# ENVIRONMENTAL REPORT (EXPLORATION)

FOR

PROPOSED EXPLORATORY WELL P-0215-2

SANTA BARBARA CHANNEL

OFFSHORE SOUTHERN CALIFORNIA

FEDERAL OCS BLOCK 215

TO SUPERVISOR,

THE UNITED STATES GEOLOGICAL SURVEY

FROM

CHEVRON U.S.A.

OPERATOR

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# EXPLORATION ENVIRONMENT REPORT

## INTRODUCTION

Chevron U.S.A. Inc. proposes to drill an exploratory well in the Santa Barbara Channel region of the Pacific Ocean, about 8 miles southwest of the City of Ventura and about 6 miles west of the Montalvo coast (Figure 1). The proposed well will be located in Federal OCS lease P-0215. This lease lies in the northeasterly part of the Santa Clara Unit (Figure 2).

This project will be of temporary duration. The active drilling phase of this proposed well will probably last about 45 to 60 days, after which evaluation and abandonment procedures will probably last another 15 to 25 days. It will take about 6 days to move in and then out of this location. This results in a total of about 60 to 90 days for this project.

The submission of this Exploration Environmental Report, which will be accompanied, or followed by, an Exploration Plan for this proposed well, is intended to fulfill the requirements of Section 250.34-3 of CFR Title 30, Part 250, as promulgated January 27, 1978.

This report is designed to respond to the specific requirements defined in Section 250.34-3(a)(i) through (xi) inclusive of the above cited regulations.

Information available in recent applicable environmental studies and environmental impact statements has been referenced extensively in this report. Data has been summarized from other reports by state agencies and independent authors. Information applying specifically to this project has been furnished by the professional staff of Chevron U.S.A. Inc.

The general environment in the area of the project, including information on the oceanography, submarine geology, sensitive and hazardous areas, potential project impacts, alternatives and mitigations, and many other aspects, is amply discussed in a number of the references listed in the bibliography. Considering the extensive nature of these prior studies, and in order to avoid redundancy, data which is directly applicable to this project is often simply referenced in this report.

The impacts of the proposed project on the environment, as analyzed in the following presentation, are concluded to be negligible in magnitude and temporary in nature. If the proposed exploratory project results in the confirmation of a commercially developable accumulation of oil or gas, or both, then a plan for the development of the resource will be required. In this event, another Environmental Report for the development phase also will be required per 30 CFR 250.34-3(b).

## ENVIRONMENTAL CONDITIONS IN THE AREA OF PROPOSED EXPLORATION

The following summary of environmental conditions in the area of the proposed exploratory well P-0215-2 has been prepared to accompany the Exploration Plan as it is submitted with requests for a permit to drill this well. Each of the following subheadings has been numbered to conform with Title 30, Part 250.34-3 of OCS Rules and Regulations published in the Federal Register, Volume 43, No. 19 - Friday, January 27, 1978.

This Environmental Report (Exploration) includes, as required, available information that is accurate and applicable to the geographic area. The following information is from "the most recent Environmental Impact Statement(s) for the area" as well as other generally available and current publications.

### 1.0 Description of the Affected Ocean Area

The area which will be affected by the proposed exploratory well (P-0215-2) is located in the southeast corner of the Santa Barbara Channel (Figure 1). The federal tract involved is part of the Santa Clara Unit which includes 8 tracts in the east end of the Santa Barbara Channel, extending from 6 to 12 miles west from the Montalvo coastline. Location of the Santa Clara unit boundary, Parcel P-0215 and the proposed well location are shown on Figure 2 (see enclosures).

### 1.1 Bathymetry

Water depth at the proposed drill site is approximately 95 ft. The ocean floor in this area has a moderate overall slope to the west-southwest of about

18 ft. per mile, resulting in a slope ratio of 1:300. Depths and ocean floor conditions have been reported by NOAA (Ref. 1) and have been mapped and analyzed by Chevron's professional staff utilizing waterborne surveys performed by General Oceanographics, Inc. (Ref. 2).

The detailed configuration of the ocean bottom in this vicinity is that of a very gently sloping slightly undulating surface. The very low relief irregularities of the sea floor observable on the accompanying map (Fig. 3), which is contoured on a 5-foot interval, have probably developed as the result of uneven distribution of slow, discontinuous sedimentation. They are not believed to relate significantly to the siting of proposed well P-0215-2. Further discussion of the sea floor features is contained below in Sec. 1.4.

## 1.2 Ocean Currents and Waves

It is anticipated that the proposed well might be drilled at various times throughout the year and could, therefore, experience the seasonal range of current variations.

The surface currents in this area of the Santa Barbara Channel are not strong, ranging in velocity from 0.3 to 0.6 knots in summer to 0.5 to 0.7 knots in winter. Current directions are variable with the widest variations occurring during the summer. Winter directions tend to be westerly and summer directions easterly and southeasterly (Ref. 3 & 4). Subsurface Channel currents are primarily related to tides and sea floor topography. They usually have a lower speed than surface currents and differ most widely from surface currents in both speed and direction during the summer months. Kolpack (Ref. 5) suggests that the northeasterly flowing subsurface current in the easterly Channel region (i.e., the California undercurrent) is deflected to a westerly course by the

central Channel seafloor ridge. This deflection may commence near, or just south of, the vicinity of the proposed exploratory well. Intersea Research Corporation (Ref. 6) found that the subsurface currents had the same general direction as the surface currents during their studies for the proposed Santa Clara Unit pipeline, just west of the proposed location of P-0215-2.

Surface wave conditions in the eastern portion of the Santa Barbara Channel are quite mild because of the few storms passing through the area, and because of the protection from northwesterly winds afforded by the Santa Ynez Mountains. Average significant wave heights are less than 6 ft. Severe storm waves (100 yr. max.) have a 95% probability of not exceeding about 10.5 meters (34.4 ft.) in height. Wave direction is generally from west to northwest because of the prevailing winds from this direction (Ref. 3, pps. II -199-207).

## 1.3 Water Quality

The physical and chemical characteristics of the waters in the Santa Barbara Channel vary with the currents, discharges from various onshore sources, and the interactions between these and other processes. A great deal of information is available from the Final EIS for the Development of Oil and Gas in the Santa Barbara Channel OCS, FES/76-13 (Ref. 3, pp. II-214 through II-226) and the Draft EIS Proposed 1979 OCS Sale No. 48 (Ref. 4, pp. 87 through 119).

The temperature in the Southern California Bight fluctuates annually between about 10°C and 18°C. During the summer the waters stratify with a thermocline at a 20- to 30-meter depth. These temperature changes are due to the atmospheric temperature, advection of water from nearby areas, cold water upwellings, and the mixing of warm surface water with cold deeper waters (Ref. 3, P. II-214).

The salinity of the area waters varies between about 33.3 o/oo (parts per thousand) and 34.0 o/oo. These fluctuations are caused by precipitation and evaporation at the surface, by freshwater land runoff, advection, and by upwellings (Ref. 3, p. II-216).

The density of the waters of the area varies with both the temperature and the salinity of the water, ranging from 1.02347 to 1.02590 gms/cm$^3$ (Ref. 5, p.57). The variations in the Southern California Bight divides the water into a shallow surface, wind-mixed layer of 10- to 50-meter thickness and a thick, deep bottom layer of greater density.

The hydrogen ion conentration (pH) of the area from Point Conception to the Mexican Border ranges between 7.5 to a maximum of 8.6 with a mean of 8.1 (Ref. 3, p.II-216).

Dissolved oxygen is a product of photosynthesis by marine flora, free exchange with the overlying atmosphere, and turbulent mixing by winds, tides, and currents. The surface is nearly always saturated, sometimes as high as 140 percent of saturation. Dissolved oxygen decreases with depth and at 60 meters is about 4 mg/l, which is about 50 percent of saturation. Below sill depth (that depth below which the ocean floor constitutes a closed topographic basin) there may not be adequate oxygen for marine life. Hydrogen sulfide production by anaerobic bacteria in the top sediment layers will further decrease free dissolved oxygen to levels as low as 0.1 mg/l (Ref. 3, p.II-218).

Various inorganic nutrients such as nitrogen, phosphorus, and silica are supplied by upwellings, advection and land discharges (rivers and industrial and domestic effluents). These nutrients are depleted by uptake by phytoplankton.

Nitrate concentrations vary from 0.01 mg/l to 0.16 mg/l at the surface, 0.20 mg/l to 0.40 mg/l at 90-m depth. Phosphate varies between about 0.40 mg/l and 0.90 mg/l; silicate trace to 2.85/mg/l (Ref. 3, p.II -218).

Trace metals such as copper, cobalt, zinc, iron, manganese, boron, molybdenum, and selenium are physiologically essential to biological productivity. However, these same elements can be toxic in concentrated and/or transformed conditions. It is difficult to ascertain general concentrations for trace metals in sea water due to the limits of detection of analytical equipment and uncertainty as to the physical/chemical state of the constituent. Factors such as variations with depth, nearness to shore, upwellings, storm runoff, or extensive alterations in plankton populations all create variation ranges (Ref. 3, pps. II-220-223).

Along the California coast, the mean visual transparency of the water varies from less than 6 meters to more than 15 meters; lower values occur close to shore. The attenuation of light is measured by an extinction coefficient which relates the light remaining at a depth to the original incident light. Extinction coefficients offshore California are in the range of 0.08 to 0.40 per meter. This coefficient is dependent upon the quantity and size of suspended particles in the water, and to the kind and quantity of dissolved organic substance, all which increase nearer the coast (Ref. 3, p. II-224).

According to the Central Coast Region, California Regional Water Quality Control Board (Ref. 7), the chief water quality problem involves the discharge to state waters of municipal and industrial waste waters, most through short outfalls with minimum dilution and dispersion. There are eleven municipal dischargers and fourteen separate industrial dischargers in the Santa Barbara Channel. All separate industrial dischargers are related to oil production. However, the total constituent mass emission rates contributed by the

industrial discharges for total suspended solids and oil and grease are about two percent of that contributed by the municipal discharges, and chemical oxygen demand is about seven percent of that of municipal discharges. All discharges in the OCS must adhere to "appropriate standards in effect at the time." This could be OCS Orders 7 and 8 and/or regulations generated by the Federal Water Pollution Control Act Amendments of 1972 and through the NPDES permit process.

## 1.4 Submarine Geology

The proposed drilling site for well P-0215-2 lies in the central portion of the east end of the Santa Barbara Channel (Figure 1). Descriptions of the environment and geologic framework within the channel have been published by the Bureau of Land Management (Ref. 4), and U.S. Geological Survey (Ref. 3 & 8). These reports should also be referred to for a detailed description of the stratigraphic section present in this area.

As shown in Figure 1, the Santa Barbara Channel is located within a geomorphic province called the Transverse Ranges. The diverse geologic terrain in this province has predominant topographic and structural trends that have a nearly east-west orientation. In the immediate area of prospect to be drilled by the proposed well the same topographic and subsurface structural trend exists (Figure 4).

### 1.41 Shallow Drilling Hazards

The bottom sediments at the proposed drill site consist of a thin layer (i.e., 10 to 20 feet) of unconsolidated muds mixed with silt and clay.

These mudline sediments are immediately underlain by sediments of similar lithology that are stiffer and better consolidated. At the P-0215-2 site the mudline sediments rest on Holocene silts and clays that are over 50 feet in thickness.

There is no evidence of any shallow faulting in the vicinity of the proposed drill site (Ref. 2).

The shallow sediments contain a minor amount of gas. The presence of this gas acts as an acoustical barrier that affects some of the records from shallow high resolution geophysical surveys. This gas condition has not proven to be a hazard during the drilling of 18 shallow core holes and 7 deep exploratory wells on the eight leases that make up the Santa Clara Unit (i.e., P-0204, P-0205, P-0208, P-0209, P-0210, P-0215, P-0216, & P-0217).

1.42 Deep Drilling Hazards

The usual deep drilling hazards encountered while penetrating hydrocarbon bearing formations are expected during the drilling of the proposed well. As part of the blowout and oil spill prevention plan, Chevron's drilling program will contain a casing program that will be in accordance with OCS Order No. 2 - Drilling Procedures.

The deepest hole drilled in the area went to a depth of 12,854 feet. Like the other six wells drilled in the immediate area, above normal formation pressures were encountered between approximately 4500 feet and 7500 feet. The

above normal pressures represented an increase in pressure gradient from .45 psi/ft. to .65 psi/ft. These pressures were controlled without incident by setting casing above the formations with increased pressure and drilling with higher weight drilling fluids. Below 7500 feet normal hydrostatic pressures of .44 psi/ft. were encountered.

1.43 Seismicity

Earthquake activity in the Santa Barbara Channel has been adequately covered by the Bureau of Land Management in their 1978 report (Ref. 4)., the U.S. Geological Survey's 1969 and 1976 Reports (Refs. 8 & 3), and the earthquake reports of 1973 & 1976 by the Seismological Laboratory at the California Institute of Technology (Ref. 9 & 10).

There are no known active faults in the area of the proposed drilling sites. The closest active fault is the Oak Ridge fault, an east-west trending thrust fault whose near surface trace is over 3 miles north of the P-0215-2 drill site (Figure 4). This is also the dominant potentially active fault within range of Chevron's operation which would establish the design criteria for future development. All other active faults are too far removed to create levels of ground shaking at the proposed drill sites which could exceed those from a magnitude 6.5 Richter scale earthquake at 10 Km depth on the Oak Ridge fault. It is estimated from Schnable and Seed (Ref. 11) that such an earthquake could cause ground accelerations of about .25 g at the drill sites.

1.5 Weather Patterns

The California coastline east of the proposed test well has a Mediterranean Climate which is tropical and dry in the summer. The area lies on the southeastern edge of the Pacific High Pressure Area. As the Pacific High moves northward in the summer, the winds are primarily from the northwest. This creates warm, dry summers because the high forces the low pressure areas eastward at more northerly latitudes. As the high retreats to the south in winter, the low pressure areas also advance south yielding mild, wet winters. Mean daily temperatures over the Santa Barbara Channel range from the low 50's in winter to the high 60's in the late summer. Extremes of20°F and 115°F have been recorded. Annual rainfall averages at Santa Barbara about 17.0"; Oxnard - 14.6". The rainfall occurs mainly in the winter, November through April. The dominance of the northwesterly winds also decreases in winter and wind patterns become more diffuse. Maximum velocities are encountered from the northwest in the spring and may reach 60-65 knots, but velocities of six hours duration which exceed 50 knots have a 100-year frequency. Severe storms, i.e., thunderstorms, are infrequent and rare. Funnel clouds and hurricanes are virtually unheard of (Ref. 3 & 4).

Wind patterns in the vicinity of the proposed projects (refer Ref. 3, Vol. 1, pps. II-166 and 167) suggest two predominant wind directions. From the locale of this project the wind blows partly shoreward toward the Montalvo coast and partly southeasterly into the ocean area of the Santa Monica Basin. During early morning hours of the winter months the wind blows from the

Montalvo shoreline toward the project area and out to sea. The eastern end of the Channel is one of the more sheltered regions, and winds there are weaker and more variable than further to the west. Average daytime wind velocities range from 8 to 11 mph, at night dropping to 3-5 mph.

Storm (wind generated) waves in the eastern part of the Channel are of lesser magnitude than those in the western portion. In the vicinity of the proposed well Riffenburgh's studies (Ref. 3) indicate a 95% probability that the maximum 100 year wave will not exceed 36 ft. in height and 790 feet in length.

Fog is a common phenomenon in the area. This is due to light, anticyclonic winds in the warm months. The occurrence of fog is greatest and most extensive in the summer. From April through October, visibility is reduced to 2 miles or less an average of 20% of the time. From November through March, the same reduction occurs only 6% of the time (Ref. 3, pps. II-179,180).

## 1.6 Air Quality

The onshore areas of Santa Barbara and Ventura counties are within the South Central Coast Air Basin. Ambient air quality data for the Santa Barbara Channel region can be obtained from the California Air Resources Board (CARB), the Santa Barbara Air Pollution Control District (SBAPCD), and the Ventura Air Pollution Control District (VAPCD). A number of reports are available giving specific data (Refs. 3, 12, & 13). Data is available for total oxidant, Carbon monoxide, nitrogen oxides, hydrocarbons, and suspended particulates. 1976 is the latest year for which reasonably complete information is available.

Several studies have noted that there is a lack of air quality data in the offshore area. The nearest stations to the proposed OCS projects are located in the city of Ventura and at Pt. Mugu. These are operated by the Ventura County Air Pollution Control District. Unfortunately, these station locations are probably too far from the proposed drill site to be used directly for air quality determinations.

However, prevailing winds in the area of the proposed drill site are easterly and south-easterly, sea to land and seaward, respectively. This should inhibit the transport of air pollutants created onshore to the proposed drill site. There are very few emission sources of any consequence in the western portion of the channel that can impact air quality at the drill site. Thus, it is concluded that air quality at the drill site and surrounding region is good, and that Federal Standards are not exceeded.

## 2.0 Environmentally Sensitive or Potentially Hazardous Areas, Alternatives and Mitigating Measures

In this section it is required that those environmentally sensitive or potentially hazardous areas which might be affected by the proposed exploratory activities be described. A description of possible alternatives to the proposed project and measures to be taken to preserve or protect these areas also is required. Included in such areas are those of cultural, biological, archeological, and geological significance, as well as areas designated as being of particular concern by affected states, in accordance with the Coastal Zone Management Act.

## 2.1 Environmentally Sensitive Areas

Included in this discussion of environmentally sensitive areas is an inventory of such areas in the general region of the Santa Barbara Channel as enumerated below. These are also shown in map form (Figure 5). Because the proposed project does not lie within or near any such area no detailed discussion is contained herein, but references for some are indicated. Other reports (Ref. 12, Chapters 6 and 16) have suggested other values to be included within the "sensitive" categories and the discussion of alternatives and mitigations following would also pertain to these.

In the general region of the Santa Barbara Channel the following officially protected areas presently exist:

1. State Oil and Gas Sanctuary (No. 1, Fig. 5), (Ref. 12, p. 339).

2. San Miguel, Santa Rosa, Santa Cruz and Anacapa Islands (Nos. 2 and 3, Fig. 5), and Mugu Lagoon to Latigo Point (No. 4, Fig. 5). These are designated as Areas of Special Biological Significance by the State Water Resources Control Board (See: Ref. 3, Vol. 2, p. 600; Ref. 12, p. 338; and Ref. 16).

3. Channel Islands National Monument (No. 5, Fig. 5), of which only Anacapa Island lies in the general region of this project (Ref. 12, p. 336).

The proposed projects should have little or no effect on biological conditions in the immediate drill site areas. Biological conditions further removed from the proposed drill sites could only be effected by a major oil spill (i.e., over 1000 barrels). Sections 3.1 and 3.2 should be referred to for the oil spill preventive measures to be employed by Chevron during the drilling. There are no known rare or endangered species of flora or fauna residing in the proposed project area. Available evidence indicates that total exposure of the flora and fauna, which occupies the project area, to the discharge of drilling fluids and drill cuttings will result in no adverse effects to measurable numbers of these organisms (Ref. 15 and 22).

Regarding the California Gray Whale (Eschrichtius robustus) and the Pacific Right Whale (Eubalaena glacialis), contact was made with Drs. William C. Cummings and Raymond Gilmore, scientists at the Natural History Museum in San Diego. Dr. Cummings was formally Senior Scientist at the Naval Ocean Systems Center in San Diego, and has spent the last 15 years doing bioacoustic and marine biological research related to whales. Dr. Gilmore was recommended as one of the top authorities in the nation on the California gray whale.

Both Drs. Cummings and Gilmore indicated that the internal navigational systems of whales are highly sophisticated and that it would be very unlikely for such whales to come into contact with any objects in the ocean. They stated that whales are very adept at avoiding even "whale-watching" boats that attempt to follow migrating whales as closely as possible.

The Gray Whale is very accustomed to both natural and man-made objects and noises, and frequently travels in the shipping lanes where noise levels are at their highest. As to the Pacific Right Whale, it was stated that the last sighting of such a whale was off the coast of California near San Diego

in 1955, and that one sighting every 20 years would be about normal for this species.

While Drs. Cummings and Gilmore indicated that there was no definitive study which provides information on the effect, if any, on migratory patterns of the types of noises which will be created by Chevron's proposed activities, they both stated their opinion that the proposed exploratory drilling does not pose any threat to the whales or their migratory patterns.

Commercial and sport fishing will not be materially affected by the presence of a drilling vessel in the project area. The operations contemplated by Chevron are of small dimensions, having a short duration (about 40 days), and not involving any construction, large amount of noise or the use of any freighters or other large vessels, other than the drilling vessel itself. Since the project area is located near the center of the eastern end of the Santa Barbara Channel, over $6\frac{1}{2}$ miles from the nearest shoreline, it receives little or no sport fishing or recreational use.

Anacapa Islands, located approximately 8 miles south of the most southerly well in this prospect area, will not be adversely affected by the proposed drilling. Oil spill trajectory studies (Ref. 12), current pattern studies (Ref. 3, p. II 188 to 194) and prevailing wind patterns (Ref. 3, p. II - 162) indicate that there is very little likelihood that an oil spill will move toward the islands. The nearest landfall, approximately $6\frac{1}{2}$ miles east of the easterly most proposed well, is the continental coastline of Southern California. An oil spill at any of the proposed drill sites, if not contained, is expected to impact this coastline and not the channel islands.

The impact of any such spill even on the shoreline of Ventura county is not expected to be lasting, but will have some short duration adverse effects (Refs., 34, 35, and 36).

4. Federal Ecological Reserve and Buffer Zone (No. 6, Fig. 5). This area lies about 15 miles northwest of the proposed project (Ref. 3, p. ii-11).

The Santa Barbara Channel region also is known to contain sites of historic and prehistoric values. These involve archeological finds and other evidence of early cultures. The proposed exploratory well and ensuing development, should any occur, is located in water about 100 feet deep. Therefore, the potential for recovery of archeological or cultural remains must be evaluated. However, no such sites or potential cultural remains have been identified in our site studies of the area of the proposed well (Ref. 14), or by the U.S.G.S. Supervisor pursuant to NTL-77-3, effective March 1, 1977 (U.S.G.S. requirement). Consequently, archeological and cultural considerations are not believed to be relevant to the conduct of this project.

## 2.2 Hazardous Areas

A number of geologic events and circumstances could occur or prevail in the Santa Barbara Channel Region with an adverse environmental impact on petroleum exploration or development operations. These include earthquakes, sea-floor fault ruptures, submarine landslides, etc. Careful examination of the sea-floor by water-borne geophysical surveys at the proposed site indicates that there are no significant submarine hazards present (Ref. 2). The earthquake risk during the drilling of this exploratory well is minimal because the well will be drilled from a floating vessel and the time period of exposure to earthquake hazard is very small. For further discussion of the geologic and seismic conditions at the wellsite see Sections 1.4 and 1.43.

A technical hazard exists relating to down-hole drilling conditions in that control of a well may be lost as the result of improper drilling practices, encountering unexpected abnormally high pressures, etc. Drilling of the proposed well will be done strictly in compliance with all U.S.G.S. regulations and orders. Prior drilling of the Chevron well No. P-0215-1, approximately 6500 ft. west, and the Mobil VB-1 CH about 5000 ft. east, of the currently proposed site, provides valuable experience to assist in proper programming for the proposed exploratory well. No significant hazards were encountered in these earlier wells, which penetrated essentially the same sequence of rocks anticipated in the currently proposed test. For further discussion of this aspect of the project refer to Section 1.4.

## 2.3 Cultural and Archeological

The proposed exploratory drilling project described herein is located in water depths of about 100 feet. The date of issuance of the P-0215 lease leaves some doubt as to whether archeological and/or cultural surveys are required for this operation.

The foregoing notwithstanding, Chevron U.S.A. Inc. contracted for the performance of detailed waterborne geophysical surveys to be run over tract P-0215. These surveys were completed in August, 1978. They were performed and analyzed by General Oceanographics, Inc. (Ref. 2) and by a certified marine archeologist from Scientific Resource Surveys, Inc. (Ref. 14). Tools run included the magnetometer, side-scan sonar, mini-sparker, super-sparker,

sub-bottom profiler and fathometer. Most of the instruments were run simultaneously with the exception of some local re-surveying performed to improve data quality. The grid-spacing was generally 1000 ft. by 1000 ft. except in certain shallower water areas where a 500 ft. by 1000 ft. grid was employed.

As a consequence of these surveys, and analyses thereof, no significant obstructions were noted on the sea floor in the area of the proposed exploratory well (Fig. 3), and no archeological or cultural finds were observed to be present.

## 2.4 Alternatives

There are two alternatives to the proposed action which may be considered. The first of these is to drill the proposed well at another location. However, there are no potential environmental hazards which might be mitigated or reduced by so doing. Furthermore, the constraints of the geologic interpretation already require that a deviated (directed) well be drilled in order to effectively test all the potential from the presently proposed site. To move the P-0215-2 location elsewhere could result in an ineffective test which would fail to adequately evaluate the resource potential. Because it would be a complete waste to drill a well which did not adequately evaluate all the resource potential this alternative is not considered to be a viable one.

The second alternative is to not proceed with exploratory drilling (i.e., no project). In view of the very urgent need for additional supplies of

domestic oil and gas, the lack of which poses a serious threat to our national security and economic stability, this alternative seems unworthy of consideration. Furthermore, under existing law and the terms of the lease, the Secretary of the Department of the Interior is obliged to respond to a legitimate application to conduct operations on a valid lease providing all terms and conditions are met. The proposed exploratory well appears to be an environmentally acceptable project and, therefore, no project is not considered a viable alternative.

Sections 3.0 and 9.0 of this report describe the mitigation and preventive measures to be employed to insure environmental protection during the conduct of this project.

The greatest measure of environmental protection results from careful site selection, thorough pre-drilling hazard evaluation, and the use of proper drilling techniques. In all these categories the proposed project has been designed and planned to meet the highest professional standards and to strictly conform to every current U.S.G.S. regulation and order.

## 3.0 Oil or Waste Material Spill Prevention, Clean-Up and Control Counter Measures Plan

This section contains a description of procedures, personnel, and equipment for preventing, reporting, and cleaning up spills of oil or waste materials, including information on response time, capacity and location of equipment.

## 3.1 Prevention

Prevention of oil spills during the proposed exploratory drilling operation will be maximized by following the prescribed requirements in OCS Order No. 2 for the Pacific Region. Specifically, the order establishes requirements for casing; blowout prevention equipment (BOPE); installation and testing and training of personnel which insure that uncontrolled flow from the well will be prevented. To enhance this requirement, Chevron will utilize equipment that reflects the best state-of-the-art as described in the Exploration Plan for this lease. All other activities related to the exploratory drilling work at all times will be conducted in an orderly fashion, to best prevent an oil spill incident from occurring (Ref. 16).

To prevent pollution to the ocean waters from harmful quantities of waste materials, Chevron will be operating under the NPDES Permit (CA0110117) issued by the EPA to Global Marine for the drill ship Glomar Conception.

## 3.2 Control and Clean-Up

In the event that a spill does occur, including sheens on the water, procedures for reporting and response are described in Chevron's Oil Spill and Emergency Contingency Plan for Santa Barbara Channel OCS Leases which has been previously submitted to the U.S.G.S. as part of the plan of Development for the Santa Clara Unit. This plan is also applicable to tract P-0215.

All Chevron and contract personnel directly involved in the proposed exploratory drilling will be trained in boom deployment and clean-up operations. Therefore, response to spills will be immediate.

An oil sheen on the ocean surface will call for immediate response. Clean up of the oil sheen or even larger spills will take place in an orderly fashion. Supervision of the clean up will be handled by the Contract Foreman or Company drilling representative, using trained personnel from the drilling vessel crew and the on-site containment equipment and absorbent material listed in the oil spill containment and equipment list (Appendix C). Generally, small spills occurring on the deck can be cleaned up with available absorbent goods before they reach the open water. If an open water spill occurs, that is of five (5) barrels or less of hydrocarbons, the crew will deploy absorbent booms and pads to clean up the spill. The clean-up steps involved in spills exceeding five (5) barrels of hydrocarbons are as follows:

1. Alert the local spill cooperative immediately. For the Santa Barbara Channel area this will be Clean Seas, Inc. Next, the appropriate cooperative and/or contractor will be called to bring their clean up equipment if it becomes apparent that the "on board" equipment can not handle the spill. Mr. Waage, General Manager of Clean Seas estimated that this equipment can reach the proposed well sites within 7 hours.

2. Assess wind and current direction to determine the possible path of the spilled hydrocarbons.

3. Deploy the containment boom stored on the vessel and surround the spill.

4. Use skimmer stored on board the vessel to recover oil retained by the boom.

5. Utilize the spill cooperative (Clean Seas) equipment as needed to effect rapid and complete clean up of the spill.

6. Use absorbent goods to remove final traces of hydrocarbons.

Chevron will activate the Major Oil Spill Contingency Plan whenever a major hydrocarbon spill occurs (i.e., a major spill is considered to be over 1000 barrels or a continuous discharge for several days that will exceed 1000 barrels). In this event, Chevron will utilize all feasible equipment and manpower resources to effect a rapid clean up.

## 4.0 Onshore Support and Storage Facilities

This section discusses location, size and number of onshore support and storage facilities and related land requirements, rights-of-way and easements which could result from or be required by approval of the proposed exploration plan. This includes, where possible, a time table regarding the acquisition of lands and the construction or expansion of any facilities.

Onshore services will originate from the Carpinteria, Ventura and Port Hueneme areas. Because the support services and storage facilities required for this project are already in existence at these locations, no increase in their size or complexity will occur. Also, because the project uses a temporary, self-propelled vessel, acquisition of lands, rights-of-way, and easements is not anticipated.

## 5.0 Personnel Requirements of Offshore and Transportation Activities

This section discusses the number and type of people expected to be employed in support of offshore transportation activities including, where possible, the approximate number of new employees and families likely to move into the affected coastal area.

At this time it is anticipated that a drilling vessel, the Glomar Conception, will drill the proposed exploratory well. A crew boat will be employed to transport working personnel and contracted services to and from the drilling vessel. Materials and supplies will be transported by a larger supply boat. A helicopter service will be contracted for medical emergencies and other situations as they arise. Local vendors furnishing various materials and offering services will also be employed in support of this exploratory activity.

Population growth in the affected coastal areas will be temporary and minimal. Most employees directly associated with the drilling vessel are transient. their homes and families are located outside the affected coastal area. The work schedule of these employees (usually 7 days on and 7 days off) is such that their employer transports them between job and home. The categories of people who <u>are</u> likely to reside in the affected coastal area include current Chevron employees and employees of local suppliers of materials or services. The need to hire additional employees to support this operation is not anticipated.

About 140 persons are expected to be employed during the proposed exploratory operations: drilling vessel (110 total but 80 on board at any one time); supply boat with a crew of 6; crew boat with a crew of 2; Chevron personnel (6 total, 2 on board at any one time); and 18 miscellaneous service company personnel (each on short periods of service).

## 6.0 Travel Routes Between Offshore and Onshore Facilities and Associated Time Frames

This section discusses the most likely travel routes for boat and aircraft traffic between offshore and onshore facilities, an estimate of frequency with which such routes will be traversed, and the probable onshore locations of terminals.

A contracted crew boat will transport personnel to the well site from the pier at Carpinteria. The crew boat probably will not cross the shipping lanes enroute. The current plans call for about 15 trips per month using this service.

Supplies taken to the drilling vessel will originate from facilities at Port Hueneme. The supply boat will probably not utilize the shipping lanes because the shortest direct route would keep the boat north of, and clear of, both lanes. On the return trip, the supply boat will carry any wastes from the drilling vessel which require onshore disposal. About 25 trips per month from Port Hueneme are anticipated.

Helicopter service to the drilling vessel is expected to originate from the Ventura Marina (Rotoraides). Helicopter service will operate as required (emergencies and special situations) with an estimated 5 trips per month as needed by Chevron U.S.A. An estimated 15 trips per month by USGS inspection personnel are also anticipated.

## 7.0 Solid and Liquid Wastes and Gaseous Emissions

The various discharges to the environment from the drilling vessel will be divided into 2 categories: solid and liquid wastes and gaseous pollutants. The solid and liquid wastes will be treated and discharged according to the NPDES permit. Besides the exhaust and combustion products from power generation engines, the only other gaseous emissions will be from the flaring of encountered natural gas.

## 7.1 Solid and Liquid Wastes

Solid and liquid wastes will be treated and discharged to the environment in accordance with the issued NPDES permit. The alternative to offshore discharge is barging the wastes ashore and trucking them to appropriate disposal facilities.

The environmental impact of onshore disposal of solid and liquid wastes will be mainly related to air pollution. A task force of the Western Oil and Gas Association recently estimated the air emissions involved in disposing of

6000 barrels of cleaned muds and cuttings from one 10,000 ft. well. Barges making 50 mile round-trips would generate a total of 340 lbs. of hydrocarbons, 1620 lbs of $NO_x$, and 7200 lbs. of CO. Trucks taking the wastes 70 miles round-trip would emit a total of 12.0 lbs. of particulates, 25.9 lbs. of $SO_2$, 266 lbs. of CO, 42.6 lbs. of hydrocarbons and 193 lbs. of $NO_x$. The air quality in Santa Barbara County has been declared as non-attainment for oxidants and particulates.

Wastes from the drilling vessel will consist of the following:

(i) Excess water-based drilling mud

(ii) Drilled hole cuttings

(iii) Excess wet cement

(iv) Sanitary wastes

(v) Kitchen, shower and washing machine wastes

(vi) Biodegradable and trash, garbage wastes

(vii) Deck drainage and washdown water

(viii) Engine room drainage

(ix) Engine cooling water (non-contact)

(x) Water generated from subsurface formation tests

(xi) Brine from potable water maker

It is estimated that approximately 55,000 gallons of excess drilling mud will be disposed of during the drilling of the proposed well. A typical drilling mud will be used in the proposed exploratory well. This will contain

fresh water, montmorillonite clays, barium sulfate, and additives such as caustic, organic polymers, and lignite derivatives. These additives are not highly toxic in the concentrations used. When discharged to the ocean, the mud disperses readily and the additives are diluted to undetectable levels a short distance away (Ref. 15, 18, 22, 26 & 27). If the drilling mud has become contaminated with oil from a subsurface formation it will not be discharged into the ocean but will be transported ashore and disposed of in an approved dump site.

It is estimated that 6500 cubic feet of cuttings will be generated during the drilling of the proposed well. It is expected that none of the cuttings will be contaminated with sufficient oil to be a pollution problem in ocean disposal. They will contain only those constituents contained in the drilling mud. Any cuttings which might inadvertently contain entrained oil will be transported ashore to be disposed of in an approved dump site.

It is anticipated that approximately 800 cubic feet of excess mud-contaminated cement will be disposed of to the ocean, in accordance with the NPDES Permit, during the drilling of the proposed well. Cement, like drilling fluids, contains no highly toxic substances. It disperses readily in ocean water and becomes undetectable within a very short distance from the point of discharge.

For a current reference to aspects of the preceding paragraphs refer to the Ecomar, Inc. and Shell Oil Co. study at Tanner Banks (Ref. 15).

Sanitary wastes will be processed in an aeration-type sewage plant approved by the U.S. Coast Guard for marine service. The effluent will be treated with chlorine in accordance with conditions set out in the NPDES Permit. The estimated discharge is 5000 gallons per day.

The kitchen, shower, and washing machine wastes are basically non-toxic, containing only food, soap, and biodegradable detergents and cleaning agents. These wastes are estimated to amount to 40 gals. per day per man, resulting in a total of 2800 gals. per day for a 70 man crew.

Trash and garbage (paper container, wiping materials, etc.) will be placed in suitable portable containers which will be transported ashore for disposal in an approved dump site. An estimated 110 lbs per day of this waste will be generated by a crew of 70 men.

The drilling vessel is designed to contain all deck drainage and wash-down water which will be processed in a suitable oil-water separator prior to ocean disposal. The quality of this effluent is controlled by conditions set out in the NPDES permit. It is estimated that about 1,000 gallons per day will be generated in this manner. Both sea water and fresh water will be present in this discharge.

It is estimated that engine room drainage will range between 30 and 50 gallons per day. Normally this water will contain minimal quantities of lubricating oils. Excess oil contamination will be disposed of onshore.

Engine cooling water (non-contact) discharge will have served to cool engine water jackets and as such will not contact any pollutants. Temperature increases will be minimal ($2^{\circ}$ - $4^{\circ}$F) at the design circulating rate of 2,000 gallons per minute 2,880,000 gpd.

The maximum amount of waste water generated from subsurface formation tests is estimated at 15,000 gallons for the entire operation. Any oily water derived from these tests will be transported ashore for suitable disposal in an approved dump site or processed in the deck drain oil-water separator prior to disposal of the waste water in the ocean.

As a result of distilling sea water as a source of potable and domestic water, approximately 14,000 gpd of concentrated brine is produced as a by-product. This brine is non-toxic and will result in no pollution upon ocean discharge.

7.2 Gaseous Emissions

Gaseous emissions associated with this project are primarily exhaust and combustion products. The emissions will occur during the period of time it takes to drill and abandon the proposed well (estimated at 60 to 90 days). The specific emission sources include:

1. Generators used to supply power for the drilling operations.
2. Supply and crewboat engines and helicopters.
3. Drill ship movement to and from the proposed site.
4. Natural gas flaring.

In the course of evaluating the proposed well we anticipate flaring about 1500 MCF of gas during drill stem tests. The emissions from this type of operation are generally considered to be low and because of the temporary nature of the project, are not considered significant.

Following is a summary of the estimated quantities of gaseous emissions resulting from the proposed exploratory drilling operation. Units are in pounds/hour unless otherwise indicated (Ref. 33)

| | CO | $NO_x$ | $SO_2$ | Unburned Hydrocarbons | Average Operating Time (Total Time, Hours) |
|---|---|---|---|---|---|
| Prelim, site prep. | 14.3 | 6.6 | 4.4 | 6.3 | 54 |
| Drill ship movement | 7.0 | 32.4 | 2.2 | 3.1 | 18 |
| Drilling Operations* | 25.3 | 117.6 | 7.9 | 11.1 | 1680 |
| Support vessels | | | | | |
| supply boats | 46.7 | 215.0 | 14.3 | 20.5 | 190 |
| crew boats | 4.8 | 22.0 | 1.5 | 2.1 | 100 |
| Helicopter | 14.0 | 1.4 | 0.4 | 1.3 | 35 |
| Natural Gas | | | | | |
| Flaring | 480.0 | neg. | neg. | 33.0 | - |

*Represents average. Actual hourly rates will vary depending upon the activity taking place.

8.0 Estimate of Significant Demand for Major Supplies and Services, Etc.

This section discusses the approximate amount of any significant demand for major supplies, equipment, goods, services, water, aggregate, energy or other resources within the affected Coastal area.

This drilling operation will not place any demands on the resources within the affected area other than those which the area has been experiencing with past and present exploration work. The following demands for supplies and equipment required for the actual drilling work are estimated to be:

I. Approximate resources for the drilling of the proposed well.

A. 430,000 pounds oilfield casing.

B. 3,000 cubic feet cement (neat).

C. 13,950 cubic feet mud (barite, bentonite and miscellaneous mud additives).

D. 25 oil well rock bits.

II. Resources for Crew Servicing Drilling Vessel

A. Food to prepare three meals per day for 100 persons.

B. Soap and laundry detergent (100 lbs. detergent, 20-30 gals. bleach).

C. Linen supplies for 100 persons.

D. Miscellaneous items to maintain vessel.

E. 10 tons sand (for sandblasting), 500 gallons paint.

In addition to the above, the following services will be required during the proposed drilling operation: well logging, perforating, well testing, drilling fluids engineering, mud logging and oilwell cementing. The planned drilling vessel has the capability to distill water for drilling and crew requirements.

## 9.0 Assessment of Impact

This section discusses the impacts on the offshore and onshore environments expected to occur as a result of implementation of the proposed exploratory plan.

These impacts are expressed in terms of magnitude and duration of the proposed operation with special emphasis upon the identification and evaluation of unavoidable and/or irreversible impacts on the environment.

## 9.1 Offshore Impacts

The only negative impacts on the offshore environment which are expected to occur as a result of drilling the proposed exploratory wells are minor, transitory, local effects on air and water quality in the Channel offshore region. The discharge of wastes to the ocean from these operations will have no discernible impact on the environment, since this will be done in accordance with the NPDES permit (Appendix B). Unpredictable negative impacts which are not expected to occur, but might occur, include the effects of accidental leakage or spillage of diesel fuel, or of crude oil during the drilling process. The magnitude of such impact is unpredictable, but the duration would be of only a few days since spill containment would commence almost immediately.

### 9.1(a) Air Quality

As indicated in Section 7.2 of this report, air emissions from this operation will consist mainly of exhaust and combustion products from the

diesel power generation engines located on the drilling vessel. These emissions will occur for only about 60 to 90 days (duration of operations). Their magnitude is discussed in Section 7.2. Well tests will last only a few hours and all gas will be flared. Due to favorable circulation and air quality in the area, negative air impacts caused by theproject would be dispersed a short distance from the source. Therefore, it is concluded that the small amount of emissions associated with the drilling of the proposed exploratory well would not cause air quality standards to be exceeded.

Another potential air emission source is a large oil spill (1000 bbls. or more). Technology and regulations make the likelihood of a spill remote. In addition, special programs previously discussed (Sections 3.1 and 3.2) would be placed in effect to control and eliminate a spill as quickly as possible. Thus, a large spill is quite unlikely, but if it occurs, the effect on air quality will be of short duration, with most of the volatile fractions having evaporated within 24 hours.

9.1(b) Marine Environment

The drilling fluid used in the proposed well will be a water-base fluid containing no oil. Bioassay tests conducted on this type of drilling fluid used at other exploratory operations in the Santa Barbara Channel show that the fluid is non-toxic, having a TLm-96 range of 8500 mg/l to over 560,000 mg/l (Refs. 23, 26, 27, 29). The earth removed from the hole in the form of drill cuttings will also be non-toxic because it is similar to sediments continuously deposited by local rivers to the marine environment. The magnitude of this material is discussed in Section 7.1. Its disposal would occur over the drilling phase of the operations, approximately 45 to 60 days. Studies on the dispersion of drilling mud and drill cuttings

released from drilling vessels and platforms show that the materials disperse rapidly with background levels occuring within 300 feet of discharge (Refs. 22, 23, 26, 27, 28). At the proposed location water depth is 100 feet and the materials will be highly dispersed before settling to the ocean floor. Studies by the California State Dept. of Fish and Game (Ref. 17) and others (Refs. 18-30) show that deposition of drill cuttings on the ocean floor and dispersion of small amounts of drilling mud in the ocean environment have had "no adverse effect on the marine environment" (Ref. 3, p. III-10). Estimates of the volumes of these discharges were given in Section 7.1. These discharges would occur during the drilling phase, about a 45-60 day period.

As specified in the NPDES permit for the drilling vessel, the volume of oil discharged as deck drainage will not exceed 52 mg/l (approximately 47 ppm., or about .047 gals./day). When compared to the volumes of oil discharged annually by rivers (1.6 metric tons), natural seeps (0.6 mta), and tankers (2.2 mta), this discharge (9.8 kg. over a 50-day drilling period) will have a negligible effect on the marine environment (Ref. 31).

The NPDES permit granted to the drilling vessel specifies that domestic and sanitary wastes not cause visible oil or floating solids, and that the discharge maintains 1.0 mg/l residual chlorine as cited in 40 CFR 435.2 and 435.5. The Environmental Protection Agency has concluded that this type of control for these wastes will ensure that there is no significant adverse effect on the marine environment.

Spillage of diesel fuel might occur as a result of an accident involving a supply boat or during transfer of the fuel to the supply boat or to the drilling vessel. The U.S. Coast Guard enforces regulations covering transfer

impact.

## 9.2 Onshore Impacts

### 9.2(a) Air Quality

Aerovironment, Inc., conducted a study of the air quality impacts resulting from development following proposed OCS Lease Sale #48 (Ref. 13). Using a worse-case tanker scenario, emissions from extensive development were found to be minor. Therefore, emissions discussed in 9.1(a) (See also Section 7.2.) from a single exploratory well will be negligible in comparison and have no impact on onshore air quality.

### 9.2(b) Water Quality

There will be no impacts on onshore water supplies.

## 9.3 Socioeconomic Impacts

As discussed in Section 5.0, no significant increase in the population or support facilities will be required. Therefore, the socioeconomic impact is negligible.

### 9.3(a) Aesthetic Impacts

On clear days the drilling vessel will be visible from shore, although it will appear rather small at the distance involved (6-8 miles). The impact of this visual sighting will be negative, neutral or positive, depending on the subjective reaction of the viewer. In any case, the temporary duration of its presence (60-90 days) will result in a negligible transient environmental impact.

The main mitigating measure will be utilization of safe and proper operating procedures in all phases of the exploratory drilling program.

## 9.5 Unavoidable and Irreversible Impacts

The only unavoidable transitory impacts on the offshore environment that are expected to occur as a result of drilling this exploratory well are the previously discussed local effects on air and water quality in the Santa Barbara Channel. Irreversible impacts would be limited to the deposition of cuttings on the ocean bottom. However, this impact has neither "a beneficial nor detrimental effect on the environment" (Ref.17). Recent studies show possible positive effects (Ref. 19).

A potential impact could result from a large oil spill. However, any damage sustained by the shoreline, 6 or more miles distant, would likely be minor and of short duration (Ref. 32, p. 35).

## 10.0 Consistency Certification

See consistency certification packet attached to this environmental report.

11.0 Inquiries regarding this report may be directed to:

Mr. Clair Ghylin, Manager, Land Department
Chevron U.S.A., Inc. - Western Region
575 Market Street, Room 1744
San Francisco, CA 94105
Phone (415) 894-4442

.or

Mr. D. S. Moore, Senior Staff Engineer,
Environmental and Chemical
Chevron U.S.A. Inc. - Western Region
575 Market Street, Room 1856
San Francisco, CA 94105
Phone (415) 894-2285

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# Appendix A

## Permits and Government Clearances

# DEPARTMENT OF THE ARMY

NOTE.—It is to be understood that this instrument does not give any property rights either in real estate or material, or any exclusive privileges; and that it does not authorize any injury to private property or invasion of private rights, or any infringement of Federal, State, or local laws or regulations, nor does it obviate the necessity of obtaining *State assent* to the work authorized. (See *Cummings* v. *Chicago*, 188 U.S., 410.)

## PERMIT

Corps of Engineers.

Standard Oil Company of California
Western Operations, Inc.
P. O. Box 606
La Habra, California 90631

23 February, 19 72

Gentlemen:

Referring to written request dated 7 December 1971 for permission to conduct exploratory drilling on the Outer Continental Shelf,

I have to inform you that, upon the recommendation of the Chief of Engineers, and under the provisions of Section 10 of the Act of Congress approved March 3, 1899 (30 Stat. 1151; 33 U.S.C. 403), entitled "An act making appropriations for the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes," you are hereby authorized by the Secretary of the Army.

to conduct exploratory drilling on OCS Parcel 0215 (Tract 372)
(Here describe the proposed structure or work.)

in the Pacific Ocean (Santa Barbara Channel)
(Here to be named the river, harbor, or waterway concerned.)

at locations off Ventura County
(Here to be named the nearest well-known locality—preferably a town or city—and the distance in miles and tenths from some definite point in the same, stating whether above or below or giving direction by points of compass.)

in accordance with the plans shown on the drawing attached hereto marked
(Or drawings; give file number or other definite identification marks.)
"Application for Exploratory Drilling Permit in Santa Barbara Channel off Montalvo, County of Ventura - Date: 1971."
subject to the following conditions:

(a) That the work shall be subject to the supervision and approval of the District Engineer, Corps of Engineers, in charge of the locality, who may temporarily suspend the work at any time, if in his judgment the interests of navigation so require.

(b) That any material dredged in the prosecution of the work herein authorized shall be removed evenly and no large refuse piles, ridges across the bed of the waterway, or deep holes that may have a tendency to cause injury to navigable channels or to the banks of the waterway shall be left. If any pipe, wire, or cable hereby authorized is laid in a trench, the formation of permanent ridges across the bed of the waterway shall be avoided and the back filling shall be so done as not to increase the cost of future dredging for navigation. Any material to be deposited or dumped under this authorization, either in the waterway or on shore above high-water mark, shall be deposited or dumped at the locality shown on the drawing hereto attached, and, if so prescribed thereon, within or behind a good and substantial bulkhead or bulkheads, such as will prevent escape of the material in the waterway. If the material is to be deposited in the harbor of New York, or in its adjacent or tributary waters, or in Long Island Sound, a permit therefor must be previously obtained from the Supervisor of New York Harbor, New York City.

(c) That there shall be no unreasonable interference with navigation by the work herein authorized.

(d) That if inspections or any other operations by the United States are necessary in the interest of navigation, all expenses connected therewith shall be borne by the permittee.

(e) That no attempt shall be made by the permittee or the owner to forbid the full and free use by the public of all navigable waters at or adjacent to the work or structure.

(f) That if future operations by the United States require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army, it shall cause unreasonable obstruction to the free navigation of said water, the owner will be required upon due notice from the Secretary of the Army, to remove or alter the structural work or obstructions caused thereby without expense to the United States, so as to render navigation reasonably free, easy, and unobstructed; and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners shall, without expense to the United States, and to such extent and in such time and manner as the Secretary of the Army may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable capacity of the watercourse. No claim shall be made against the United States on account of any such removal or alteration.

(g) That the United States shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the Government for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

(h) That if the display of lights and signals on any work hereby authorized is not otherwise provided for by law, such lights and signals as may be prescribed by the U.S. Coast Guard, shall be installed and maintained by and at the expense of the owner.

(i) That the permittee shall notify the said district engineer at what time the work will be commenced, and as far in advance of the time of commencement as the said district engineer may specify, and shall also notify him promptly, in writing, of the commencement of work, suspension of work, if for a period of more than one week, resumption of work, and its completion.

(j) That if the structure or work herein authorized is not completed on or before 31st day of December, 1975, this permit, if not previously revoked or specifically extended, shall cease and be null and void.

By authority of the Secretary of the Army:

H. McK. ROPER, JR.
LTC, CE
District Engineer

ENG FORM 1721
JUNE 1968

Replaces edition of 1 Sep 48, which is obsolete. (ER 1145-2-303)

U.S. GOVERNMENT PRINTING OFFICE : 1968—O-312-340

# APPENDIX B

## Drilling Vessel NPDES Permit

GLOBAL MARINE INC.
GLOBAL MARINE HOUSE
811 WEST SEVENTH STREET
LOS ANGELES, CALIFORNIA 90017
U.S.A.

TELEPHONE: 213-680-9550
CABLE: GLOMARCO
LOS ANGELES
HOUSTON
LONDON

September 22, 1976

Mr. Robert A. Alexander
Standard Oil Company of California
225 Bush Street
San Francisco, California 94104

Dear Bob: Re Permit to Discharge Region 9

GMI has filed with the Environmental Protection ~~Association~~ Agency (Region 9) in San Francisco for a permit to discharge. This will be a five-year permit, when issued, to discharge in all federal leases off shore that have been leased from Point Conception to San Diego.

The ships for which the permit to discharge have been filed are as follows:

| | |
|---|---|
| CUSS I | GLOMAR GRAND BANKS |
| GLOMAR 2 | GLOMAR JAVA SEA |
| GLOMAR GRAND ISLE | GLOMAR CORAL SEA |
| GLOMAR CONCEPTION | |

If you need any specific information concerning these permits and an up-to-date status at any time, I suggest you contact Norm Dion directly at our office, extension 260.

Very truly yours,

Jimmy Dean

JD/jr

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
100 CALIFORNIA STREET
SAN FRANCISCO, CALIFORNIA 94111

# MODIFICATIONS OF ISSUED NPDES PERMITS FOR GLOBAL MARINE DRILLING VESSELS: CORAL SEA (CA0110087), GRAND BANKS (CA0110109), CONCEPTION (CA0110117), GRAND ISLE (CA0110125), JAVA SEA (CA0110133), GLOMAR II (CA0110142), AND CUSS I (CA0110052)

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq.; the "Act"), and 40 CFR 125.22(a), the Regional Administrator has made the following modifications:

1. Condition I.A.2.a. in each of the permits (sanitary wastes) is changed to delete the discharge limitations on suspended solids and BOD (5 day).

2. The following condition is added to each of the permits:

During the period beginning the effective date of this permit and lasting through May 31, 1982, the permittee is authorized to discharge from outfall serial number (specified below) blow-out preventer control fluid. Such discharges shall be limited and monitored by the permittee as specified below:

| Effluent Characteristic | Monitoring Requirements* | |
|---|---|---|
| | Measurement Frequency | Sample Type |
| Total Volume (gallons)** | Monthly | Estimate |

* The monitoring requirements shall commence on the effective date of this permit.
** The total volume of blow-out preventer control fluid discharged into the ocean waters each month of the year shall be monitored.

The above condition appears as Condition I.A.7. in permits:

| | |
|---|---|
| CA0110087 | (Discharge 018) |
| CA0110109 | (Discharge 018) |
| CA0110117 | (Discharge 018) |
| CA0110125 | (Discharge 018) |
| CA0110133 | (Discharge 018) |
| CA0110142 | (Discharge 013) |

and appears as Condition I.A.6. in permit CA0110052 (Discharge 006).

The permit modifications shall become effective thirty (30) days from the date of signature.

Signed this 29th day of July, 1977.

For the Regional Administrator

Director, Enforcement Division

# AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et. seq; the "Act"), Global Marine Incorporated is authorized to discharge:

shower, washing machine, garbage disposal, sink and galley wastewaters (discharge 001) from frame 160;

sanitary wastes (discharge 002) from frame 139;

drill cuttings, drilling muds, and excess cement slurries (discharge 003) from frame 95;

work area deck drainage (discharge 004) from frame 95;

engine room drainage (discharge 005) from frame 158;

engine cooling water (discharge 006) from frame 144;

auxiliary system cooling water (discharges 007, 008, and 009) from frames 148, 127, and 154, respectively; and

accumulated drainage (discharges 010, 011, 012, 013, 014, 015, 016, and 017) from frame 21, the port and starboard sides of frame 44, the port and starboard sides of frame 54, the port and starboard sides of frame 74, and the starboard side of frame 109, respectively,

from the drilling vessel, Glomar Coral Sea to authorized discharge sites within the waters of the Pacific Ocean beyond the territorial seas off the coast of the State of California in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III hereof.

This permit shall become effective on December 3, 1976.

This permit and the authorization to discharge shall expire at midnight, September 30, 1981.

Signed this 8th day of November, 1976.

For the Regional Administrator

Director, Enforcement Division

The authorized discharge sites include (by OCS lease parcel number):

in the Santa Barbara Channel from Pt. Conception to Goleta Point,

P-0180 P-0181 P-0182 P-0183 P-0184 P-0185
P-0186 P-0187 P-0188 P-0189 P-0190 P-0191
P-0192 P-0193 P-0194 P-0195 P-0196 P-0197;

in the Santa Barbara Channel north of San Miguel and Santa Rosa Islands,

P-0167 P-0168 P-0169 P-0170 P-0171 P-0173
P-0174 P-0175 P-0176 P-0177 P-0178 P-0179;

in the Santa Barbara Channel from Santa Barbara to Ventura,

P-0166 P-0198 P-0199 P-0200 P-0201 P-0202
P-0203 P-0204 P-0205 P-0206 P-0207 P-0208
P-0209 P-0210 P-0211 P-0212 P-0213 P-0215
P-0216 P-0217 P-0218 P-0219 P-0220 P-0221
P-0222 P-0223 P-0224 P-0226 P-0227 P-0228
P-0229 P-0230 P-0231 P-0232 P-0233 P-0234
P-0235 P-0237 P-0238 P-0240 P-0241;

in waters south of Santa Rosa and Santa Cruz Islands,

P-0243 P-0244 P-0245 P-0246 P-0247 P-0248
P-0249 P-0250 P-0251 P-0252 P-0253;

in the San Pedro Channel between San Pedro and Laguna,

P-0293 P-0295 P-0296 P-0298 P-0300 P-0301
P-0302 P-0303 P-0304 P-0306 P-0309 P-0310
P-0311;

in waters west of Santa Barbara Island,

P-0289 P-0290 P-0291; and

in waters west of San Clemente Island in the Tanner Bank Area,

P-0257 P-0258 P-0259 P-0260 P-0262 P-0263
P-0264 P-0265 P-0266 P-0267 P-0268 P-0269
P-0270 P-0271 (P-0272) P-0273 P-0274 P-0275
P-0276 P-0277 P-0278 P-0280 P-0281 P-0282
P-0284 P-0285 P-0286 P-0287 P-0288.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Based on a daily maximum flow of .005 millic gallons per day or .0002 cubic meters per second)

2. During the period beginning the effective date of this permit and lasting through September 30, 1981, the permittee is authorized to discharge from outfall(s) serial number(s) 002 (sanitary wastes). SEWAGE

Such discharges shall be limited and monitored by the permittee as specified below:

a.

| Effluent Characteristic | Discharge Limitations kg/day (lbs/day) | | Other Units (Specify) | | Monitoring Requirements* | |
|---|---|---|---|---|---|---|
| | Daily Avg | Daily Max | Daily Avg | Daily Max | Measurement Frequency** | Sample Type |
| Flow-$m^3$/Day (MGD) | - | - | - | - | Once/month | Discrete |
| Suspended Solids | - | 2.8(6.3) | - | 150 mg/l | Once/month | Discrete |
| Biochemical Oxygen Demand (5-day) | - | 0.9(2.1) | - | 50 mg/l | Once/month | Discrete |
| Residual Chlorine | - | - | 1.0 mg/l*** | - | Once/month | Discrete |

IN ISHIN

b. There shall be no visible floating solids in the receiving waters as a result of these discharges.

c. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: discharge 002, subsequent to all treatment processes and prior to entry into the waters of the Pacific Ocean.

* The monitoring requirements shall commence on the effective date of this permit.

** The measurement frequency is once per month with a minimum frequency of once per site.

*** After a minimum retention time of fifteen minutes, the effluent shall have a minimum chlorine residual of 1.0 mg/l and be maintained as close to this concentration as possible.

1,000,000 5,000GPD

5/1000 900GAL

SIC # 1382

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date of this permit and lasting through September 30, 19[illegible] the permittee is authorized to discharge from outfall(s) serial number(s) 001 (domestic wastes).

Such discharges shall be limited and monitored by the permittee as specified below:

a.

| Effluent Characteristic | Discharge Limitations kg/day (lbs/day) | | Other Units (Specify) | | Monitoring Requirements* | |
|---|---|---|---|---|---|---|
| | Daily Avg | Daily Max | Daily Avg | Daily Max | Measurement Frequency** | Sample Type |
| Flow-$m^3$/Day (MGD) | - | - | - | - | Once/month | Estimate |

b. There shall be no visible oil or floating solids in the receiving waters as a result of the discharge of these wastes.

c. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: discharge 001, subsequent to all treatment processes and prior to entry into the waters of the Pacific Ocean.

* The monitoring requirements shall commence on the effective date of this permit.

** The measurement frequency is once per month with a minimum frequency of once per site.

SHOWER, WASHING MACHINES, GARBAGE DISPOSAL, SINK + GALLEY WASTE WATER

130 Bbls. PER DAY

A. Effluent Limitations and Monitoring Requirements

3. During the period beginning the effective date of this permit and lasting through September 30, 1981, the permittee is authorized to discharge from outfall(s) serial number(s) 003 (drilling muds, drill cuttings and cement slurries). Such discharges shall be limited and monitored by the permitee as specified below:

a.

| Effluent Characteristic | Discharge Limitations kg/day (lbs/day) Daily Avg | Daily Max | Other Units (Specify) Daily Avg | Daily Max | Monitoring Requirements* Measurement Frequency | Sample Type |
|---|---|---|---|---|---|---|
| Total Volume (cubic meters)** | - | - | - | - | Once/site | Estimate |

b. There shall be no discharge of free oil as a result of the discharge of drill cuttings and/or drilling muds.

c. There shall be no visible floating solids in the receiving waters as a result of these discharges.

d. The discharge of oil base drilling muds is prohibited.

e. The discharge of drill cuttings, drilling muds and/or excess cement slurries is prohibited in Areas of Special Biological Significance as designated by Bureau of Land Management (BLM) lease contracts. Any subsequent modification of BLM contracts may be basis for a modification of this requirement. Areas of Special Biological Significance presently identified in BLM contracts include, but are not limited to, areas in OCS parcels (P-0272) P-0273, P-0274, P-0277 and P-0278.

* The monitoring requirements shall commence on the effective date of this permit.

** The total volume of drill cuttings and drilling muds discharged at each site shall each be monitored by an estimate sample type.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Based on a maximum flow of .072 million gallons per day or .003 cubic meters per second)

4. During the period beginning the effective date of this permit and lasting through September 30, 19 the permittee is authorized to discharge from outfall(s) serial number(s) 004 (work area deck drainage).

Such discharges shall be limited and monitored by the permittee as specified below: OIL WATER SEPARATOR & SKIMMER

| a. Effluent Characteristic | Discharge Limitations kg/day (lbs/day) | | Other Units (Specify) | | Monitoring Requirements* | |
|---|---|---|---|---|---|---|
| | Daily Avg | Daily Max | Daily Avg | Daily Max | Measurement Frequency** | Sample Type |
| Flow-$m^3$/Day (MGD) | - | - | - | - | Once/month | Composite 4 OR 24 HR |
| Oil and Grease | - | 14.2(31.2) | - | 52 mg/l | Once/month | Composite |

b. There shall be no visible floating solids in the receiving waters as a result of these discharges.

c. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: discharge 004, subsequent to all treatment processes and prior to entry into the waters of the Pacific Ocean.

* The monitoring requirements shall commence on the effective date of this permit.

** The measurement frequency is once per month with a minimum frequency of once per site.

1000 GAL DAY

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Based on a maximum flow of .014 million gal. as per day or .0006 cubic meters per second)

5. During the period beginning the effective date of this permit and lasting through September 30, 1981, the permittee is authorized to discharge from outfall(s) serial number(s) 005 (engine room drainage).

Such discharges shall be limited and monitored by the permittee as specified below:

a.

| Effluent Characteristic | Discharge Limitations kg/day (lbs/day) | | Other Units (Specify) | | Monitoring Requirements* | |
|---|---|---|---|---|---|---|
| | Daily Avg | Daily Max | Daily Avg | Daily Max | Measurement Frequency | Sample Type |
| Flow-$m^3$/Day (MGD) | - | - | - | - | Quarterly/yr. | Composite 4 CA 24HR |
| Oil and Grease | - | 2.8(6.2) | - | 52 mg/l | Quarterly/yr. | Composite |

b. There shall be no visible floating solids in the receiving waters as a result of these discharges.

c. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: discharge 005, subsequent to all treatment processes, and prior to entry into the waters of the Pacific Ocean.

* The monitoring requirements shall commence on the effective date of this permit.

30 GAL PER DAY

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

6. During the period beginning the effective date of this permit and lasting through September 30, 1981, the permittee is authorized to discharge from outfall(s) serial number(s) 006, 007, 008, and 009 (engine and auxiliary system cooling water). Such discharges shall be limited and monitored by the permittee as specified below:

a.

| Effluent Characteristic | Discharge Limitations kg/day (lbs/day) | | Other Units (Specify) | | Monitoring Requirements* | |
|---|---|---|---|---|---|---|
| | Daily Avg | Daily Max | Daily Avg | Daily Max | Measurement Frequency** | Sample Type |
| Flow-$m^3$/Day (MGD) | - | - | - | - | Once/month | Discrete |
| Temperature | - | - | - | - | Once/month | Discrete |
| Oil and Grease*** | - | 250 (550) | - | 15 mg/l | Once/month | Discrete |

1 & 15th

After a review of effluent monitoring representing at least one (1) year of discharge from the permittee's facility, the Regional Administrator may, upon due notice, revise the permit to establish final temperature limitations. Such a revision of this permit may also include an Implementation Schedule for an abatement program or other appropriate conditions to achieve the final temperature limitations.

b. The use of chemical additives is prohibited.

c. There shall be no visible floating solids in the receiving waters as a result of these discharges.

d. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: discharges 006, 007, 008, and 009, prior to mixture with the waters of the Pacific Ocean and at a point in the receiving waters where there is no thermal influence from the discharge (receiving waters need only be monitored with respect to temperature).

(2000 GPM)

* The monitoring requirements shall commence on the effective date of this permit.

** The monitoring frequency is once per month with a minimum frequency of once per site.

*** The oil and grease limitations described in kg/day (lbs/day) apply to the total discharge from discharges 006, 007, 008, and 009.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

7. During the period beginning the effective date of this permit and lasting through September 30, 1981, the permittee is authorized to discharge from outfall(s) serial number(s) 010, 011, 012, 013, 014, 015, 016, and 017 (accumulated drainage).
Such discharges shall be limited and monitored by the permittee as specified below:

a.

| Effluent Characteristic | Discharge Limitations kg/day (lbs/day) | | Other Units (Specify) | | Monitoring Requirements * | |
|---|---|---|---|---|---|---|
| | Daily Avg | Daily Max | Daily Avg | Daily Max | Measurement Frequency | Sample Type |
| Flow-$m^3$/Day (MGD) | - | - | - | - | Quarterly/yr. | Discrete |
| Oil and Grease | - | - | - | - | Quarterly/yr. | Discrete |
| Total Volumes (gallons)** | - | - | - | - | Quarterly/yr. | Estimate |

After a review of effluent monitoring representing at least one (1) year of discharge from the permittee's facility, the Regional Administrator may, upon due notice, revise the permit to establish final oil and grease limitations. Such a revision of this permit may also include an Implementation Schedule for an abatement program or other appropriate conditions to achieve the final limitations.

b. There shall be no visible floating solids in the receiving waters as a result of these discharges.

c. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following locations: discharges 010, 011, 012, 013, 014, 015, 016, and 017, subsequent to all treatment processes and prior to entry into the waters of the Pacific Ocean.

* The monitoring requirements shall commence on the effective date of this permit.

** Total volume discharged from discharges 010 through 017 during that particular quarter of the year.

013 - 014 } 40 Bbls
015 - 016 } 50 Bbls

B. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

Not applicable

2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

3. A "schedule of compliance" means a program composed of two integral parts: (a) plan--description of new or modified facilities to treat and dispose of the effluent; and (b) schedule--a timetable setting forth the date by which all wastewaters will be in compliance with the effluent limitations of this permit. The schedule shall include (if appropriate) dates by which the permittee will accomplish:

   a. Completion of a preliminary engineering plan report;

   b. Completion of construction plans and specifications;

   c. Initiation of construction;

   d. Completion of construction;

   e. Demonstration of compliance with effluent limitations.

C. MONITORING AND REPORTING

1. *Representative Sampling*

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. *Reporting*

Monitoring results obtained during the previous 3 months shall be summarized for each month and submitted on forms to be supplied by the Regional Administrator, to the extent that the information reported may be entered on the forms. The results of all monitoring required by this permit shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this permit. Unless otherwise specified, discharge flows shall be reported in terms of the average flow over each 30-day period and the maximum daily flow over that 30-day period. Monitoring reports shall be postmarked no later than the 28th day of the month following the completed reporting period. The first report is due on February 28, 1977 . Duplicate signed copies of these, and all other reports required herein, shall be submitted to the Regional Administrator and the State at the following addresses:

Regional Administrator
Environmental Protection Agency
Region IX, ATTN: E-5/MR
100 California Street
San Francisco CA 94111

State of California
Water Resources Control Board
Attn: Mr. Bill B. Dendy
P.O. Box 100
Sacramento, Ca. 95801

3. *Definitions*

See Part III.

4. *Test Procedures*

Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304(g) of the Act, under which such procedures may be required.

5. *Recording of Results*

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date, and time of sampling;

b. The dates the analyses were performed;

c. The person(s) who performed the analyses;

The analytical techniques or methods used; and

e. The results of all required analyses.

6. *Additional Monitoring by Permittee*

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall also be indicated.

7. *Records Retention*

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the State water pollution control agency.

NAGEMENT REQUIREMENTS

1. *Change in Discharge*

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, or treatment modifications which will result in new, different, or increased discharges of pollutants must be reported by submission of a new NPDES application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the permit issuing authority of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

2. *Noncompliance Notification*

If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Regional Administrator and the State with the following information, in writing, within five (5) days of becoming aware of such condition:

a. A description of the discharge and cause of noncompliance; and

b. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

3. *Facilities Operation*

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

4. *Adverse Impact*

The permittee shall take all reasonable steps to minimize any adverse impact to receiving waters resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

5. *Bypassing*

Any diversion from or bypass of facilities necessary to maintain compliance with the terms and conditions of this permit is prohibited, except (i) where unavoidable to prevent loss of life or severe property damage, or (ii) where excessive storm drainage or runoff would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall promptly notify the Regional Administrator and the State in writing of each such diversion or bypass, in accordance with the procedure specified in Part II.A.2. above.

6. *Removed Substances*

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.

7. Safeguards to Electric Power Failure

See Part III.

## RESPONSIBILITIES

1. *Right of Entry*

The permittee shall allow the head of the State water pollution control agency, the Regional Administrator, and/or their authorized representatives, upon the presentation of credentials:

a. To enter upon the permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit; and

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any discharge of pollutants.

2. *Transfer of Ownership or Control*

In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Regional Administrator and the State water pollution control agency.

3. *Availability of Reports*

Except for data determined to be confidential under Section 308 of the Act, all reports prepared in accordance with the terms of this permit shall be available for public

inspection at the offices of the State water pollution control agency and the Regional Administrator. As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act.

*Permit Modification*

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

a. Violation of any terms or conditions of this permit;

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

5. *Toxic Pollutants*

Notwithstanding Part II, B-4 above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee so notified.

6. *Civil and Criminal Liability*

Except as provided in permit conditions on "Bypassing" (Part II, A-5) and "Power Failures" (Part II, A-7), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

7. *Oil and Hazardous Substance Liability*

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

8. *State Laws*

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Act.

*Property Rights*

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

10. *Severability*

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

## PART III

## OTHER REQUIREMENTS

Part I.A.8. Additional Monitoring Requirements: Bioassay of Spent Drilling Muds

Within one (1) year of the effective date of this permit or within the first year of operation in federal waters off the State of California, the permittee shall conduct and report the results of a 96-hour static bioassay determining the $LC_{50}$ (concentration at which fifty percent of the test organisms survived for 96 hours) of spent drilling muds. A sample of spent drilling muds, immediately prior to their intended discharge, shall be collected for analysis from each permitted vessel. The bioassay shall be conducted with a test organism approved, in writing, prior to use, by the Regional Administrator. The following shall be submitted to the Regional Administrator:

(a) the date the sample was collected;

(b) the total volume of spent muds discharged on the date of the sample;

(c) the water depth into which the muds were discharged;

(d) the results of the 96-hour bioassay, including the survival percentages of all dilutions tested and the graph from which the $LC_{50}$ was extrapolated; and

(e) a list of all components, including the weights, used to compose the drilling muds which were discharged. If commercial names are listed, their chemical constituents shall also be provided.

Part I.C.3. Definitions

a. "Territorial seas" means that part of the ocean measured three miles seaward from the line of lower low water and the line closing bays, rivers, and historic waters and which is shown on a series of charts prepared by the National Security Council, Law of the Sea Taskforce on the United States Baseline and published by the National Ocean Survey.

b. A "discrete sample" means any individual sample collected in less than fifteen (15) minutes.

c. The "daily maximum" discharge means the total discharge by weight during any calendar day.

d. The "daily maximum" concentration means the measurement made on any single discrete sample or composite sample.

e. "Sanitary wastes" include human body wastes discharged from toilets and urinals.

f. The term "deck drainage" includes all water resulting from platform washings, deck washings, and runoff from curbs, gutters, and drains including drip pans and work areas.

g. A "composite sample" means four (4) samples taken over a twenty-four (24) hour period, analyzed separately and the four samples averaged. The daily maximum limitations for oil and grease are based on the above definition of composite samples.

Part I.C.8. Monitoring Modification

Monitoring, analytical, and reporting requirements may be modified by the Regional Administrator upon due notice.

Part II.A.7. Safeguards to Electric Power Failure

a. The permittee shall, within ninety (90) days of the effective date of this permit, submit to the Regional Administrator a description of the existing safeguards provided to assure that, should there be reduction, loss, or failure of electric power, the permittee shall comply with the terms and conditions of this permit. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures, experienced over the past five years, on effluent quality and on the capability of the permittee to comply with the terms and conditions of the permit. The adequacy of the safeguards is subject to the approval of the [illegible]istrator.

b. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or, should the Regional Administrator not approve the existing safeguards, the permittee shall, within ninety (90) days of the effective date of this permit, or within ninety (90) days of having been advised by the Regional Administrator that the existing safeguards are inadequate, provide to the Regional Administrator a schedule of compliance for providing, not later than July 1, 1977, safeguards such that in the event of reduction, loss or failure of electric power, the permittee shall comply with the terms and conditions of this permit. The schedule of compliance shall, upon approval of the Regional Administrator, become a condition of this permit.

Part II.B. Responsibilities

11. Other Affected Authority

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable law or regulation under authority preserved by Section 511 of the Act.

12. Discharge Site Modifications

A minimum of 120 days prior to the initiation of any discharges at a site not authorized by this permit, the permittee shall provide to the Regional Administrator a written request for the modification of the discharge sites authorized in this permit. This written request shall include:

(a) the new site(s), listed by the parcel number(s) assigned in the leasing contracts,

(b) the lambert coordinates of the center of each parcel, and

(c) any additional information necessary to the Regional Administrator for his determinations regarding the modification request.

Until the modifications have been approved by the Regional Administrator and are in effect, any discharge at an unauthorized site is prohibited.

Part III.A. Notification of Relocation

No less than fourteen (14) days prior to any relocation and initiation of discharge activities at an authorized discharge site by the drilling vessel, Glomar Coral Sea, the permittee shall provide to the Regional Administrator and the appropriate state agency, written notification of such actions. The notification shall include the parcel number and exact coordinates of the new site and the initial date and expected duration of drilling activities at the site.

Part III.B. Reapplication

If the permittee desires to continue to discharge, the reapplication shall be submitted no later than 180 days prior to the expiration date of this permit.

# Appendix C

## Oil Spill Equipment and Materials Inventory

CHEVRON U.S.A. - LA HABRA, CALIFORNIA

Oil Spill Equipment and Materials Inventory

| | |
|---|---|
| 1 | Model 1011-OS Floating oil skimmer with 1-1/2 HP 115/230 volt Class 1 Group D explosion proof GE motor |
| 1 | Homelite Generator #176A 35-1 3,500 Watts w/spark arrester |
| 1,500 | Feet, #3-12.24 Floating Barrier as manufactured by Oil Spill Services w/12" fence and 23" skirt and 3/8" chain |
| 6 | Bales, Conwed Sorbent Booms (240 feet) |
| 2 | Bales, Conwed Sorbent Continuous Sweeps |
| 2 | Boxes, Conwed Sorbent Regular Sweeps |
| 4 | Hudson Ozark Sprayers |
| 10 | Drums, Corexit dispersant (Concentrated) |
| 3 | Drums, Shell "Herder" |

# APPENDIX D

## Description of Drilling Vessel

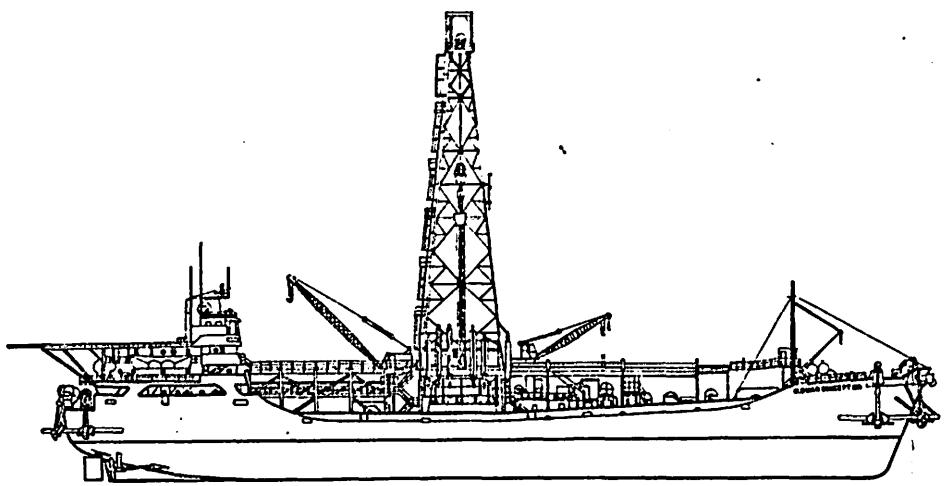
**Length, Beam, Draft:**
Length: 400.0' — Beam: 65'2" — Draft: 11'10" (Light ship)
**Displacement:**
5,727 L.T. (Light ship)
**Centerwell:**
20' x 22'
**Propulsion:**
Diesel electric, twin screw, driven by GE 752 U3A electric motors.
**Ground Tackle:**
10 — 30,000 lb. anchors, 8 with 2500' 2¾" stud link chain, 2 with 1500' 2¾" stud link chain used with 2¾" wire rope.
**Anchor Winches:**
4 — Double wildcat chain windlasses, diesel driven and 2 single drum galvanized wire drum diesel driven.
**Electric Power:**
3 — 500 KW AC Caterpillar D-398B
1 — 175 KW AC emergency generator driven by GMC 8V-71 diesel engine.
**Cranes:**
1 — Link Belt TC-108, 45 ton, diesel driven.
1 — Link Belt TC-48, 15 ton, driven by GMC 3-53 diesel engine.
**Auxiliary Pumps:**
2 Fuel
2 drill water
2 fresh water circulating
2 salt water cooling
2 fire
1 Bilge
1 Sanitation
**Compressed Air System:**
2 — 358 CFM 125 PSI air compressors with after coolers.
**Water Distillation Unit:**
MECO PEE 300 K, 300 gallons per hour.
**Radio:**
RCA radio-telephone, hi-seas system and Apelco Model AE-160M radio-telephone.
**Radar:**
Decca Model D-202

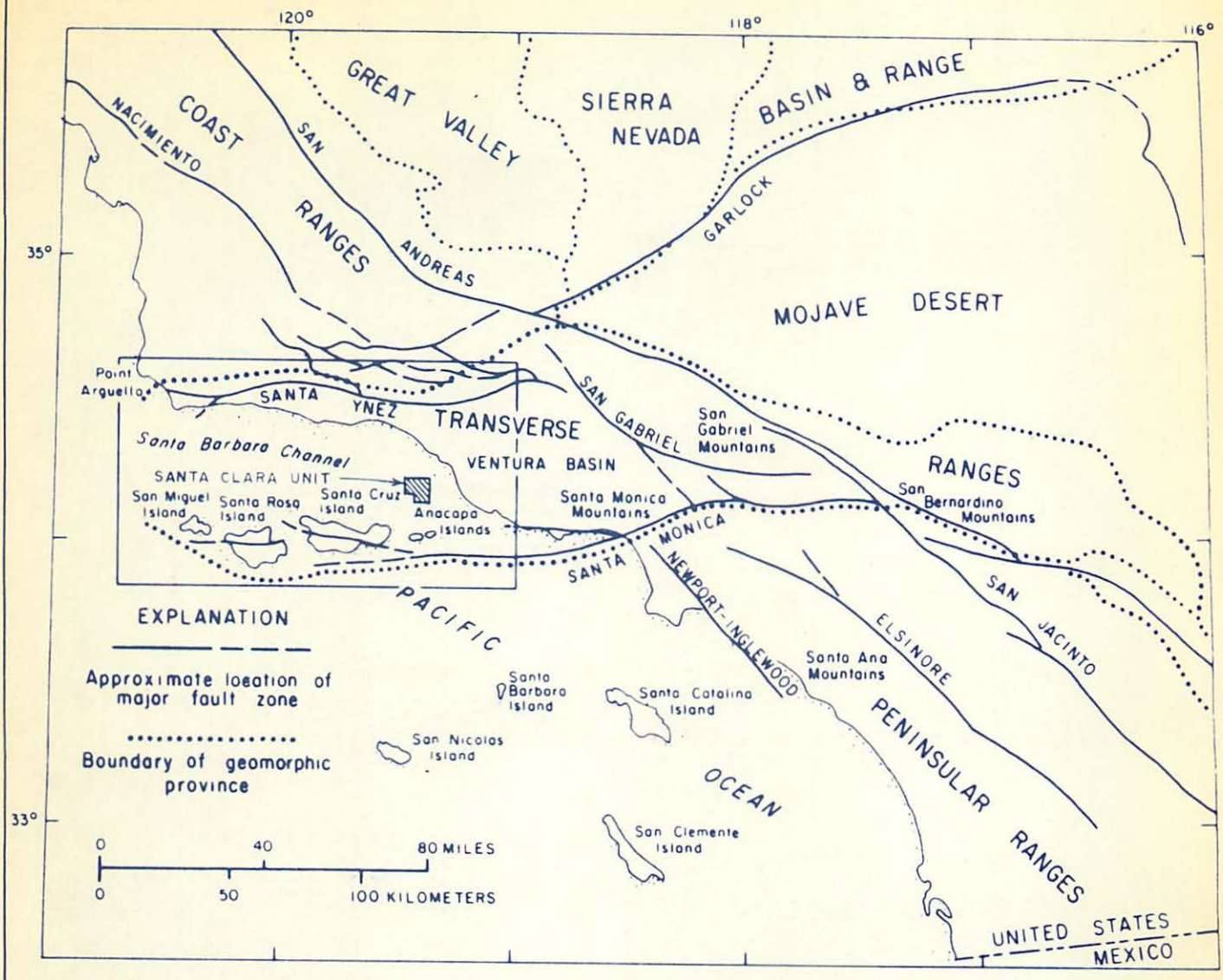
**Fathometer:**
Raytheon
**Intercom System:**
Sound powered telephone system.
**Welding Machine:**
2 — Lincoln 300 amp. electric driven.
**Fire Smothering System:**
D15A "Fire Boss" dry chemical fire extinguishing system for centerwell area.
**Active Mud:**
330 barrels
**Reserve Mud:**
2,484 barrels
**Drilling Water:**
15,325 barrels
**Bulk Mud:**
8,640 cu. ft.
**Bulk Cement:**
4,540 cu. ft.
**Sack Material Storage:**
12,000 sacks

**Fuel:**
8,144 barrels
**Potable Water:**
512 barrels
**Derrick:**
142' x 61' x 38' special design galvanized with 1,000,000 lb. hookload capacity, API rating.
**Drawworks:**
National type, 1625 DE, with 6" single Parkersburg Hydromatic brake; driven by 2 GE 752 RI electric motors; 6500' 1½" drilling line, sand reel with 15,000' 9/16" wire rope.
**Rig Power:**
3 — 500 KW AC Caterpillar D-398B diesel engines.
1 — 175 KW AC emergency generator driven by GM 8V-71 diesel engine.
**Rotary Table:**
National type, C-375 with 37½" opening, independently driven by GE 752 RI DC motors, 750 HP.

**Mud Pumps:**
National type, N1300 duplex power slush pumps, 1¾" x 16", each driven by dual GE 750 HP (cont.) motors.
**Mud Mixing Pump:**
2 Mission 6 x 8R centrifugals, 75 HP motors.
**Cementing Unit:**
Two B.J. "Pace Maker" 4' x 4' skid mounted units.
**Traveling Block:**
National type 660-G, for 1½" wire line, with special guide rail rollers.
**Swivel:**
National type, N-1324, 500 ton.
**Air Tuggers(**
Ingersoll K6UL
**Rotary Hose:**
Goodall, 10,000 PSI test, 3 in.
**Crown Block:**
National 760-G
**Master Bushing:**
Varco, hinged
**Drill Pipe:**
5" drill pipe, Grade E, 19.5 lb./ft. Range 2
**Drill Collars:**
6½" OD x 30'
8" OD x 30'
**Logging Unit:**
Schlumberger
**BOP Control System:**
Koomey 240 gallon accumulator with direct and remote controls and dual sub-sea control pods.
**BOP Stack:**
Cameron 16¾, 5,000 collett connector
Hydril 16¾, 5,000 PSI (10,000 PSI test)
Cameron 16-3.5, 5,000 PSI (10,000 PSI test
**Riser Tensioning:**
Vetco single
6 @ 60K
**Guide Line Tensioning:**
Vetco single
4 @ 16K
**Marine Riser**
Vetco MR4
18¾, 2 line integral w/10,000 PSI lines.

GLOMAR CONCEPTION






Index map showing relation of Santa Barbara Channel region to major faults and physiographic provinces of southern California

Source: - U.S. Geological Survey 1974

FIGURE 1

| | | |
|---|---|---|
| Chevron U.S.A. Inc. Western Region Production Department | ENGINEERING<br>DRAFTING<br>CHECKED<br>APPROVED | SCALE NOTED<br>DATE<br>A-SB-4017-0 |