If you agree, please respond in writing to CGG's Rio Vista Office. It will be necessary to send a copy of your letter to State Lands' representative, Dan Cohen. A quick response would make it possible for CGG to be included in the November meeting of the State Lands Commission.

I appreciate your help in resolving these issues and moving CGG's permit procedure forward. If any additional information is required, contact me at (707) 374-6855.

Sincerely,

James F. Prossick
CGG Permit Agent

JFP/foz

PC: Dan Cohen

Enclosures: 1. October 6th DFG memo
2. Map of Sherman Island Waterfowl Refuge
3. Dow Chemical Letter
4. Map of seismic line location on Brack Tract

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Memorandum

Date : October 6, 1988

1. Projects Coordinator
Resources Agency
2. Mr. Dan Cohen
State Lands Commission
1807 13th Street
Sacramento, CA 95814

From : Department of Fish and Game

Subject: Negative Declaration, CGG Sacramento Delta Phase 4 Geophysical Survey, SCH 88092603

The California Department of Fish and Game (DFG) has reviewed the State Lands Commission's Proposed Negative Declaration for the continuation of CGG's geophysical survey for natural gas deposits. The project is located in the Sacramento-San Joaquin Delta and involves 140 miles of test lines.

The DFG would agree to a declaration of "no significant effects on the environment" providing the following mitigation measures are incorporated:

1. The project shall be rescheduled to exclude the peak wintering period for waterfowl. No testing shall be conducted during the period of October through March, in order to avoid adverse impacts to wintering waterfowl.
2. Operation of tests in the water or in marsh areas will be coordinated with the DFG.
3. A DFG representative shall be present during detonation of charges in the water.
4. That CGG has clearance from the DFG that any charges, particularly on Lower Sycamore Island, will not threaten their two underground gas pipelines, since damage to these gas lines could cause additional impacts to fish and wildlife resources.

If the project sponsor will not agree to the incorporation of the above mitigation measures as conditions of the Negative Declaration, then we recommend that a full Draft Environmental Impact Report be prepared.

For further information and assistance, please contact James D. Messersmith, Regional Manager, Region 2, 1701 Nimbus Road, Suite A, Rancho Cordova, CA 95670, (916) 355-0922.

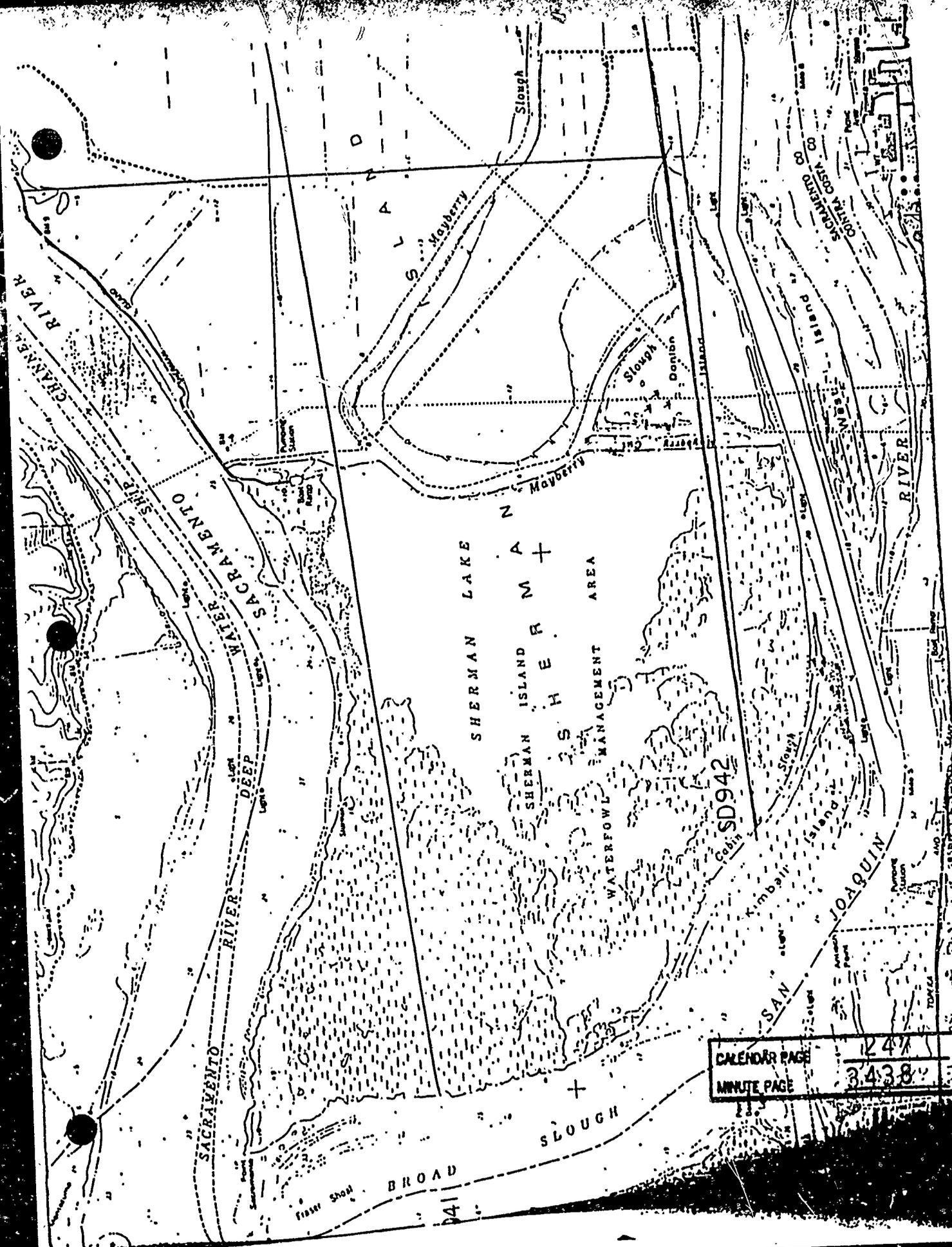
Pete Bontadelli
Director

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SD942

BROAD

SLOUGH

SACRAMENTO RIVER

SAN JOAQUIN RIVER

SHERMAN ISLAND SHEPHERD WATERFOWL MANAGEMENT AREA

S. Mayberry Slough

Doolan Slough

Kimball Island



DOW CHEMICAL

DOW CHEMICAL U.S.A.
AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY

August 25, 1988

TERRENCE C. PLUMB
SENIOR ENERGY SPECIALIST

Western Division
P.O. Box 1398
Pittsburg, CA 94565
415-232-5196

CGG Land Seismic
Attn: James F. Prossick
505 Community Lane
Woodland, California

Re: Sherman Island Waterfowl Management Area - Seismic Survey

Dear Mr. Prossick:

As requested in your letter of July 4, 1988, Dow Chemical - Petroleum Operations has reviewed the project details and conditionally approve the seismic survey planned for the first Quarter 1989.

From the submitted seismic survey location plat, it appears that seismic line SD 941 will cross Dow Chemical's 8" natural gas pipeline located on the west end of Sherman Island. We request that CGG locate their shot holes a minimum of 100' from the pipeline for safety and notify Dow of initiating field operations to preview shot hole location and/or assist in locating the Dow pipeline. Enclosed is an index map (scale: 1" = 1 mile) and pipeline alignment prints (4-104, 105 and 106) to assist in shot hole location. Also, Dow Chemical has a 6" natural gas pipeline located on the east end of Sherman Island and need to be notified if future surveys involve this portion of Sherman Island or Jersey Island to the south.

Please keep me advised of your efforts on the project and timing on field activity. We will be available to assist CGG in locating Dow's pipeline to insure the operation of the pipeline and safety of personnel. Telephone: (415) 432-5196

Very truly yours,

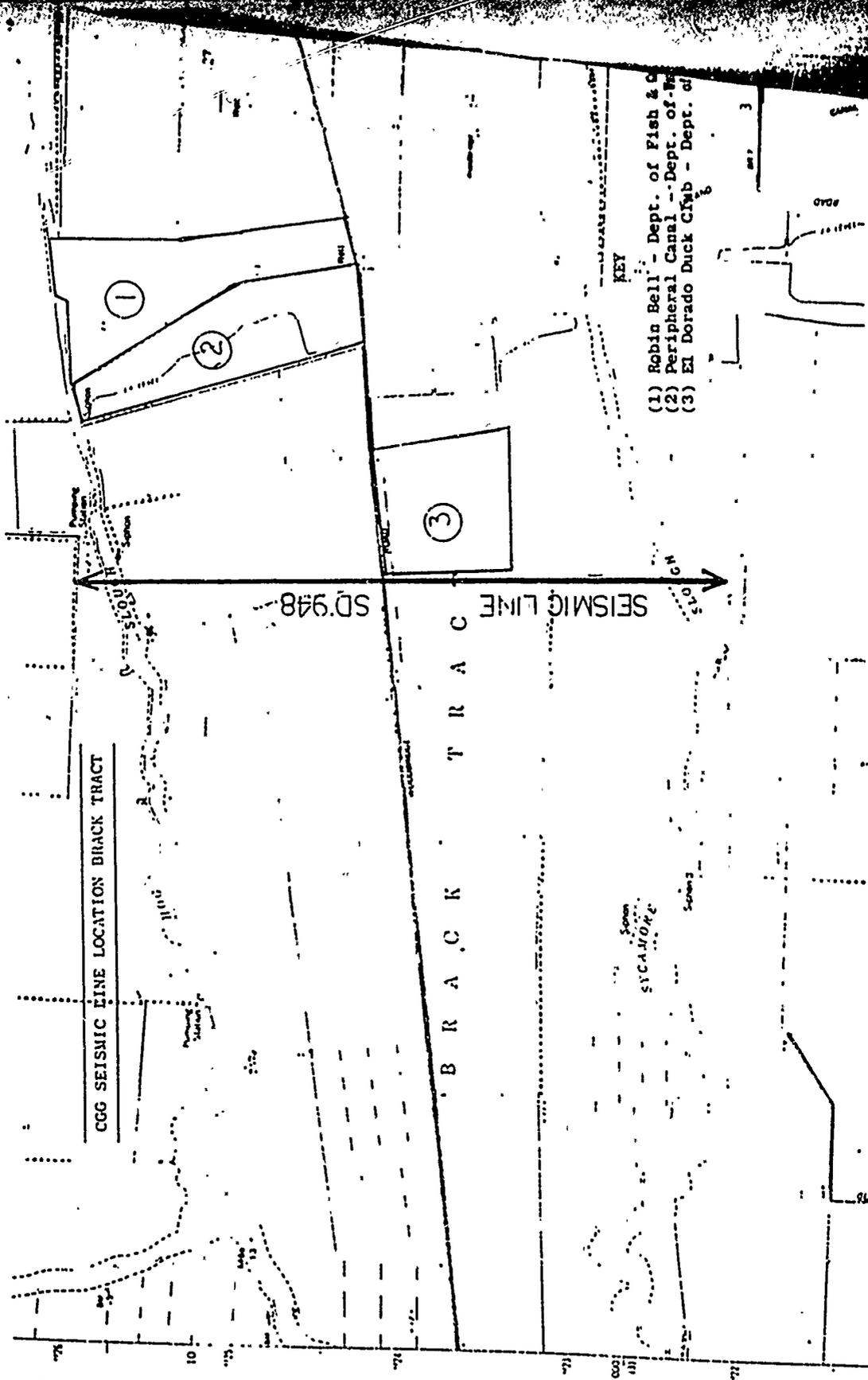

Terrence C. Plumb
Petroleum Operations

cc: D. Beauchamp
Dept. of Fish & Game

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AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY

Quality
Performance
More At Dow



- KEY
- (1) Robin Bell - Dept. of Fish & Game
 - (2) Peripheral Canal - Dept. of Water Resources
 - (3) El Dorado Duck Club - Dept. of Fish & Game

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(916) 355-7020

NOV 1 1988

Mr. James Prossick
CGG Crew 0524
P.O. Box 397
Rio Vista, CA 93453

Dear Mr. Prossick:

I received your October 26, 1988 letter and in it you addressed all the concerns we discussed at our October 26 meeting.

The mitigation measures requested by DFG in responding to the Negative Declaration (SCH 88092603) have been complied with in your October 26 letter.

Please contact me if problems arise involving DFG lands.

Sincerely,

COPY Original signed by
Patricia Perkins

Patricia Perkins
Wildlife Management Supervisor

bc: D. Cohen, State Lands Commission
B. Sanford, R2
Capt. Prosser, R2

PP:kc

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