OCS ENVIRONMENTAL ASSESSMENT

PLATFORM GINA DEVELOPMENT AND PRODUCTION PLAN REVISION

UNION OIL COMPANY

JANUARY 30, 1992

United States Department of the Interior
Minerals Management Service
Pacific OCS Region
770 Paseo Camarillo,
Camarillo, California 93010

Environmental Assessment

January 30, 1992

Project: Platform Gina Development and Production Plan Revision

Operator: Unocal Company, U.S.A.

Area: Eastern Santa Barbara Channel, California

Prepared By: Regional Supervisor
Office of Leasing and Environment
Pacific OCS Region

RELATED ENVIRONMENTAL DOCUMENTS

City of Oxnard. 1990. Platform Gina proposed return water line replacement and conversion to produced gas. Technical assistance from Carol Waldrop & Associates.

City of Oxnard and U.S. Geological Survey. 1980. Environmental Impact Report/Environmental Assessment (EIR/EA). Union Oil Company Platform Gina and Platform Gilda Project, Leases OCS P-0202 and P-0216, Offshore Ventura County, CA. Technical assistance from Dames and Moore. 3 Vol. + App.

Unocal Company. 1990. Platform Gina Point Hueneme Unit (West Hueneme Field), Proposed Development and Production Plan (DPP). Unocal North American Oil and Gas Division Western Region, Ventura District, Ventura, CA. 80p.

Also, see References Cited

IMPACT SUMMARY

CEQ Parameter 40 CFR 1508.27(b)		Severity of Impact Level/Degree of Significance	EA Section Reference
1.	Beneficial and/or adverse effects	NS	Section 1.3
2.	Public health and safety	NS	Section 3.0
3.	Unique characteristics of the geographic area	NS	Section 3.0
4.	Effects highly controversial	NS	Section 3.0
5.	Highly uncertain effects or unique or unknown risks	NS	Section 3.0
6.	Establishes precedent for future actions or is a decision in principle about future action	NS	Section 1.0 & 2.0
7.	Assessment of cumulative actions and impacts thereof. Note 40 CFR 17.	NS	Section 3.0
8.	Effects on districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural historical resources	NS	Section 3.0
9.	Effects on endangered or threatened species or their habitat that have been determined to be critical under the Endangered Species Act of 1973	NS	Section 3.0
10.	Threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment	NS	Section 3.0
11.	Other related NEPA and environmental documents	--	Cover Sheet & Section 6.0

NS = Not Significant

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1.0 Introduction

1.1 Purpose of Proposed Action

The Outer Continental Shelf Lands Act, as amended (OCSLA) calls for the expeditious and orderly exploration and development of oil and gas resources balanced with the protection of the human, marine, and coastal environments in offshore federal waters. The objective of the Union Oil Company of California (Unocal) is to derive economic benefit from the development and production of hydrocarbons (natural gas) from the Point Hueneme Field in the southeastern Santa Barbara Channel.

1.2 Historical Background and Regulatory Setting

Platform Gina is located on Lease OCS-P 0202, in the Point Hueneme Unit in the southeastern corner of the Santa Barbara Channel. The Point Hueneme Unit consists of 3 lease blocks: Leases OCS-P 0202, 0203, and 0479. This unit was approved by the Minerals Management Service (MMS) in February 1988. Platform Gina is the only platform in the unit and is located approximately 6 miles southwest of Oxnard, in 95 feet (ft) of water (Fig. 1.2-1).

Unocal and Mobil Oil Corporation (Mobil) acquired leases P-0202 and P-0203 in the 1968 Santa Barbara Channel lease sale, to develop the Hueneme and Sespe Formations in the Point Hueneme field. The first discovery in this area was made on Lease OCS-P 0202 in July 1969. Mobil later assigned its interests in the leases to Unocal in October 1978.

Unocal submitted a Development and Production Plan (DPP) for Platform Gina to the U.S. Geological Survey (USGS, predecessor to the MMS) in 1979. The DPP was deemed submitted on April 13, 1979. It called for the installation of the platform and two pipelines to shore. The California Coastal Commission (CCC) concurred with Unocal's DPP consistency certification on November 7, 1979. The City of Oxnard and the USGS, with technical assistance from Dames & Moore, prepared an Environmental Impact Report/Environmental Assessment (EIR/EA) for the Platform Gilda and Platform Gina Project (City of Oxnard and USGS, 1980). The USGS approved the DPP on December 5, 1980. In May 1981, the CCC issued a Coastal Development Permit for the onshore and nearshore portions of the project, which included installation of two pipelines in state waters and lands.

Unocal installed Platform Gina on December 11, 1980. The pipelines, a 10¾-inch oil line and a 6⅝-inch water return line, were installed in September 1981. The platform has 15 well slots which are currently allocated as follows: 6 oil wells, 5 water injection wells, 1 exploration well (H-14), and 3 unused slots.

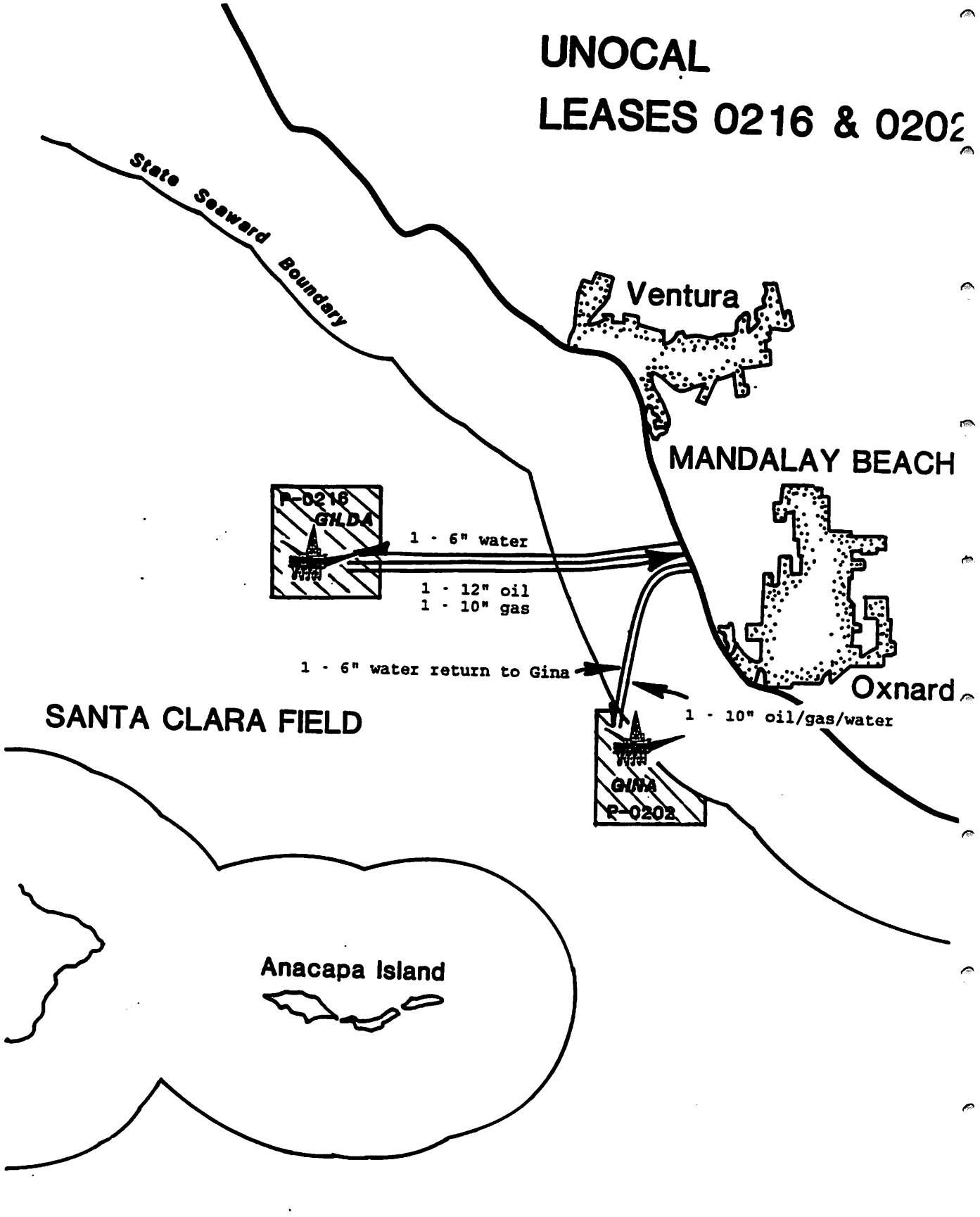
UNOCAL
LEASES 0216 & 0202
State Seaward Boundary
Ventura
MANDALAY BEACH
P-0216
GILDA
1 - 6" water
1 - 12" oil
1 - 10" gas
1 - 6" water return to Gina
Oxnard
1 - 10" oil/gas/water
SANTA CLARA FIELD
GINA
P-0202
Anacapa Island

Figure 1.2-1

Production from Platform Gina commenced in February 1982. All production is currently carried through the 10¾-inch pipeline to the Mandalay onshore facility, where it is separated and treated. Production is predominately oil and water, with some sweet gas production. Originally, produced water was returned for disposal to Platform Gina through the 6⅝-inch water return line. In 1988, a leak was discovered in the water return line near the Mandalay facility and the line was put out of service. Since then, produced water has been discharged at Platform Gilda, under Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) permit conditions.

Two exploratory wells were drilled from Platform Gina in 1988. The first one, Well H-13, was drilled and tested in the Monterey Zone but has been plugged and abandoned as a dry hole. The second well, Well H-14, is currently completed and producing a small amount of sweet gas in the Sespe Zone that underlies the Monterey Zone. This gas is being shipped to the onshore Mandalay facility through the 10¾-inch pipeline. The Monterey Zone is potentially productive, based on analysis of information gained during the drilling process.

Unocal initially submitted a DPP Revision to the MMS in May 1990. The DPP Revision was deemed submitted on September 23, 1991. Unocal plans to commence the project in February 1992 (Unocal, 1990). Unocal proposes to recomplete and test Well H-14 in the Monterey Formation. If the well is productive, Unocal plans to further develop the Point Hueneme field by drilling up to seven wells into the Sespe and Monterey Formations. Gas production from the Monterey Formation is expected to be sour, so that gas sweetening facilities are planned on the platform.

In the Platform Gina DPP revisions, Unocal uses the term "West Hueneme Field" to describe the southwestern position of the geologic structure bounded by the Hueneme Fault to the southeast. In Unocal's terminology, the northeastern portion of the structure, where Platform Gina is located, is the "Point Hueneme Field." The MMS considers the entire structure to be the Point Hueneme Field, and it has been designated as such by the MMS Pacific OCS Region Field Names Committee. MMS has not accepted the designation of the "West Hueneme Field" as a field name.

On January 14, 1992, the CCC concurred with Unocal's consistency certification for the platform modification and pipeline conversion activities at Platform Gina.

2.0 Description of the Proposed Action

For ease of understanding, Unocal's Revised DPP for Platform Gina has been divided (by the MMS) into two phases. Unocal's time line (Table 2.1-1) for the proposed Point Hueneme Field project (Unocal, 1990) is as follows:

I. Repair the 6⅝-inch pipeline and convert it to gas service, install temporary gas sweetening facilities, install H_2S monitoring equipment and test and produce Well H-14.

II. Install permanent gas processing facilities, construct additional well slots, expand deck space, drill up to 7 additional wells, and recomplete 2 existing wells in the Monterey Formation.

Phase I:

Phase I would begin with the repair of the 6⅝-inch pipeline by replacing 3,000-ft section of the pipeline in the nearshore and onshore sections of the line. The repair procedures would take approximately three weeks to complete. Unocal proposes to commence this work during the first week of February 1992.

An offshore diver/pulling vessel, the George M, is proposed to be used for the repair work. The vessel is equipped with a four-point mooring system. Anchors would be set in two predetermined locations. One location is needed to do the subsea work of connecting the pipeline at the tie-in location; the other is a pull location, to allow the vessel to pull the pipeline out to sea. Movement of the vessel is accomplished by means of anchor cables and winches. The anchors would be set by the proposed anchor handling vessel, the M/V Coronado. Using the anchor handling vessel to deploy and retrieve the anchors would eliminate the risk of dragging an anchor over the sea floor.

To replace the pipe section, the pipeline would be cut in the nearshore area about 2,300 ft from the Mean High Tide Line (MHTL). A subsea connector and a pipe flange with an attached blind flange would be installed on the existing pipe coming from Platform Gina. The replaced section of pipe would be filled with cement and abandoned in place, except for the 700-ft onshore section of pipe that would be removed. The abandonment of the offshore section, in place, is contingent upon California Coastal Commission Coastal Development Permit approval.

Unocal would weld 2,700 ft of the replacement pipe together at a staging area on the beach. The pipe would be pulled from the onshore fabrication area to the offshore tie-in location in a continuous manner by the pulling vessel, stopping only for connection of individual strings. The pull would be achieved by

the use of both a pulling winch mounted on the support vessel and the vessel's mooring anchors.

Table 2.1-1 DPP time line for the West Hueneme Field (Unocal, 1990).

Phase	Month	Action
I	0	Obtain permit to repair pipeline.
	1	Mobilize construction equipment to repair line.
	2	Repair pipeline.
		Mobilize rig on Platform Gina.
	3	Test and complete Well H-14 in Monterey.
		Install temporary facilities to sweeten gas on Platform Gina.
	4	Place Well H-14 on production at estimated 3 MMcfd rate.
	5	Evaluate Well H-14 performance.
II	6	Initiate permanent facility design.
	8	Formalize cantilever size for additional processing equipment.
	9	Begin third-party verification for cantilever design and slot addition.
	10	Submit structural modifications to MMS.
	11	Finalize permanent sweetening facility design.
	12	Complete specifications for permanent sweetening facility.
	13	Issue bid packages for facility.
	14	Order equipment for permanent facility.
	20-22	Install permanent sweetening facility.
	22	Mobilize drilling rig.
	23-25	Drill Well 1.
	26-28	Drill Well 4.
	29-31	Drill Well 7.
	32-44	Monitor Monterey performance from Wells H-14, 1, 4, and 7.
	45-47	Drill Well 2.
	48-50	Drill Well 6.
	51-53	Drill Well 5.
	54-56	Drill Well 3.
	57	Recomplete Well H-9 in Monterey.
	58	Recomplete Well H-10 in Monterey.
	?	Recomplete Wells H-14, 1, 4, and 6 in Sespe when Monterey is depleted in each individual well.

Once the pipe has been pulled above its touchdown point, it would be lowered onto the seafloor. A spool piece would be installed between the replacement pipe and the subsea connector at the seafloor.

The 700-ft section of abandoned pipe onshore would be removed and the new pipe would be installed in its location within the right-of-way. The 400-ft section of replacement pipe remaining on the beach from the pipeline pull would be run in the same location as the removed onshore section of the old pipe. The remaining 300-ft section of the replacement pipe would be welded together at the Mandalay facility, and then pulled through the 10-inch conduit that runs underneath the sand dune, preventing any alteration of the dune area.

The onshore section of pipe would be buried mechanically with conventional equipment. The surf zone and offshore burial would be accomplished by conventional equipment as far as practical. The remaining pipeline would bury itself by natural wave energy. In the event that natural conditions should fail to bury the new pipeline section to a depth of 2 ft from Mean Lower Low Water (MLLW) to 15 ft below MLLW within 2 years, a State Lands Commission (SLC) and CCC condition would require Unocal to bury the pipeline by hydraulic jetting to 3 ft below the sand bottom found within this area (CCC, 1991; SLC, 1991).

Once the pipeline repair is completed, the pipeline would be converted to gas service.

Unocal previously installed a 23-ft x 40-ft production deck extension on the west side of Platform Gina. This deck would be used to provide room for temporary hydrogen sulfide (H_2S) removal equipment, and would also be available for some of the permanent facilities. All temporary equipment would be transported to the platform using existing crew boats. An existing mooring buoy would be used for boat mooring when transferring material from boats to the platform. Thus, anchoring would not occur at the platform. Construction would take place on Platform Gina, and no barges would be used.

Unocal plans to recomplete Well H-14 in the Monterey Zone by temporarily abandoning the Sespe completion. Drill stem tests would be performed prior to running the completion tubing string to evaluate the productivity of each zone. Initial production of Monterey gas from Well H-14 would be through the converted pipeline using the temporary gas-sweetening facilities mentioned above.

Phase II:

Once the productivity of the Monterey Zone is confirmed to be successful, the project would continue into Phase II. In this

phase, the maximum buildout necessary to develop the Point Hueneme field is considered for the purposes of this EA. Unocal has indicated that permanent facility design would be completed after well test results are obtained; MMS would conduct further review of the design at that time.

To accommodate permanent gas sweetening equipment, and extension of the production deck on the west side would be required. Unocal also proposes to install a deck extension on the south side of the platform.

All permanent equipment would be transported to the platform using existing crew boats. An existing mooring buoy would be used for boat mooring when transferring material from boats to the platform. Thus, anchoring would not occur at the platform. Construction would take place on Platform Gina, and no barges would be used.

The equipment used to produce, process, and ship the gas would all be electric. All drilling would be performed by an all-electric drilling rig, as is currently done. The number of personnel and transportation requirements would remain the same. Thus, no new sources of air emissions would be directly related to these operations. Any residual waste or "tail gas" generated by the gas sweetening process would be burned using a flare. The flare would also be used to dispose of gas generated by well testing and by upset conditions. Revisions and additions would be required to handle the electrical loads of the additional equipment. A new powerhouse is proposed for this additional electrical equipment.

The federal Clean Air Act Amendments of 1990 mandate that air pollution control requirements for offshore sources within 25 miles of the state/federal boundary off California be the same as the requirements that would apply if the source were located onshore. The Act requires that EPA establish these requirements and that they become effective on November 15, 1991, for new or modified sources such as the proposed modifications to Platform Gina. During our consultation with the Ventura County Air Pollution Control District (APCD), the APCD outlined measures to make Unocal's project conform with Ventura County's onshore air quality rules. These requirements would be included in any permit issued by the MMS for Unocal's proposed project. Unocal has agreed to install Best Available Control Technology (BACT) in accordance with APCD Rule 26 on all new and modified gas processing equipment. The APCD will conduct a BACT determination once Unocal finalizes its plans for permanent gas sweetening equipment, in coordination with the MMS.

3.0 Description of Affected Environment and Impacts

The affected environment of Unocal's proposed project area is discussed in detail in the EIR/EA (City of Oxnard and USGS, 1980). That information is incorporated herein by reference. Additional information on the affected environment in this EA is provided to supplement and/or update the above EIR/EA.

Section 3 evaluates the additional impacts expected to occur as a result of the proposed revised action. Impacts are generally expected to be temporary and minor, and will be reduced to insignificance through implementation of the mitigation measures discussed in Section 4.

3.1 Geology

3.1.1 Affected Environment

Descriptions of the regional and site-specific geology of Unocal's proposed project area have been presented in numerous environmental analyses and documents (City of Oxnard and USGS, 1980; City of Oxnard, 1990). In addition several surveys for geological hazards and cultural resources have been conducted in the project area along the proposed pipeline corridor and within the area of Platform Gina (McClelland Engineers, 1979; Dames & Moore, 1980).

The seafloor in the project area has been characterized as being exclusively soft bottom. The bottom consists of a rippled hard packed sand in the inshore area which grades to a less rippled sandy-silt substrate offshore.

The onshore geomorphology within the project site consists of a wide fairly flat intertidal beach area grading into a gently sloping foreshore area and terminating with a narrow row of tall dunes in the backshore area. The entire beach is composed of typical quartz beach sands and sediments. The sands and sediments are compacted in the intertidal beach area and become progressively less compacted in the foreshore area. The sand dunes in the backshore area have been naturally vegetated (to various degrees) and thus are fairly stable.

3.1.2 Geologic Impacts

The significance criteria for geological impacts in this EA are the same as those discussed in the original project EIR/EA (City of Oxnard and USGS, 1980). Impacts on the geologic environment from the proposed DPP revision would be considered significant if:

- known mineral resources could be destroyed or rendered inaccessible;

- geologic processes, such as landsliding or erosion, could be triggered or accelerated; and

- substantial alteration of topography could occur.

The currently proposed project calls for the replacement of about 3,000 ft of pipeline between Platform Gina and Unocal's Mandalay facility. The new section of pipeline is to be tied into the pre-existing pipeline at a point about 1,360 ft directly offshore and about 2,300 ft southwest of Unocal's Mandalay facility. The new section of pipeline would be positioned within the previously approved pipeline corridor.

Impacts on marine geology could occur at the offshore tie-in point, where approximately 40 ft of the old pipeline would be excavated to facilitate installation of the new pipeline section. Anchoring operations at eight offshore sites may also impact soft bottom areas. Marine geologic impacts could also occur within the surf zone should hydraulic jetting of bottom sediments be required to facilitate burial of the new pipeline. Potential impacts on offshore outcrops (hard substrate areas) are not expected due to the absence of hard substrate in the area.

Due to the soft substrate seafloor within the project area, coupled with the implementation of Unocal's Anchoring Mitigation procedures (Section 4.2.1) and the limited duration and extent of the project, impacts on the marine geologic environment resulting from the proposed project are expected to be insignificant.

Possible impacts on the onshore geology could arise from the use of approximately 145,000 ft^2 of the foreshore area for pipeline fabrication and deployment. Additional impacts on approximately 1,900 linear ft of foreshore running from Fifth Street (in the southeast) to the staging area in front of Unocal's Mandalay facility are possible resulting from equipment access to the fabrication and deployment area. Intertidal beach and foreshore areas may be affected by trenching of about 600 linear ft to facilitate burial of the replacement pipeline.

Effects on onshore geology are also expected to be insignificant due to the short duration of the proposed project and Unocal's implementation of their onshore mitigation plan (Section 4.2.1).

Cumulative impacts on the geologic environment as a result of the proposed project are expected to be insignificant due to the infrequency and wide distribution of construction projects in this area.

No additional potentially significant geologic impacts were identified in the project area. Therefore, impacts on the geologic environment due to the proposed DPP revision are expected to be insignificant.

3.2 Air Quality

3.2.1 Affected Environment

The coastal areas in the vicinity of the proposed project are in a nonattainment area for ozone. In 1989, the federal ozone standard of 0.12 parts per million (ppm) was exceeded on 2 days in El Rio and Ventura, on 5 days in Ojai, and on 40 days in Simi Valley. The last decade appears to have shown a slight downward trend in ozone concentrations and the number of days of violations [Ventura County Air Pollution Control District (APCD), 1991]. Nevertheless, in Ventura County, the ozone nonattainment problem is classified as "severe."

Measured concentrations of nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and carbon monoxide (CO) are well within the federal and State of California ambient standards. Concentrations of PM-10 [particulate matter less than 10 microns (μ) in diameter] exceed state ambient standards. The highest 24-hr average PM-10 concentration in Ventura in 1989 was 66 $\mu g/m^3$, and the annual geometric mean was 32.6 $\mu g/m^3$. The California PM-10 standard is 50 $\mu g/m^3$ for the maximum 24-hr average and 30 $\mu g/m^3$ for the annual geometric mean.

During the pipeline repair activities, air emissions would result from the operation of working vessels, transportation vessels, power generators, and onshore equipment such as side booms, backhoes, and welding machines. These emissions would consist of reactive hydrocarbons (RHC), nitrogen oxides (NO_x), SO_2, CO, and PM. Activities would be spread over about 11 working days. Emissions would also result from equipment and support vessels needed in the construction of the temporary and permanent gas processing equipment. Total emissions from the pipeline repair and installation of the temporary and permanent gas sweetening facilities are presented in Table 3.2.1-1.

Table 3.2.1-1. Emissions associated with construction activities.[a]

Pollutant	Emissions (tons)
RHC	0.32
NO_x	3.73
SO_2	0.25
CO	2.47
PM	0.27

[a]Emissions obtained from EnerSource Engineering (1991)

During the production phase there would be air emissions resulting from flaring. Flaring would occur during normal operations (including operation of the pilot flare) and well testing. Unocal plans to install a 2-stage sulfur recovery system with a combined sulfur removal efficiency of 98.5 percent. The final design of the sulfur recovery system would not be known until the Ventura APCD conducts a best available control technology (BACT) analysis. If the Ventura APCD requires emission controls more stringent than the ones proposed, emissions would be lower than those presented here.

During the peak production year, Unocal anticipates that flaring, excluding flaring associated with well testing, would not exceed 180 Mcf/day, which is 1 percent of the total production in the peak production year. Volume of gas flared during well testing was estimated at 3,000 Mcf/day for a maximum of 6 days. The emission factors used in calculating flaring emissions are presented in Table 3.2.1-2 The SO_2 emission factor is based on the assumption that the sulfur recovery system would reduce the H_2S content from 2,000 ppm (the assumed maximum sulfur content of the gas produced from the wells) to about 30 ppm. During the well testing, Unocal plans to use batch sweeteners that would result in a maximum H_2S of 300 ppm for the flared gas. The emission factor for the SO_2 would then be 53.6 lb/MMcf. In case of failure of the gas sweetener during well testing, the SO_2 emission factor could be as high as 357 lb/MMcf.

Table 3.2.1-2. Emission factors for calculating emissions from flaring.[a]

Pollutant	Emission Factor (lb/MMcf)
RHC	144
NO_x	72
SO2[b]	5.4
CO	40
PM	3

[a]Emission factors from "Emission Factors and Calculation Procedures" published by the Ventura APCD.
[b]The SO_2 emission factor is 53.6 lb/MMcf during well testing and 357 lb/MMcf during upset conditions.

Unocal did not present any information on expected emissions from the sulfur recovery system. It is assumed in this analysis that the residual H_2S from the sulfur recovery system would be conducted to the flare. The volume of the additional gas flared was estimated according to a method developed by Jacobs Engineering Group (1989) (Tables 3.2.1-3 and 3.2.1-4).

Table 3.2.1-3. Estimated annual emissions (tons/yr) from Platform Gina gas production in the peak production year.

Pollutant	Normal Flare	Well Testing	Total
RHC	5.85	1.30	7.15
NO_x	2.92	0.65	5.93
SO_2	17.69	0.05	17.94
CO	1.62	0.36	1.98
PM	0.12	0.03	0.15

Table 3.2.1-4 Estimated peak hourly emissions (lb/hr) from Platform Gina during well testing.

Pollutant	Normal Conditions	Upset Conditions
RHC	18.0	18.0
NO_x	9.0	9.0
SO_2	6.7	44.6
CO	5.0	5.0
PM	0.38	0.38

3.2.2 Air Quality Impact Analysis

Unocal's adherence to agreed-upon air quality mitigating measures (Section 4.2.2) should result in no significant air quality impacts from the pipeline repair activities. The construction activities are of short duration and air pollutant concentrations that result would be highly localized and are expected to be well within federal and state ambient air quality standards.

For the production phase, a screening analysis was performed using the Offshore & Coastal Dispersion (OCD) model version 4. The maximum 1-hr and 24-hr average pollutant concentrations resulting from well testing are presented in Tables 3.2.1-5 and 3.2.1-6. The 24-hr average concentrations were obtained by multiplying the 1-hr average values by 0.24, according to inert screening analysis practices [California Air Resources Board (CARB), 1985]. SO_2 concentrations are given for both normal and upset conditions.

Table 3.2.1-5. Predicted maximum 1-hr average pollutant concentrations ($\mu g/m^3$) for well testing.

Pollutant	Normal Concentration	Upset Concentration	Federal AAQS[a]	State AAQS
NO_2	2.2	2.2	---	470
SO_2	1.6	10.9	---	655
CO	1.2	1.2	40,000	20,000
PM	0.1	0.1	---	---

[a]AAQS = ambient air quality standard.

Predicted concentrations are well below the PSD increments or the ambient air quality standards. Annual average pollutant concentrations would be considerably lower and well within applicable PSD increments and ambient air quality standards.

Emissions of NO_x and RHC have the potential to contribute to ozone concentrations during certain meteorological conditions. Since Ventura County is nonattainment for ozone, the Ventura APCD Rule 26 requires that there be no net increase in emissions of these pollutants. Unocal would therefore have to obtain offsets for the RHC and NO_x emissions. There would then be no impacts on ozone concentrations.

Table 3.2.1-6. Predicted maximum 24-hr average pollutant concentrations ($\mu g/m^3$) for well testing.

Pollutant	Normal Conc.	Upset Conc.	PSD[a] Inc.	Federal AAQS	State AAQS
NO_2	0.5	0.5	---	---	---
SO_2	0.4	2.6	91	365	191
CO	0.3	0.3	---	---	---
PM	0.0	0.0	37[b]	50[c]	150[c]

[a]Prevention of Significant Deterioration Class II increment.
[b]Measured as total suspended particulates.
[c]Measured as PM-10 (particles <10 μ diameter).

Air quality impacts from the proposed project are expected to be insignificant.

Analysis of cumulative air quality impacts considers the combined impacts from the proposed project, existing operations on Platform Gina, and all other emission sources in the area. Air

emissions from existing activities on Platform Gina are very small since the main power requirements are provided by an electric cable connected to the power grid onshore. The only emission sources consist of a crane and emergency power generators. Hydrocarbon emissions result from sporadic venting episodes and fugitive hydrocarbon emissions. Total platform emissions for the year 1990 for RHC, NO_x, SO_2, CO, and PM were 102, 0.7, 0.05, 0.2, and 0.05 tons. The relatively high emission of RHC was attributed to an unusually high amount of venting in that year. It is expected that venting would be reduced considerably once gas production starts. Emissions for the other pollutants are considerably lower than those predicted for the proposed project. Cumulative effects from all platform activities are therefore insignificant.

Ambient concentrations of NO_2, SO_2, and CO from all onshore and offshore emission sources would be well within the federal and state standards. Concentrations of PM-10 do exceed the state standard; however, the contribution from OCS activities is insignificant. Ozone concentrations due to onshore and offshore emission sources do exceed the federal standards; however, because of the Ventura APCD offset requirements, emissions from Platform Gina would not result in any increase in ozone levels.

3.3 Marine Water Quality

3.3.1 Affected Environment

3.3.1.1 Physical Oceanography

The physical oceanography of the Santa Barbara Channel has been described in several reports, including City of Oxnard and USGS (1980), MMS (1983), and Dynalysis of Princeton (1987). The major circulation features in the area of Platform Gina are offshoots of the California Current and the Southern California Countercurrent. Portions of these wind-driven features are directed into the Santa Barbara Channel through interactions with the coastal geography resulting in an extremely complex system of eddies and gyres. Additional varying degrees of interaction with other currents, bottom irregularities, and the offshore islands contribute to this complexity.

Current speeds and directions in the vicinity of Platform Gina have been directly measured in at least two studies (City of Oxnard and USGS, 1980; Dynalysis of Princeton, 1987). Drift card studies conducted by Kolpack (1971) indicated that there is a strong, well-developed northwestwardly flowing surface current between Anacapa Island and Port Hueneme. Surface-to-bottom current profiles taken by Dames & Moore (1977) indicate that this northwestwardly flow continues to the bottom, becoming slightly more westerly with depth. Current speeds averaged about 25

cm/sec [0.5 knot (kt)] but occasionally approached 100 cm/sec (2 kt).

One of the current meter moorings used during the MMS-sponsored Dynalysis of Princeton (1987) study was located within 2 miles of Platform Gina in 27 m (87 ft) of water and collected data during January-May and July-mid-November 1984. The direction of the measured currents was overwhelmingly to the west and northwest [the current meter was moored at 21 m (about 65 ft)] at speeds of up to 50 cm/sec (1 kt). These data agree closely with those collected by Dames & Moore (1977) for the general area of Platform Gina, which shows that the general current direction is constant throughout the water column (i.e., surface to bottom). The current direction occasionally reversed to a southeasterly direction during wind forcing events such as Santa Ana winds or storms. These reversals lasted no more than 2 days and exhibited speeds of less than 25 cm/sec (0.5 kt). One of these reversals may have occurred during the small (approximately 50 bbl) oil spill from a pipeline break at Platform Gina in May 1991. The oil from the broken pipeline drifted southeastward, never contacting land (which allowed much of the oil to be cleaned up).

3.3.1.2 Water Quality

Marine water quality in the area of Platform Gina has been fully described in City of Oxnard and USGS (1980) and MMS (1983). The commonly measured chemical oceanographic parameters such as temperature, salinity, dissolved oxygen, hydrogen ion concentration (pH), transparency, and nutrients all fall within recognized ranges of natural variability.

The major sources of marine pollution in the Santa Barbara Channel are municipal effluent discharges and river runoff (MMS, 1983). The nearest municipal discharge to the proposed project activities is from the City of Oxnard. This discharge is of moderate size -- about 17 million gallons per day (mgd) during 1988, the latest year such published data are available [Southern California Coastal Water Research Project (SCCWRP), 1989]. Specific components (concentrations and mass emissions of metals, hydrocarbons, synthetic organics, etc.) can be found in SCCWRP (1989), and comparisons with previous years can be made by examining other annual reports published by SCCWRP.

River runoff could contribute various natural and man-made pollutants ranging from suspended sediments to pesticides. River runoff is difficult to quantify and is highly variable due to its dependence on the amount of precipitation. The Santa Clara and Ventura Rivers, as well as Calleguas Creek, which drains into Mugu Lagoon, are the major sources of terrestrial material in the eastern Santa Barbara Channel. All three waterways can discharge large amounts of sediment into the Channel if sufficient rainfall has occurred, and all drain large agricultural areas. However,

according to Water Resources Board (1990), these three waterways are relatively clean. The Ventura River had elevated levels of lead, whereas the waters of Calleguas Creek contained high levels of various chlorinated hydrocarbons related to agricultural activities. The Ventura River did not have elevated levels of any toxic substance.

Trace metal samples were collected by Dames & Moore in 1979 (City of Oxnard and USGS, 1980). The samples were analyzed for zinc, nickel, lead, copper, cadmium and barium. The results indicated that the trace metal levels in the ocean waters surrounding Platform Gina were similar to other samples taken in the vicinity and were lower than average values taken in the nearshore waters of the Southern California Bight as a whole.

Differences between selected trace metal values for samples taken in 1977 in the Southern California Bight and in 1979 by Dames & Moore, compared with values from the waste water effluent from the Oxnard waste water treatment plant (WWTP), suggest that the Santa Barbara Channel is generally uncontaminated, and that water quality has apparently improved during the 1970s and 1980s (Table 3.3.1-1).

3.3.2 Marine Water Quality Impacts

The significance criteria used in the impact analysis of marine water quality are based on the limitations found in Unocal's NPDES permit issued by the EPA. The sources of potential impacts on the water quality in the vicinity of Platform Gina due to the proposed construction and drilling activity include the following:

- discharges of drilling muds and cuttings;
- discharges of hydrotest fluid during the testing of the integrity of the pipeline;
- increased produced water discharges at Platform Gilda due to the rerouting of that waste stream from Platform Gina;
- accidental spills of elemental sulfur from the gas sweetening unit (while transporting the sulfur to shore);
- accidental spills of hydrogen sulfide (H_2S) gas sweetening chemicals;
- accidental oil spills from the oil emulsion pipeline (due to puncture during construction activities); and
- accidents resulting in a loss of well control and a blowout.

Table 3.3.1-1. Comparisons of trace metal values from selected sources (all values in ppm).

Metal	Dames & Moore[a]	BLM[b]	Oxnard WWTP 1983[c]	Oxnard WWTP 1988[d]
Barium	<2	70	---	---
Cadmium	0.06	5.2	0.011	0.007
Copper	0.13	<9.7	0.013	0.032
Lead	1.30	8.3	0.020	0.011
Nickel	0.25	<16	0.044	0.023
Zinc	0.06	32.0	0.017	0.035

[a]Dames & Moore (1977)
[b]City of Oxnard and USGS (1979)
[c]SCCWRP (1983)
[d]SCCWRP (1989)

Discharges of drilling muds and cuttings. The fate of drilling muds discharged into the marine environment has been thoroughly studied. The National Research Council (NRC, 1983) and Boesch and Rabalias (1985) provide excellent, peer-reviewed syntheses of available scientific information.

Drill cuttings are sediment and rock fragments that are removed from a well during drilling. Because of their relatively large particle size and density (1 mm to 1 cm; 1.9 gm/cm^3), cuttings tend to sink to the sea floor rapidly after discharge (NRC, 1983). As the cuttings fall to the bottom, the primary effect on water quality would be increased turbidity caused by the cuttings themselves as well as by some drilling muds that may adhere to the cuttings. Cuttings would also fall more vertically in the water column than the drilling muds, forming a pile slightly down current but close to the discharge point, and burying organisms that may be inhabiting the sea floor in the area.

Drilling muds consist of much finer particles than drill cuttings. The three primary components of muds are water (fresh or salt), clay (bentonite, attapulgite, and/or others), and barium sulfate. There may be other additives that help the drilling operator maintain control of the well and prevent loss of fluid to the formation. The turbidity from this effluent near the platform discharge point may interfere with feeding activities of zooplankton.

As indicated in Section 3.3.1.1, the currents in the vicinity of Platform Gina are predominantly to the west or northwest everywhere in the water column, and are usually moving at speeds of about 25 cm/sec (0.5 kt). Considering the depth of water [30

m (95 ft)] and the slow current speeds, the drilling mud plume should reach the bottom quickly and spread out down current. The plume should thus spend very little time in the water column and cause little impact on planktonic organisms. Impacts on plankton would be a short-term, and thus insignificant, since the plankton would eventually drift out of the steadily dispersing plume.

The drilling mud plume would contain the greater amount of finer particulates, many of which would remain in the water column for a much greater distance than the cuttings. This distance has been documented in at least one case to be three kilometers or greater (Jenkins et al., 1988). Even considering the greater distance over which a planktonic organism might be affected by a drilling mud plume, an insignificant impact is still anticipated.

The presence of heavy metals in drilling discharges has been well-documented in various scientific investigations (Boesch and Rabalias, 1985; NRC, 1983). However, barium is the only metal that is used as an additive (as a weighting agent to retain well control when the drill bit enters zones of high pressure); other metals (e.g., cadmium and mercury) are impurities that do not constitute a significant proportion of drilling fluid ingredients. To date, no impacts on the water quality from drilling mud-associated heavy metals have been documented.

Other effects that discharged muds may have on water quality are changes in pH due to the addition of caustic soda (a very alkaline material) and the inclusion of some hydrocarbons if the muds were circulated through an oil-bearing strata and then discharged. The pH change would be rapidly diluted to ambient levels (within 100 m, according to best scientific judgment). Unocal must conduct the EPA-required sheen test on drilling fluids prior to discharge to determine if there is visible oil in the muds. If there is oil, the muds would be contained within lined and sealed receptacles and taken to shore for disposal at an approved dump site. All effluents are regulated by EPA's NPDES program, and Unocal would meet these limitations during this project (Section 4.2.3).

Discharges of hydrotest fluid. The discharge of hydrotest fluid would occur after the pipeline is tested at 900 pounds per square inch (psi) for at least 8 hours. The primary component of the test fluid is chemically treated produced water. Approximately 69,863 gal (1,663 bbl) of seawater would be discharged once the test is completed. The test fluid may contain traces of oil, grease, and trace metals from lubricants and pipe coatings. In addition, five chemicals would be added to the hydrotest fluid. These chemicals and their concentrations are: an oxygen scavenger (25 ppm), a biocide (45 ppm), a dispersant (3 ppm), a polymer (1 ppm), and a corrosion inhibitor (90 ppm). Table 3.3.2.1 gives the actual ingredients and their concentrations contained in each chemical material.

The chemicals in Table 3.3.2-1 are identical to those Unocal used during the repair of the oil emulsion line damaged by a grapple in 1991. It is unknown what the precise affects on the marine environment would be if these chemical were spilled into the sea in an undiluted form. However, the highest concentration of any of the materials listed in Table 3.3.2-1 is 90 ppm (for the corrosion inhibitor). Since the total volume of hydrotest fluid is about 43,527 × (11,500 gal), the total amount of corrosion inhibitor that would be used in this application is 3.9 × (1 gal). Conversely, 1 ppm of polymer is anticipated to be used during this test. The amount of polymer to be mixed into the hydrotest fluid would be 40 ml (0.01 gal). When the hydrotest fluid is discharged, these chemicals would be well mixed within the fluid and would become much more diluted when it is discharged into the sea. The discharge point would be at 49 m (160 ft) water depth from Platform Gilda, which lies in 62 m (205 ft) water depth. The chemicals within the hydrotest fluid would thus be well mixed and diluted rapidly upon discharge. This discharge would also meet the limitations set in the NPDES permit issued by EPA Region IX (Section 4.2.3).

Increased produced water discharges at Platform Gilda. Produced water discharges at Platform Gilda have increased since the water return line to Platform Gina was shutdown due to a leak. The rerouting of this waste stream occurred in 1988 and since then, Platform Gina has used chemically treated seawater to inject into the producing formation to enhance recovery of oil and gas. Only oil/water emulsion has been shipped from Platform Gina to the Mandalay processing plant since the return water line was shutdown. The water separation process has been conducted at Mandalay and the resulting produced water has been sent back to Platform Gilda where it has been discharged. Since there is presently no produced water discharge located at Platform Gina, there is no environmental impact from that effluent.

Produced water from the seven gas wells that will be drilled at Platform Gina will be added to the oil shipping line and processed at Mandalay with the rest of the crude oil emulsion produced from Gina's oil wells, and eventually discharged at Platform Gilda. It is unknown at this time how much water will be produced from these wells; however, it is anticipated to be a small fraction of the produced water currently being discharged at Platform Gilda.

The current amount of produced water being discharged at Platform Gilda is 9,200 bbl/day. The amount of water that was being produced at Platform Gina prior to the shutdown of the water return line was 5,800 bbl/day. Thus, about 3,400 bbl/day were added to Gilda's produced water discharge. Current regulations state that EPA's NPDES permit limitations control the amounts of pollution contained in the various effluents emanating from OCS platforms. These limitations focus on controlling the amounts of

components carried in the produced water as opposed to the volume of the stream itself. As long as such pollutants as oil and grease, metals and various light-end hydrocarbons are below certain levels on both a daily and monthly basis, no violation of the NPDES permit would occur. Thus, an increase in volume at a particular discharge point would not cause a violation of the NPDES permit.

Table 3.3.2-1. Actual ingredients and their concentrations contained in each chemical material added to hydrotest fluid.[a]

Oxygen scavenger	Water Ammonium bisulfite	60- 40+
Biocide	Water Dimethylformamide Isopropanol 1-(2-hydroxyethyl)-2-methyl-5-nitroimidazole	49+ 1-10 20-40 0.1-1
Dispersant	Water Ethoxylated nonylphenol Methanol	25+ 40-70 1-5
Polymer	Water Ethylene glycol Hydrotreated light distillates Ammonium chloride	45+ 5-10 20-40 1-5
Corrosion inhibitor	Water Arylsulfonic acid Fatty imidazoline quaternary Isopropanol	25+ 1-5 20-40 5-10

[a]Source: Material Safety Data Sheets provided to Unocal by Nalco Chemical Company.

The fact that NPDES limitations are not violated does not mean that there is no impact. A study conducted by researchers at the University of California at Santa Barbara (UCSB) on the effects of a produced water discharge located in nearshore water at Carpinteria has produced preliminary data indicating that red abalone larvae (Haliotis rufescens) may be affected by the water-soluble components of produced waters at distances up to 1,000 m, the greatest distance used in the study (pers. comm., Peter Raimondi, Marine Science Institute, UCSB, December 23, 1991). These results, although preliminary, raise valid concerns regarding effects of produced waters on water quality and, subsequently, marine organisms.

Mr Raimondi pointed out that red abalone larvae swim to the surface and drift with the currents that flow mostly along and

close to shore. Since the Carpinteria outfall is shore-based and located in about 10-12 m of water, the effluent can be mixed to the surface layer where the larvae may contact it. At Platform Gilda, the platform is in 64 m water depth and the discharge pipe end is located 51 m below the sea surface. Since abalone larvae occur primarily close to shore at shallow depths, they would not be expected to be abundant in the waters around Platform Gilda's discharge pipe. Thus, the increase in the volume of the produced water discharge would not impact the abalone population significantly.

Populations of abalone and other marine organisms are affected by many other impacting agents (i.e., natural environmental changes, ecological interactions, sport and commercial fishing). Considerably more research is required to quantify the contribution of produced water to total mortality of various species.

In terms of this project, the addition of Platform Gina's produced water (from the oil emulsion line when the water return line to Platform Gina was shut down) to Platform Gilda may have slightly worsened an impact that may have already existed at Platform Gilda. The small additional amount of water that would be produced from the gas wells is not anticipated to cause any impact beyond that which may be already occurring (at Platform Gilda). Thus, since the water quality at Platform Gilda may already be affected by the discharge combined produced water (from the current oil production) of Platforms Gilda and Gina, the small additional increment from the gas wells scheduled to be drilled at Platform Gina would not constitute a significant impact. This discharge would also meet the limitations set in the NPDES permit issued by EPA Region IX (Section 4.2.3).

Accidental spills of elemental sulfur. Unocal has proposed to conduct gas sweetening (removal of H_2S) on Platform Gina. This process may result in the production of up to two long tons (2,240 lb) of elemental sulfur per day. Sulfur would be transported in sealed containers to shore, pumped into trucks and transported to Unocal's Los Angeles refinery.

Accidents could occur that result in sulfur being spilled into the sea (e.g., if a collision occurs between a transport vessel and another vessel during loading, unloading, or during transport). Once the sulfur contacts sea water, chemical changes may occur that may affect water quality and marine organisms.

Unocal would be transporting this material in a molten form, at a temperature of over 350°F, in DOT-approved insulated, sealed containers (Section 4.2.3). If a tank were accidentally ruptured and the sulfur contacted seawater, it would rapidly solidify, form clumps, and sink to the seafloor where it would become very inert. Over the course of many years, it would oxidize to sulfur

dioxide, which is soluble in seawater, and the material would disperse at a very slow rate (pers. comm., Pat Bird, Freeport McMoRan Research and Engineering Co., January 9, 1992). No environmental impact would occur due to these chemical activities.

Accidental spills of H_2S gas sweetening chemicals. As noted above, Unocal plans to conduct gas sweetening on Platform Gina. Various chemicals are used in this process, and spills from the platform or during loading, unloading, or transport could affect water quality.

The chemicals and their concentrations used to sweeten the gas are potentially an iron oxide in an inert carrier, the composition of which is proprietary, an amine complex, and a sodium carbonate/bicarbonate mixture. (There are three possibilities because Unocal has yet to make a determination as to which gas sweetening chemicals would be most economic and efficient for this project.) None of these chemical complexes is considered to be environmentally harmful. Each has been tested for toxicity by the manufacturers (although not necessarily in seawater using endemic species) using standard, acceptable methods (Note: the iron oxide compound, manufactured by SulfaTreat, is currently undergoing testing in seawater using California Ocean Plan protocols). The iron oxide compound is contained within an inert carrier. Neither material is reactive with seawater. The amine compound is nitrogen-based and is soluble in seawater. If a spill of this material occurred, it would dissolve, disperse, and provide nutrients for plant growth. Excess nutrients could be a problem if the spill occurred within an enclosed body of water; however, a spill in the open ocean would not cause any significant impact.

A similar scenario applies to the sodium carbonate/bicarbonate compound. It would also dissolve in seawater and be dispersed. That material is meant to be returned to the manufacturer and recycled. Since all of these chemicals are either relatively inert or are nontoxic when in contact with seawater, a spill would cause no impact on water quality.

Unocal would determine the toxicity of these chemicals in seawater prior to transporting them offshore (Section 4.2.3). Any chemicals that are either hazardous or have not been proven to be nonhazardous would be transported in sealed DOT-approved containers (Section 4.2.3).

Oil spills from the oil emulsion pipeline. Repair and construction activities on the converted water return line would occur near the oil emulsion pipeline running from Platform Gina to shore. An oil spills from that line could occur if, for example, an anchor were set on or dragged across the line. If a spill occurred at the lowest point of the pipeline (i.e., nearest

the platform) and the entire pipeline emptied, about 150,000 gal (3,570 bbl) of oil/water emulsion could spill. However, a recent spill from the pipeline that services Platform Gina that occurred about 100 m from the platform and spilled only about 50 bbl of oil/water emulsion. Assuming that automatic shutdown systems worked as they did in that case, 50 bbl would be a least case scenario for a spill from the Gina pipeline.

City of Oxnard and USGS (1980) contains an oil spill risk analysis which addresses spills from pipelines. They base their analysis on pipeline length and conclude that there is a 23 percent chance of a spill greater than 2.4 bbl (100 gal) occurring over the lifetime of the project anywhere along the length of the pipeline. Other statistics indicate that there is a 6.8 percent chance of a spill greater than 1000 bbl occurring from an offshore pipeline (as of 1978).

A spill of greater than 1,000 bbl is unlikely to occur as a result of this project. However, if a spill does occur, impacts on water quality could range from initially high to moderate to low after cleanup and weathering occurs. If the spill is 50 bbl or less, very little impact on any resource would occur (particularly if, as happened in 1991, the spill does not contact the shoreline). A larger spill would have proportionately larger impacts.

Accidents resulting in a loss of well control and a blowout. Loss of well control during drilling is always a potential danger. Due to the extended nature of the drilling involved in this project and the goal of producing gas fields, the potential for a blowout exists. Since the intent of this project is to develop gas fields only, no spills of crude oil are anticipated.

If a blowout occurs, two "fluids" could escape: natural gas and condensate. In terms of environmental impact, only the condensate might have any effect. Condensate is a liquid form of natural gas that normally exists in the pressurized environment of a gas pocket beneath the sea floor. Condensate, which may occasionally be produced with natural gas, consists of light-end fractions of hydrocarbons. Condensate may volatilize (i.e., return to the gaseous form) upon contact with atmospheric pressure, or it may remain liquid and evaporate; the rate of evaporation would be very rapid.

If a blowout occurs and a spill of condensate is involved, the liquid would evaporate quickly. Little, if any, of the liquid would remain to clean up, although residue could be cleaned with sorbent pads. The toxicity of condensate is relatively high because the light-end hydrocarbon fractions are more toxic than are the heavier-end fractions. However, since condensate would evaporate so quickly, organisms would be exposed to toxic chemicals only very briefly.

A cumulative analysis results in a conclusion of insignificant impact from all impacting agents. Impacting agents resulting from normal operations would not cause any cumulative impact due to the small incremental nature of the impact and the temporary nature of the discharges.

Elemental sulfur or sour gas sweetening chemicals could be spilled accidentally. However, no cumulative impacts on water quality would occur due the inertness of these materials.

An oil spill occurring from the oil emulsion pipeline would cause a high initial cumulative impact in the vicinity of the spillage point. However, due to the natural weathering of oil, the cleanup effort that would be mounted, and the ability of the environment to recover from the worst case spill, the cumulative impact from any individual spill would gradually decrease to insignificance.

Unocal is committed to implementing several oil spill-related mitigation measures, some of which exist per current regulations (e.g., Oil Spill Contingency Plan, unannounced spill drills conducted by MMS inspectors, and the existence of pre-staged oil spill response equipment). Additional oil spill response equipment would be onscene to buttress the equipment that now exists due to MMS requirements. Lastly, precautions would be taken to avoid damaging the existing oil emulsion line while construction occurs (Section 4.2.3).

A spill of condensate and other well liquids caused by the loss of well control would cause no cumulative impact due to the highly evaporative nature of the liquid. In conclusion, no cumulative impacts on water quality are anticipated from this project.

Assessing all the impacting agents results in a conclusion of insignificant impact of the proposed project on water quality since (except for accidental oil spills) no discharge or other spill of material into the sea would cause significant harm to the water quality or violate NPDES permit limitations.

3.4 Biological Resources

3.4.1 Affected Benthic Environment

3.4.1.1 Sediment Chemistry

Levels of various metals in sediments were examined during the same survey as that noted in Dames & Moore (1977). The metals--cadmium, copper, lead, nickel, and zinc (barium was not analyzed)--were all found to be within normal ranges for the Southern California Bight. This conclusion was based on a comparison of samples taken by SCCWRP (1979) who sampled the 60-m

isobath in areas considered to be relatively unaffected by human activities (Table 3.4.1-1).

Table 3.4.1-1. Sediment chemistry data comparing sediment samples collected near Platform Gina with those taken by SCCWRP in areas considered to be unaffected by human activity (in mg/l).

Metal	Platform Gina[a]	SCCWRP 12[b]	SCCWRP 13[b]	SCCWRP Range[b]
Cadmium	0.45	0.50	0.21	0.10-1.40
Copper	3.90	5.50	3.00	2.30-40
Lead	11.10	4.10	4.10	2.70-12
Nickel	6.90	15.00	12.00	3.20-51
Zinc	20.70	40	36	9.8-172

[a]Dames & Moore (1979)
[b]SCCWRP (1979)

These data indicate that, with exception of lead, sediment metal levels near Platform Gina in 1979 were toward the low end for the Southern California Bight as a whole. Measurements of barium were conducted during the BLM-sponsored Southern California Bight baseline study, which ended in 1978 (MMS, 1983). These data indicated that barium levels ranged from 396 ppm to 826 ppm. Barium is a very common terrestrial metal that, due primarily to river input, may reach very high values in sediments on the continental shelf.

3.4.1.2 Benthic Biological Resources

The seafloor in the project area is exclusively soft bottom, consisting of hard packed sand with a rippled texture in the inshore area, grading to more sandy/silt and a less rippled texture offshore. The sea floor has also possibly been disturbed by bat ray feeding, and exhibits various other mounds and holes produced by biological activities (mostly polychaetes and bivalves).

Common epifaunal species found in the vicinity of Platform Gina include sea stars (Astropecten verilli), tube building worms (Dioptera ornata), goeduck clams (Panopea generosa), sea cucumbers (Parastichopus californianus), and polychaete worms (Laonice conchilega) (City of Oxnard and USGS, 1980). Deeper waters (100-300 ft) harbor such common species as shrimp (Sicyonia ingentis and Crangon alaskensis elongata), sea stars (Mediaster aequalis and Luidia foliolata), crabs (Mursia guadachaudi), and sea urchins (Allocentrotus fragilis). The sea

cucumber, P. californianus, was also found in these depths, being the only species found in both the nearshore and offshore areas.

The most common benthic infauna species include the ice cream cone worm (Pectinaria californiensis), the shelless aplacophoran (Limifossor fratula), the polychaete worm Prionospio cirrifera, and the bamboo worm (Polychaeta) (Maldane sarsi) (Fauchald and Jones, 1977).

3.4.2 Benthic Environmental Impacts

The significance criteria used for this analysis are the following: An impact on marine biological resources is considered to be locally significant in this analysis if it is likely to directly or indirectly cause measurable change in (1) species composition or abundance beyond that of normal variability or (2) ecological function within a localized area for 5 years or longer (i.e., is long-term). Measurable changes occurring for less than 5 years would be considered short-term, locally significant impacts. For an impact on be locally significant, the size of the localized area would be relatively small compared with that of an ecologically equivalent area in the immediate region. The threshold for significance is determined by scientific judgment, and considers the relative importance of the habitat and/or species affected.

Impacts of regional significance are judged by the same criteria as those for local significance, except that the impacts cause a change in the ecological function within several localized areas or a single large area. The amount of affected area, relative to that available in the region, is determined in the same way as that for locally significant impacts. This determination considers the importance of the species and/or habitat affected and its relative sensitivity to environmental perturbations.

The only source of potential impacts on the benthos in the vicinity of Platform Gina due to the proposed construction and drilling activity is drilling discharges (i.e., drilling muds and drill cuttings).

Cuttings would fall more vertically in the water column than the drilling muds, forming a pile slightly down current but close to the discharge point, and burying organisms that may be inhabiting the sea floor in the area. Since the habitat surrounding Platform Gina is soft bottom, and the predominant habitat in the region is also soft bottom, the impact on infauna would be insignificant. The sea floor smothered by the cuttings pile would constitute a very small area compared with the total amount of soft bottom in the region. Furthermore, this area has already been covered by drill cuttings produced during the drilling of the first 12 wells on Platform Gina.

The discharge of drilling muds during this project would constitute over 24,000 bbl of mud per well (on average). This is a relatively large amount of drilling mud for a normal development well. However, the wells Unocal proposes to drill from Platform Gina would be slant drilled (i.e., drilled at an angle from the vertical) to distant targets, and thus are much longer than the total vertical depth (TVD) indicates (Note: the TVD and horizontal distance of the proposed wells are considered proprietary information by Unocal that cannot be divulged in a public document). Although this relatively large amount of drilling mud would impact the benthic environment more than the mud discharged from a normal development well, the impacting plume would still only cover soft bottom. As indicated in Section 3.3.1.1, the currents in the vicinity of Platform Gina are predominantly to the west or northwest everywhere in the water column, and are usually moving at speeds of about 25 cm/sec (0.5 kt). Considering the depth of water [30 m (95 ft)] and the slow current speeds, the drill cuttings and the mud plume should reach the bottom quickly, the muds dissipating down current.

As the drilling muds spread over the sea floor, potential impacts could include (1) smothering of filter feeding organisms; and (2) localized changes in granulometry, possibly leading to changes in benthic community composition and increased body burdens of barium and low levels of hydrocarbons. Incorporation of barium and hydrocarbons may result in subtle reproductive, metabolic, and biochemical changes by the benthic infauna, and epifauna may also incorporate some of the pollutants. However, epifauna have the advantage of motility, and thus may not be impacted nearly so much as sessile infaunal organisms.

Interference with benthic epi- and infaunal ecological relationships could occur in the path of the plume within about 1,000 m (3,280 ft). Additional potential impacts on the benthos could occur within 3-5 km of the platform, depending on (1) the total amount of drilling muds discharged (Unocal has noted that they would recycle as much mud material as possible during the drilling of the 7 wells); (2) whether the drilling muds would be discharged on a continuous basis or intermittently, over a short period or a long period of time; and (3) whether any storm or other powerful oceanographic events occur.

If existing benthic communities were impacted to the extent that they vanish, recolonization would come both from within the buried sediments and from outside by larval settlement. Although another community would arise, it may not be exactly the same as that which initially existed because various infaunal communities are adapted to certain sedimentary regimes.

Impacts on soft bottom benthic habitat could occur from various construction activities (e.g., pipeline pulling, potential hydraulic jetting of the seafloor to assist in the pipeline

burial, and anchoring of the pipelaying vessel). These impacts would be significantly reduced by successful implementation of the various mitigation measures proposed by others and concurred with by MMS (Section 4.2.4.1).

No cumulative impact on the benthic biological environment is anticipated due to the short duration of the project and the small incremental nature of the project compared with natural variability.

The drilling portion for this project would last 2-3 years. Impacts on the benthos would occur within 1,000-5,000 m of the discharge point during the time of discharge and for some time thereafter. Thus, potential impacts on the benthic environment would be insignificant due to the small area smothered by the cuttings pile, the continual resuspension and dispersion of the drilling mud discharges, the relatively short duration of the drilling portion of the project, and the applicant's compliance with the NPDES permit limitations for drilling mud discharges for this project.

3.4.3 Marine Mammals

The marine mammal species most likely to experience impacts from construction activities associated with the proposed Platform Gina pipeline replacement is the gray whale (Eschrichtius robustus). Gray whales migrate through southern California waters twice a year on the way between their Mexican breeding lagoons and feeding grounds in the Bering Sea. The southbound migration of gray whales through the Southern California Bight begins in December and lasts through February; the northbound migration is more protracted, lasting from February through May, and peaking in March (Leatherwood, 1974; Bonnell and Dailey, 1990).

The gray whale migration pathway through the Southern California Bight is broad and diffuse, following three general routes, and extending up to 200 km [110 nautical miles (nm)] offshore (Dohl et al., 1981; Bonnell and Dailey, 1990). The nearshore route follows the mainland shore most of way between Point Conception and Point Vicente, but is somewhat more offshore between Santa Barbara and Ventura and across Santa Monica Bay (Bonnell and Dailey, 1990). More than 50 percent of the 300 sightings made by Dohl et al. (1981) from 1975-1978 occurred within 15 km (8 nm) of the mainland shore. Females with calves, which are usually present in the Santa Barbara Channel in greatest numbers from about mid-April to early May, tend to remain closer to shore than do other animals (Dohl et al., 1981, 1983; Poole, 1984; Bonnell and Dailey, 1990).

The most common pinnipeds in the project area are harbor seals (Phoca vitulina) and California sea lions (Zalophus

californianus). Although harbor seals do haul out along the Santa Barbara Channel mainland coast, neither species is known to haul out on beaches in the vicinity of the pipeline repair project. The closest identified harbor seal hauling area is located in Mugu Lagoon (Hanan et al., 1987; 1988), more than 30 km (16 nm) southeast of the pipeline landfall at Mandalay Beach.

3.4.4 Potential Impacts on Marine Mammals

The proposed pipeline replacement project is scheduled to begin in early February 1992 and last approximately 3 weeks, overlapping in part with the migration periods of the gray whale through the Santa Barbara Channel. Noise and disturbance from the pipeline repair activities and associated vessel traffic would be the major sources of potential impact to migrating gray whales. Other marine mammals, including harbor seals and California sea lions, are not expected to be impacted by this project.

Available information on the potential impact of noise and other OCS-related disturbances on marine mammals is reviewed in Hill (1978), Geraci and St. Aubin (1980, 1985), Terhune (1981), Gales (1982), Malme et al. (1983, 1984, 1989), and Richardson et al. (1991). Based on the results of these studies, it is expected that migrating gray whales would respond to noise produced by the pipeline repair activities and associated support vessels with short-term changes in swimming speed, increased intervals between blows, and small deflections in course, resuming normal course and speed after passing the source of the sound.

The proposed construction activities are expected to be brief, and are scheduled to be completed before the most of the northward migrating mother/calf pairs arrive in the area. In addition, the pipeline repair work would be limited to an area within 700 m (2,300 ft) of the shoreline. In their informal consultation on the Platform Gina project (Appendix A), the National Marine Fisheries Service (NMFS) cited these factors in concluding that the project would not adversely affect migrating gray whales. The CCC also found the proposed project to be consistent with Sections 30230 and 30231 of the California Coastal Act, with respect to the whale migration. MMS does not expect the proposed action to significantly affect the California gray whale population.

The proposed project is not expected to increase the cumulative effects of OCS natural gas and oil activities on marine mammals due to the temporary and incremental nature of its operations, and to the mitigating measures that would be imposed and adopted to protect other resources (Section 4.2.4.2).

3.4.5 Birds and Terrestrial Wildlife

Two endangered species of birds and two candidate species (one bird and one beetle) are known to occur in the general vicinity of the proposed project. They could be potentially affected by activities associated with the proposed project.

The history of the California brown pelican's (Pelecanus occidentalis californicus) decline due to pesticides and scarcity of food (i.e., anchovies) is well documented in the literature (Schreiber and DeLong, 1969; Jehl, 1973; Gress, 1970; Keith et al., 1971; Risebrough et al., 1971; Anderson et al., 1975; Anderson, 1977; U.S. Department of the Interior (USDOI), 1982; Anderson and Gress, 1983;). This subspecies was listed as endangered in 1970 (USDOI, 1982). The range of the California brown pelican extends from British Columbia to the coast of southwest Mexico, but the species' current breeding range is much more restricted. In the U.S., brown pelicans currently nest only on Anacapa and Santa Barbara Islands in the Southern California Bight. In 1986, the Southern California Bight brown pelican breeding population was estimated at 7,349 pairs [Harlow, U.S. Fish & Wildlife Service (USFWS), pers. comm., cited in USDOI (1987)].

Brown pelicans are resident year-round in the Southern California Bight and the Channel Islands, concentrated between Point Dume, Anacapa Island, and Santa Cruz Island. Large numbers of non-breeding birds roost between Ventura and Point Mugu in late spring (USDOI, 1979; 1981). Roost sites typically used by pelicans include harbors, river mouths, and lagoons; no roost sites are known to occur at the site of the proposed pipeline replacement project.

California least terns (Sterna antillarum browni) migrate from Mexico each spring to establish small breeding colonies along the Pacific coast from northern Baja California, Mexico to San Francisco Bay, California. At one time their nesting habitats, consisting primarily of sandy beaches, formed a discontinuous band along the coast. However, greatly increased human activity there has made these areas largely uninhabitable so that breeding is now limited to about 25 colonies, most of which are in southern California. The species was listed as endangered in 1970 (USDOI, 1980). The estimated least tern breeding population has increased from a low of about 500-600 pairs in the early 1970s to over 1,800 pairs in 1991 (C. Collins, pers. comm.).

Least terns usually begin arriving in southern California in late April. Eggs (usually 2 per clutch) are laid from mid-May to early August (USDOI, 1980). Nesting colonies are usually located on open expanses of sand, dirt, or dried mud close to a lagoon or estuary where small fish can be obtained.

The southward migration of least terns may begin as early as August, and few, if any, terns remain in California after late September (Garrett and Dunn, 1981). The migration route and winter distribution of these birds are almost unknown.

Only two least tern colonies are in the general vicinity of the project site: the Santa Clara River colony, located about 2 miles north of the site; and the Ormond Beach colony, located about 6 miles south of the site. These colonies are both relatively small (less than 25 pairs), and the Ormond Beach colony is occupied only sporadically. Least tern activity at the proposed project site on Mandalay Beach is expected to be limited to foraging by a few individuals from these colonies.

The coastal population of the western snowy plover (Charadrius alexandrinus nivosus) is thought to be in decline due to loss and disturbance of sandy beaches, the species' preferred habitat. Although not formally listed as threatened or endangered, the snowy plover is a candidate (Category 2) for listing.

During the breeding season (April through late July), snowy plovers are limited to sparsely vegetated and sandy areas, including sandy shores and sand dunes. Nests consist of a simple scrape in the sand, often lined with fragments of shell and small pieces of rock or tiny pebbles, usually close to the water. Plovers reportedly do not stray far from their nesting areas any time of the year. Snowy plovers feed mainly on sandy beaches, foraging on wet sand and at the surf line. Foraging activity frequently occurs in small groups (Bent, 1962).

The snowy plover is much reduced along the coast as a nesting species, and much of the remaining breeding population is concentrated in San Diego Co. and at Vandenberg AFB SBA. Numbers of birds along the coast are somewhat augmented in winter, probably by the arrival of birds which nested in interior areas (Garrett and Dunn, 1981). Although the actual number of pairs nesting at Mandalay Beach is unknown, at least a few are expected to occur at the project site.

The current habitat of the globose dune beetle (Coelus globosus) consists of the coastal strand community of foredunes. Extensive distribution of this species is now limited to a few localities along the coast from Mendocino County to Baja California, Mexico, and the Channel Islands. This beetle is usually observed on hummocks eighteen inches to two feet high, close enough to the high tide line that the hummocks are occasionally swept out by storm tides [Arthur D. Little (ADL), 1985]. A similar but abundant species (Coelus gracilerus) occurs slightly further inland and occupies a similar niche in the coastal dune scrub community (ADL, 1985). Although the status of globose dune beetles along Mandalay Beach is unknown, the species has been found in dunes at Pt. Mugu, 15 miles south of the project site.

3.4.6 Bird and Terrestrial Wildlife Impacts

The only impacts on birds and terrestrial wildlife expected as a result of the proposed project are from the noise and disturbance associated with both onshore and offshore pipeline repair and replacement activities at Mandalay Beach. These activities would include the construction of 2,700 ft of pipeline on the beach, the pulling of about 400 ft of pipeline through a conduit under the sand dune, and the presence of a workboat and associated support vessel immediately offshore. The project is scheduled to begin in early February 1992 and last approximately 3 weeks.

Activities associated with the pipeline repair and modification are expected to cause foraging brown pelicans to temporarily avoid the area within about 0.1 mile of construction. This minor disturbance is not expected to have a significant impact on this species because of the short duration and restricted nature of the project.

Least terns are not expected to be affected by this project because it is scheduled to occur during a period when terns are not present in southern California. If the project is delayed until the terns return in May, impacts are expected to be the same as for brown pelicans. Tern breeding activities would not be affected because the project site is well away from any tern colonies (2-6 miles).

The effect of this project on snowy plovers would be similar to that for brown pelicans, if the project is completed as scheduled in February or March. Plovers wintering on the beach at the project site are expected to abandon the area temporarily for the duration of the activities. If the project is initiated after March, however, the reproductive activities of the few pairs that may nest at the site could be disrupted. Overall, impacts on snowy plovers are expected to be insignificant due to the short duration of proposed activities, the small area affected, and implementation of mitigation measures (Section 4.2.4.3).

Based on an informal Section 7 consultation with the USFWS, MMS expects the proposed project would have little, if any, impact on the globose dune beetle, assuming that the species occurs at the site. Disturbance of the dunes where this species could occur should be minimal because the pipeline would be installed in an existing conduit already in place under the dunes. Disturbance to dune habitat is expected to be limited to a narrow pedestrian walkway between the inland parking area and the pipe staging and welding area on the beach, excavation of the conduit access, and possibly inadvertent vehicle intrusion. Pipeline construction constraints, as outlined by Unocal (1990), including the restriction of foot traffic through the dunes to a designated area and the construction of a temporary fence between the job site and the dunes, should limit dune impacts to a minimum.

Because of the very small area involved and short duration of the project, impacts on globose dune beetles are expected to be insignificant.

Cumulative impacts to endangered and candidate species as a result of the proposed project are expected to be insignificant due to the short duration of the project and to the infrequency and wide distribution of construction projects in this area.

Based on the type of activities associated with this project, the short duration of these activities, the small area involved, and the implementation of mitigation measures (Section 4.2.4.3), impacts on endangered or candidate species are expected to be insignificant.

3.5 Commercial and Sport Fishing

3.5.1 Affected Environment

The commercial and sport fishery resources and fisheries in the project area have been described by the California Department of Fish and Game (CDF&G et al., 1987); Chevron (1991); the City of Oxnard and USGS (1980); Frey (1971); Fusaro (1986); Goodson (1988); MBC Applied Environmental Sciences (MBC, 1987a; 1989; 1990); Squire and Smith (1977); Western Oil and Gas Association (WOGA, 1985); WESTEC Services, Inc. (1986); and many others.

Along sandy beaches from Point Mugu northwestward, fishermen catch the following species from shore: walleye and barred surfperches (Hyperprosopon argenteum and Amphistichus argenteus), especially during January-March); California halibut (Paralichthys californicus), especially during spring and summer; jacksmelt (Atherinopsis californiensis); sharks; California corbina (Menticirrhus undulatus); spotfin croaker (Roncador stearnsi); and kelp bass (Paralabrax clathratus) (Squire and Smith, 1977).

Sport fishing along the Oxnard shoreline in the project area consists of surf casting along the beach and hook-and-line fishing in the kelp beds near the mouth of Channel Islands Harbor (MBC, 1990). Species taken at Mandalay Beach include silver surfperch (Hyperprosopon ellipticum), barred surfperch, yellowfin croaker (Umbrina roncador), and California corbina (MBC, 1990). Anglers fishing from privately owned boats out of Oxnard catch mainly blue rockfish (Sebastes mystinus), copper rockfish (S. caurinus), Pacific mackerel (Scomber japonicus), white croaker (Genyonemus lineatus), and kelp bass (WESTEC, 1986).

California grunion (Leuresthes tenuis), which synchronize their spawning activities on sandy beaches with the moon and tides from early March through September, are taken only by hand (except during April and May, when the season is closed) (CDF&G et al.,

1987; Goodson, 1988). Surf fishermen catch sand crabs (Emerita analoga) for bait. Pismo clams (Tivela stultorum), although quite numerous, are probably not harvested at Mandalay Beach to any significant degree (MBC, 1990).

About 90 percent of the fish taken on commercial party boats in the Santa Barbara-Port Hueneme area are rockfish, kelp bass, and Pacific mackerel (WESTEC, 1986). Sport fish catches in the Platform Gina/Gilda area are dominated by Pacific bonito, chub (Kyphosus analogus), Pacific mackerel, California halibut, and white croaker (City of Oxnard and USGS, 1980).

Fusaro (1986) indicated that commercial fishermen set rock crab (Cancer spp.) pots along depth contours from shore to about 30 fathom [(fm), 180 ft] in the Santa Barbara-Port Hueneme area. The rock crab fishery is active all year. Fishermen also set spiny lobster (Panulirus interruptus) pots in the same area. In addition to placing strings of lobster pots along depth contours, fishermen set pots in clusters around rocky outcrops where lobsters congregate. At the beginning of the lobster fishing season (October), fishermen set most lobster pots in shallow water along the shoreline. As the lobster season progresses, fishermen set lobster pots farther offshore; by the end of the season (March), pots are concentrated in the 20-40 fm (120-240 ft) range.

Commercial set gillnet and trammel net fishing occurs in the same general areas as crab and lobster pot fishing (Fusaro, 1986). Fishermen set most of their nets in relatively shallow water from shore out to about 30-40 fm (180-240 ft). Target species are California halibut, white seabass (Atractoscion nobilis)), angel shark (Squatina californica), other sharks, rockfish (Sebastes spp.), queenfish (Seriphus politus), and white croaker. Fishermen set gillnets year-round, since seasonal restrictions are not in effect for most of the target species. However, the white seabass season is closed from March 15 through June 15 in waters south of Point Conception (MBC, 1987a).

The commercial driftnet fishery for swordfish (Xiphias gladius) and thresher shark (Alopias vulpinus) operates in a much different area than does the set net fishery, well outside the Platform Gina area (Fusaro, 1986; Chevron, 1991). This fishery is open from early August through late January. Swordfish are also caught commercially by harpooning and recreationally by hook and line throughout the area (Chevron, 1991).

Trawling occurs anywhere along the coastline at depths of 30-150 fm (180-900 ft) (Fusaro, 1986; Chevron, 1991). The principal target species for trawling in the project area (CDF&G Fish Block 683) is California halibut (City of Oxnard and USGS, 1980). Seasonally, trawling for California halibut is allowed in shallower state waters; i.e., from June 16 to March 14 between 1

nautical mile of the mainland shore and the 25-fm (150 ft) isobath between Point Mugu and the southern boundary of Santa Barbara County (MBC, 1989; MBC, 1987a).

Other species sought by trawlers are ridgeback shrimp (Sicyonia ingentis); spot prawns (Pandalus platyceros); various species of rockfish (Sebastes spp.) and sole (e.g., Dover, Microstomus pacificus, English, Parophrys vetulus, and rex, Glyptocephalus zachirus); and sea cucumbers (Parastichopus spp.) (Fusaro, 1986). Ridgeback shrimp are taken year-round, except during the closed season (from June to October). Peak fishing for spot prawns occurs during March-September; the season is closed from November through January.

About 90-95 percent of the commercial landings in the region (CDF&G Fish Block 683) typically consist of pelagic (open water) species (City of Oxnard and USGS, 1980; WESTEC, 1986). Purse seiners from San Pedro follow schools of northern anchovy (Engraulis mordax), Pacific mackerel, jack mackerel (Trachurus symmetricus), and Pacific bonito (Sarda chiliensis) throughout the Santa Barbara Channel. The primary fishing area for anchovies is in the mid-channel area between Anacapa Island and the mainland over deep water, whereas that for mackerel is in water shallower than 50 fm (300 ft) near the Channel Islands (WESTEC, 1986). The season is open all year, but is closed for anchovies from July through early October.

Market squid (Loligo opalescens) supply the bulk of the commercial catch in the Santa Barbara Channel, accounting for 57-72 percent of the landings at Port Hueneme in 1988-1989 (Chevron, 1991). In addition to being harvested by purse seine and lampara net fisheries, market squid are taken in the Santa Barbara Channel dipnet fishery (Chevron, 1991).

Some trolling for coho salmon (Oncorhynchus kisutch), albacore (Thunnus alalunga), and occasionally bonito, occurs infrequently in the Santa Barbara Channel (Fusaro, 1986). Most troll-caught fish are taken in the Hueneme Canyon area (Chevron, 1991). The salmon season is open April-September, depending on species and district (Fusaro, 1986; WOGA, 1985). Albacore usually enter coastal waters in June and leave by December (WOGA, 1985).

Commercial longline fishing in the Santa Barbara Channel targets bonito shark (Isurus oxyrinchus) and blue shark (Prionace glauca) (Chevron, 1991). This fishery is open year-round.

3.5.2 Commercial and Sport Fishing Impacts

The proposed project could cause space/use conflicts with fishing activities. Commercial fishing would be temporarily disrupted during project construction, and would be disturbed by increased workboat traffic. However, the mitigation measures Unocal has

incorporated in the project design and that would be imposed by state agencies (CCC, 1991; SLC, 1991) should minimize these impacts (Section 4.3).

Pipeline repair work would all be done within state waters, extending from MHTL to 2,300 ft out from shore at the offshore tie-in point. The pipeline repair project is scheduled to last 19 days, but actual workboat activities would only occur for 3-4 days (CCC, 1991). Disturbance of inshore gillnet and crab/lobster trap fishing activities along this corridor, if limited to this brief period, should be short-term and insignificant.

Unburied pipe could cause potential snagging problems for commercial fishermen for an extended time (i.e., months to years). However, these potential problems would be minimal if the following two conditions are met: (1) if self-burial of the pipe occurs within a fairly short period of time (i.e., weeks to months) from natural wave forces, as the pipeline self-burial evaluation study completed for Unocal predicted (Unocal, 1990); and (2) if the pipe is adequately marked, as Unocal proposes to do. If the State Lands Commission's requirements for pipeline burial are not met within 2 years, Unocal must bury the line with hydraulic jetting to 3 ft below the sand bottom out to a depth of 15 ft below mean lower low water (MLLW) (SLC, 1991).

Onshore pipeline repair work could affect grunion spawning habitat and interfere with grunion spawning and harvesting activities if construction activities on the beach were undertaken improperly. These impacts could be avoided if pipeline repair activities in the intertidal zone were completed in February, before the grunion spawning season (March-September), in accordance with Unocal's proposed schedule.

Offshore construction activities for Platform Gina modifications are scheduled to last one month, but the actual construction days may be fewer. These activities involve the use of workboats within the 500-m safety zone around the platform. Little commercial fishing activity occurs within this zone, although some sport fishermen are known to fish there (CCC, 1991). The impacts of platform modification construction activities on fishing activities should therefore be insignificant.

Offshore commercial fishing will continue to be precluded around Platform Gina, with or without the proposed drilling of additional wells or recompletion of existing wells in the Hueneme field. Unocal's intention "to store and reuse drilling muds to the greatest extent possible" (Unocal, 1990) should minimize the additional quantities of drilling solids discharged from Platform Gina, and thus the potential fisheries impacts. The presence of Platform Gina and the drilling material accumulated beneath it may or may not enhance biological productivity and fish biomass

at the site (e.g., Davis, 1989; MBC, 1987b; Polovina, 1989; Reggio, 1989). Any "artificial reef effect" created by the platform and associated cuttings piles could have a long-term beneficial impact on sport fishing in the area.

The proposed project would add to the cumulative impact of all natural gas and oil operations on commercial and sport fisheries. However, these impacts should be insignificant due to the short duration and incremental nature of the project compared with the relatively great variability in the environment, fisheries, and fishery resources. Therefore, the proposed project is not expected to increase substantially the long-term cumulative impacts of natural gas and oil operations on California fisheries.

3.6 Archaeological Resources

3.6.1 Affected Environment

Archeological resources may be present in the area (Dames & Moore, 1980a, 1980b, and 1980c; MMS, 1987). Offshore archaeological resources include "nautics" (aboriginal and historic shipwrecks) and submerged aboriginal sites or artifacts.

Offshore southern California, nautics may include Asian vessels (which were entrained in the California Current), aboriginal vessels (Chumash and other Native Americans), and more recent vessels.

The development of sophisticated oceangoing vessels in China before 1300 A.D. has been recorded. Although there is scant evidence of pre-Columbian contact with North America in Chinese records, such contact may have occurred accidentally. European records after 1685 document Japanese junks drifting off the western coast of North America. Most of these vessels had lost both their rudder and mast. Thus helpless, they had drifted northward in the Japanese Current, then southeastward in the California Current (Brooks, 1875).

Numerous submerged artifacts resulting from aboriginal activities have been discovered at Point Conception and at Refugio Beach, Mohawk Reef (City of Oxnard and USGS, 1980) and onshore in the Point Hueneme area (MMS, 1987). The sewn-plank canoe, or "tomol," which was developed by the Chumash Indians sometime around 1000 A.D. could also have been lost at sea or near shore.

Marine geophysical survey records have also identified several sites of anomalous returns in the vicinity of the proposed project area (USGS, 1980). These sites of anomalous returns may indicate locations of historic shipwrecks.

The MMS Predictive Archaeological Site Location Model (MMS, 1987) also indicates that the proposed project area was exposed above sea level as recently as 11,000 years BP. Therefore, an archaeological site may exist in the general vicinity of the proposed project.

3.6.2 Archaeological Resource Impacts

Significance criteria for archaeological resource impacts can be drawn directly from the National Historic Preservation Act of 1966, as amended. Impacts on archaeological resources from the proposed DPP revision would be considered significant if:

- Any site, structure or object that is included in, or eligible for, inclusion in the National Register (of historic or archaeological sites) is inadvertently demolished or substantially altered.

Due to the main flow pattern of the California Current west of the Channel Islands, any Asian vessel entrained in the current would probably not have been carried into the Santa Barbara Channel. Therefore, impacts of the proposed project on lost Asian vessels are not expected to be significant due to the remote possibility of such vessels existing within the proposed project area.

In the absence of better data, it is considered in the best interests of historic preservation to acknowledge the possibility that the remains of aboriginal craft or artifacts may occur in or near the project area. However, the potential for preservation of historic or aboriginal sites and vessels increases with distance from shore and greater water depth (i.e., the lower the energy of the depositional environment, the less likely the artifacts will be destroyed by wave action and storms). If aboriginal sites once existed in the high-energy, active inshore environment, the site structures would likely have been either destroyed or altered. Impacts of the proposed project on aboriginal sites and vessels are thus not expected to be significant due to (1) the rarity of such archeological sites surviving within a high-energy environment and (2) the proposed project's proximity to shore.

All pipeline repair work is proposed to be executed within the pipeline corridor addressed in the EIR/EA for the original project (City of Oxnard and USGS, 1980). Previous studies indicate that the nearest known archaeological site (i.e., historic shipwreck site) is about four miles from the construction site. Therefore, the likelihood of construction or anchoring operations associated with the proposed project disturbing a historic shipwreck site is considered to be very small (City of Oxnard and USGS, 1980). If an archaeological

resource were encountered, Unocal would adhere to MMS conditions (Section 4.4).

No cumulative effects on archaeological resources resulting the proposed project were identified during this analysis. Therefore, the total impacts on archaeological resources likely to result from the proposed project are considered to be insignificant.

4.0 Alternative Action and Mitigation

This section discusses the No Action Alternative and the mitigation that is either part of Unocal's proposal or is being proposed in this EA by MMS. Some of the mitigation measures may have been recommended or required by outside agencies.

The MMS will include as a Condition of Approval a requirement for Unocal to develop a Compliance Monitoring Plan. Unocal must complete and submit to the MMS for review and approval its Compliance Monitoring Plan for each project phase prior to the commencement of any operational activity relating to the phase described therein.

4.1 No Action Alternative

One alternative to Unocal's proposed DPP revision is to disapprove the proposed project revisions. Adopting this alternative would result in avoiding all adverse impacts associated with the current proposal (as discussed in this EA). However, all the adverse impacts previously discussed in the original EIR/EA (City of Oxnard and USGS, 1980) would remain unchanged.

If the no action alternative were selected, air quality impacts would be lower than for the proposed action. Impacts on geological, biological and archeological resources; marine water quality; and commercial fishing would also be lower. However, selecting the no action alternative would also preclude further development of the Hueneme field, and would thus prohibit the beneficial aspects of increasing natural gas availability as well as violate the intent of the Outer Continental Shelf Lands Act (OCSLA), as amended.

MMS has the authority to disapprove the proposed project revision if serious harm or damage would result to the marine, coastal, or human environment, as discussed in Section 3 of this EA). The new proposal meets the intent of the OCSLA and mitigates potential adverse impacts to an insignificant level.

4.2 Mitigation Measures

To minimize disruption to the environment, Unocal shall adhere to the mitigation plan included in the revised DPP and the specific mitigation measures described below.

The mitigation measures were developed through analyses discussed in this document (Section 3) after extensive coordination with Unocal and various local, state, and federal agencies (Section 5). To comply with the requirements of the California Coastal Commission, California State Lands Commission, Ventura County Air Pollution Control District, MMS, and other agencies, Unocal shall implement the proposed mitigation measures outlined below.

Mitigation measures that have been requested or required by agencies other than MMS are referenced accordingly.

Adherence to external agency requirements will complement federal requirements mandated by OCSLA. MMS believes that successful implementation of both MMS and external agency requirements should minimize impacts to the environment resulting from Unocal's proposed operations.

4.2.1 Geological Resources

Specific proposed mitigation measures, as they relate to the geologic environment, are as follows:

1. To reduce impacts on the soft marine substrate, Unocal shall limit excavation at the tie-in site to 40 linear feet (Unocal, 1991) to complete the tie-in. Unocal shall (as stated in their anchoring plan) also deploy no more than eight anchors, and shall set and retrieve them in a vertical manner to reduce anchor scarring (Unocal, 1991). Any change in Unocal's specific plan for anchoring shall be submitted to MMS prior to anchor deployment.

2. To reduce onshore geologic impacts, the following mitigation shall be enacted for Unocal's associated operations (City of Oxnard, 1990):

    a. For impacts to the foreshore area between Fifth Street and the staging area resulting from equipment access, Unocal shall take photographs of the pre-project area (for use as reference), and, after completing the project, shall restore the area to its original condition.

    b. To protect the sand dune area, Unocal shall install a temporary fence around the staging area and construct a stairway and walkway to allow work crews access between Mandalay Beach and the staging area. Subsequent to the project, Unocal shall remove the fence, stairway, and walkway and return the area to its original condition.

    c. Upon completing the proposed project, Unocal shall correct any disruption or change in the project area's natural topography resulting from project operations so that the area is returned to its original condition.

4.2.2 Air Quality

MMS in consultation with Ventura County APCD will incorprate the following mitigation measures in the MMS project permit. These measures will be enforced by the MMS through the MMS inspection program:

1. Unocal shall provide offsets in accordance with APCD Rule 26, New Source Review, for all permanent NO_x and ROC emissions increases caused by the project, and for all permanent SO_2 emission increases caused by the project if such emission are projected to exceed 15 tons per year.

2. Unocal shall install BACT (Best Available Control Technology) in accordance with APCD Rule 26, New Source Review, on all new and modified gas processing equipment on Platform Gina. Unocal shall reimburse the APCD for the time spent making the BACT determination in accordance with the APCD's fee schedule. Unocal shall coordinate with and obtain approval from MMS for use of the BACT required by the APCD.

3. Unocal shall operate all components on Platform Gina in compliance with the provisions of APCD Rule 74.10, Components at Crude Oil Production Facilities and Natural Gas Production and Processing Facilities. Unocal shall submit an Operation Management Plan as required by Rule 74.10 within 90 days of the commencement of gas production or processing. The plan shall also be submitted to the MMS within the stated timeframe.

4. Unocal shall adjust the SO_2 emission factor and resulting calculated emissions if the actual H_2S concentration of the sour gas is found to be different than the assumed value of 2000 ppm. For the purpose of preliminary estimations, the emission factor of 357.2 lbs/MMCF shall be used.

5. Unocal shall continuously record the gas flaring rate (not including well testing operations) and calculate emissions using the following emissions factors to demonstrate that annual emissions do not exceed the amount of offsets that have been provided for the project:

   ROC - 144 lbs/MMCF
   NO_x - 51.5 lbs/MMCF
   SO_2 - 357.2 lbs/MMCF (or as described in #4 above)*
   CO - 40 lbs/MMCF
   PM - 3 lbs/MMCF

   * If sweetened gas is flared, the emission factor shall be adjusted accordingly.

Unocal shall make such records available to the APCD and MMS upon request. Unocal shall continue to follow flaring guidelines as stated in the January 28, 1986 MMS letter to Unocal for Platforms Gina, Gilda, A, B, and C.

6. Unocal shall treat the gas flared during well testing operations to less than 300 ppm H_2S. Unocal shall collect and analyze at least one gas sample per day of well testing to confirm that the H_2S concentration does not exceed 300 ppm.

These mitigation measures were included in the air quality analysis. The air quality analysis was based on the controls currently proposed by Unocal. The MMS and Ventura County APCD will work with Unocal in determining future BACT requirements for this project. If BACT results in more stringent controls than are presently proposed, emissions would be lower than those assumed in this analysis. Unocal shall forward copies of all correspondence between Ventura County APCD and Unocal regarding this project to the MMS.

4.2.3 Water Quality

Many of the following mitigation measures simply state that Unocal must comply with existing water quality regulations. Platforms Gina and Gilda discharge their waste streams under the General NPDES permit issued by EPA on February 18, 1982 (Federal Register Vol. 47, No. 33, pages 7312-7329). The NPDES permit requires that the operators sample drilling muds prior to discharge and test them for toxicity. For produced waters, the volume is monitored daily, oil and grease monthly, and a suite of metals and phenols once per year. Hydrostatic test waters are not specifically called out in the General Permit. This project was a special case because Unocal opted to use chemically treated produced waters during the pressure testing. Since the General Permit covered produced waters as an effluent, Unocal did not have to apply for an individual permit for that action, which they would have had to do if they had decided to use chemically treated seawater as the pressure testing fluid (pers. comm. Eugene Bromley, EPA, 1/28/92).

In addition to the NPDES limitations discussed above, EPA and MMS have signed a Memorandum of Agreement (MOA) by which MMS conducts compliance monitoring twice each year at each platform in the Pacific Region. The monitoring consists of two portions: sampling of produced waters and drilling muds (when drilling is occurring) and a records check where it is ascertained whether the platform operators are keeping records according to the stipulations of their NPDES permits. EPA uses the results of the monitoring to determine whether each operator is complying with the terms of the NPDES permit.

Unocal shall comply with the following proposed mitigation measures to avoid or minimize impacts on water quality that may occur from the proposed project:

1. For discharges of drilling muds and cuttings, Unocal shall adhere to NPDES permit limitations (permit issued by EPA). In addition, Unocal shall adhere to the requirements set forth in the MOA between EPA and MMS, which allows MMS inspectors to sample drilling muds during the drilling phase of the project. Drilling mud samples will be analyzed by an EPA-contracted laboratory.

2. Unocal shall monitor the produced water effluent according to the limitations contained in the NPDES permit issued for this project by EPA, as required by MMS and the California Coastal Commission (CCC, 1991).

3. Unocal shall take samples of the hydrostatic test water discharge when that test is conducted. MMS will oversee this monitoring process by collecting the samples and transporting them to an EPA-approved laboratory for analysis. Unocal shall contract the test laboratory contingent upon MMS approval. The results of the analyses will be sent from the contracted laboratory to Unocal, MMS, and EPA. NPDES permit limitations shall be met for the effluent.

4. To mitigate the possibility of a spill of elemental sulfur occurring while the sulfur is being transported to shore, Unocal shall transport this material in DOT-approved sealed containers, as requested by the California Coastal Commission (CCC, 1991).

5. To mitigate the impacts of potential spills of H_2S gas sweetening chemicals, Unocal shall:

   a. test the chemicals for toxicity in seawater using the methods recommended by the 1990 California Ocean Plan test protocols; and

   b. transport in sealed containers any chemicals or byproducts that have not been proven to be nonhazardous (CCC, 1991). Although the tests have yet to be conducted, Unocal must accomplish this task before using any of the chemicals used in either the temporary or the permanent gas sweetening process.

6. Oil spill drills (i.e., those routinely scheduled by Unocal as well as those surprise drills conducted by MMS inspectors) shall be conducted to mitigate for possible oil spills during this project, either from (a) the present oil emulsion pipeline (due to an accidental puncture during

construction activities) or (b) accidents that result in a loss of well control and a blowout.

7. During the construction phase of this project, Unocal shall have a crewboat on standby with an oil containment boom on board; an additional amount of boom shall be available on Platform Gilda; and a 21-ft boom tender boat shall be ready to assist. There shall also be 15 cartons of sorbent boom on both Platforms Gina and Gilda. As a member of Clean Seas, Unocal will be able to access instantaneous oil spill response (CCC, 1991).

8. Additional oil spill risk reduction shall be accomplished by using mooring buoys instead of anchors while the gas sweetening units are being constructed aboard Platform Gina, as required by the California Coastal Commission (CCC, 1991).

9. Unocal shall have in place their Oil Spill Contingency Plan, as required by the California Coastal Commission (CCC, 1991) and MMS. This plan is reviewed annually by MMS, and will serve as a basis for any oil spill emergency that occurs during this project, regardless of the spill's source.

4.2.4 Biological Resources

Unocal shall comply with the following proposed mitigation measures to avoid or minimize adverse impacts to biological resources that may occur from the proposed project.

4.2.4.1 Benthic Environment

1. Minimizing disturbance of benthic organisms shall, in part, be accomplished by pulling the pipeline from the shore to the offshore tie-in point. Using this methodology will avoid the disturbance of benthic organisms that would occur if the line were laid using conventional pipelaying methods with a lay barge and anchors (Unocal, 1990).

2. Additional disturbance will be avoided by allowing the pipeline to bury itself in areas where surf and current action provide sufficient energy. Some hydraulic jetting will be conducted where the natural energy is insufficient to bury the line. However, jetting will be limited to the upper intertidal through the upper subtidal areas. If the line does not bury itself, Unocal must jet a trench and bury the line to a depth of three feet below the sand bottom (SLC, 1991). If the line becomes unburied and

hazardous in the future, Unocal must then bury the line, as recommended by MBC (1990).

3. Unocal shall abandon the present water return line in place to conform with a recommendation made by the California Department of Fish and Game, with which the California Coastal Commission has concurred (CCC, 1991). Removing the water return line could increase the risk of an oil spill from the oil emulsion line to which it is attached.

4. The California Coastal Commission has required that Unocal incorporate their anchoring mitigation plan (Unocal, 1991) into this project (CCC, 1991). This plan includes the use of an anchor handling boat to set and retrieve anchors vertically in the water column at precise, predetermined locations for both pipeline pulling activities and diver support vessel moorings. Following this procedure will avoid excess scarring of the seafloor and disturbance of the benthic communities.

5. Unocal shall comply with the NPDES limitations as they apply to drilling mud discharges, and shall reduce the level of various EPA-regulated substances to below NPDES permit limitations where possible. MMS will oversee this process by collecting drilling mud samples according to the requirements set out in the MMS/EPA MOA (Section 4.2.3).

4.2.4.2 Marine Mammals

Unocal shall comply with the following mitigation measures designed to protect marine mammals that may occur within the project area. The following mitigation measures were requested by the National Marine Fisheries Service (NMFS letter of November 26, 1991; Appendix A):

1. To comply with provisions of the Marine Mammal Protection Act and implementing regulations and NMFS guidelines, Unocal shall avoid conducting any activity that harasses marine mammals by disturbing or altering the behavior of any marine mammals sighted in the area. Because harbor seals may be present in the project area, Unocal must take precautions to avoid harassing them.

2. If any gray whales are seen in the area, Unocal shall make every reasonable effort to avoid disturbing them. However, if a gray whale is observed to come into physical contact with construction equipment, or to otherwise exhibit distress as a direct result of construction activities, Unocal shall immediately notify the NMFS and MMS.

4.2.4.3 Birds and Terrestrial Wildlife

Unocal shall comply with the following mitigation measures applicable to endangered and candidate species that may occur within the project area. The following mitigation measures were requested by the U.S. Fish and Wildlife Service (USFWS, pers. comm., October 24, 1991):

1. To eliminate potential impacts on least terns and nesting snowy plovers, nearshore and onshore pipeline replacement activities shall be completed before the end of March 1992. If construction activities do not begin until after March 1992, a survey of Mandalay Beach shall be conducted to determine the presence and nesting activities of snowy plovers. If plovers are not present, construction may commence as planned. However, if plovers are present and show signs of breeding, construction shall be delayed until after July 1992 when the plovers should have completed their breeding cycle.

2. To ensure that potential adverse impacts on globose dune beetles are not significant, Unocal shall restrict access to the dunes to a narrow footpath along the pipeline corridor and shall construct fences to reduce or eliminate inadvertent vehicular or pedestrian intrusions on the dunes (Unocal, 1990).

4.3 Commercial and Sport Fisheries

To minimize potential conflicts between fishing activities and the proposed project, Unocal shall meet the following conditions, which are based on requirements of the California Coastal Commission and the California State Lands Commission (CCC, 1991; SLC, 1991) (modified, as necessary, to meet MMS requirements):

1. At least two weeks before commencing pipeline repair and platform modification operations, Unocal shall provide advance notice of the construction schedule to affected Commercial Fishermen's Associations through the Joint Oil/Fisheries Liaison Office, the NOAA Sea Grant Oil and Gas Newsletter for Fishermen and Offshore Operators, and the U.S. Coast Guard Local Notice to Mariners (including vessels involved, radio call signs, and frequencies). Unocal shall also mark the work area with buoys, as required by the California Coastal Commission (CCC, 1991).

2. Construction activities for the nearshore and onshore pipeline replacement activities shall be conducted only during the month of February to avoid the grunion spawning season, as required by the California Coastal Commission (CCC, 1991). Any extension of construction activities beyond March 1, 1992 will require approval by the

California Coastal Commission, based on a recommendation from the California Department of Fish and Game (CCC, 1991).

3. As required by the California State Lands Commission (SLC, 1991), Unocal shall provide to the SLC an "as-built" report within 120 days after completing project construction, including pertinent maps and text indicating any debris and potential hazards or changes to the seafloor that may have occurred during project installation. Hazardous debris shall be removed, and other concerns shall be mitigated, as specified by the California State Lands Commission (SLC, 1991).

4. In addition to meeting the requirements of the California State Lands Commission (SLC, 1991), Unocal shall provide maps of the entire as-built Platform Gina project, including all pipelines and power cables (complete with bathymetric contours, latitude and longitude, and Loran C overlays) to MMS and to the Joint Oil/Fisheries Liaison Officer for distribution to commercial fishermen no later than 120 days after project completion.

5. Unocal shall present the Western States Petroleum Association Fisheries and Wildlife Training Program for Southern California to all vessel operators involved in construction. [This program, including the manual (WOGA, 1985) and other materials, also provides information helpful in mitigating impacts on protected wildlife species.]

4.4 Archaeological Resources

To minimize potential impacts of proposed pipeline repair operations on archaeological resources, Unocal shall adhere to the following mitigation measure:

1. If an archaeological resource is encountered, Unocal shall immediately cease operations and notify the MMS (and the California State Lands Commission if the encounter is inside the 3-mile line), and shall make every reasonable effort to preserve the archaeological resource until instructed either by the MMS or the California State Lands Commission on its preservation, according to provisions of the National Historic Preservation Act and the National Environmental Policy Act.

5.0 Consultation and Coordination

This section describes the consultation and coordination conducted by the MMS in the development of this EA. As part of this process, and in accordance with the requirements of National Environmental Policy Act (NEPA), the MMS sent copies of Unocal's Platform Gina DPP Revision (Unocal, 1990) and other pertinent documents describing the proposed pipeline work and gas field development to 21 state, federal, and local agencies, and to the Joint Oil/Fisheries Liaison Office (Table 5.0-1). As part of the consultation activities, MMS also met with several agencies concerning Unocal's proposed activities.

Table 5.0-1. Agencies and interest groups that received copies of the proposed Unocal action. [* = Agencies/groups that provided the MMS with comments on Unocal's Proposal (Appendix A).]

Federal Agencies	National Marine Fisheries Service* U.S. Fish and Wildlife Service U.S. Army Corps of Engineers U.S. Environmental Protection Agency National Park Service Channel Islands National Marine Sanctuary U.S. Coast Guard U.S. Department of Transportation National Oceanographic and Atmospheric Administration, Office of Ocean and Coastal Resource Management*
State Agencies	California Department of Fish and Game California State Lands Commission* California Environmental Protection Agency* California Division of Oil and Gas California Air Resources Board California Division of Mines and Geology California Coastal Commission*
Local Agencies	County of Santa Barbara* Santa Barbara County Air Pollution Control District* Ventura County, Resource Management Agency* Ventura County Air Pollution Control District* City of Oxnard*
Industry	Joint Oil/Fisheries Liaison Office

A total of 10 agencies responded with written comments. Agency letters and MMS's written responses are included in Appendix A. A summary of written comments to MMS regarding Unocal's proposed pipeline work and gas field development is provided below.

In September 1989, the City of Oxnard informed MMS that Unocal had submitted an application to modify the water return pipeline from Platform Gina. The City of Oxnard also forwarded to MMS their "Preliminary Draft Initial Study for Platform Gina Proposed Return Water Line Replacement and Conversion to Produced Gas" for MMS review.

On October 27, 1989, MMS responded to the City of Oxnard's letter by informing them that Unocal would have to submit an application for the proposed project to the MMS. MMS's response also indicated the need for further NEPA review, and suggested closer coordination with other local, state, and federal agencies.

The City of Oxnard submitted to the MMS on May 11, 1990, their "Final Draft Initial Study for Platform Gina Proposed Return Water Line Replacement and Conversion To Produced Gas," which also included a recommendation for adoption of a Negative Declaration. Comments on the document were also requested.

On May 22, 1990, Unocal made their initial DPP Revision submission to the MMS for the proposed pipeline modification. MMS requested additional information from Unocal on July 19, 1990 and on March 15, 1991.

On May 7, 1991, the MMS met with the California Coastal Commission (CCC) and transmitted a copy of Unocal's preliminary DPP Revision (for Platform Gina) to them for their review.

The CCC, in a July 12, 1991 letter to MMS, invited MMS to participate in a meeting with them and Unocal on July 25, 1991. MMS attended that meeting, and participated in a discussion of specific environmental issues relating to the Revised DPP.

The MMS, in a July 30, 1991 letter to the CCC, clarified what additional documentation would be required for review of the Revised DPP.

The CCC's August 8, 1991 letter to MMS included a list of outstanding issues, and requested additional information they needed to continue their review. Unocal supplied the additional information on September 6, 1991.

On September 20, 1991, MMS notified the California State Lands Commission (SLC) of Unocal's initial submission of the final Revised DPP for Platform Gina.

On September 23, 1991, MMS received the consistency certification for the final Revised DPP for Platform Gina and deemed the DPP Revision "Submitted".

Copies of Unocal's final Revised DPP for Platform Gina were sent to local, state, and federal agencies between September 27, 1991 and October 4, 1991 (Table 5.0-1).

Ventura County APCD requested a copy of two letters from Enersource Engineering that were referenced in Unocal's Revised DPP. MMS sent copies of the July 15 and July 17, 1991 Enersource letters to Ventura County APCD, Santa Barbara County APCD, and California Air Resources Board (CARB) in late October 1991. Also on October 18, 1991 and October 23, 1991 MMS forwarded requested information to CARB and SBCAPCD.

On October 24, 1991 MMS met with the USFWS at their Ventura office to discuss whether endangered and threatened species that could be jeopardized by the proposed project.

On October 31, 1991, MMS hosted an information meeting at its Camarillo office to discuss Unocal's Revised DPP. The meeting was attended by representatives from MMS, Joint Oil/Fisheries Liaison Office, NMFS, Ventura County APCD, State Lands Commission, California Division of Oil and Gas, Unocal, Enersource Engineering, Santa Barbara County Energy Division, Ventura County Planning Department, and Santa Barbara County APCD.

A second information meeting was held at the CCC's offices in San Francisco on November 5, 1991. Attendees included CCC, Unocal, CARB, MMS, EPA, and CEPA.

The City of Oxnard, in a November 5, 1991 letter, stated that they had "... no comments on the DPP Revision for Platform Gina at this time."

In a November 7, 1991 letter to NMFS, MMS requested informal consultation regarding the possible effects of Unocal's proposal upon endangered and threatened species under NMFS jurisdiction. NMFS responded in a November 26, 1991 letter that they had enough information to comment on the possible impacts on species under their jurisdiction. Their comments included possible impacts on gray whales and other marine mammals. They concluded that (a) "... because the project is both brief in duration and small in scale, we feel that it is unlikely that listed species, under our jurisdiction, will be adversely affected by the project"; and (b) "... Since it is possible that harbor seals may be present in the project area, precautions should be taken in order to avoid potentially harassing them ...."

In a November 27, 1991 letter to the MMS, the Ventura County APCD commented on the Revised DPP. Their comments included a list of conditions that Unocal should be obligated to meet regarding air emissions.

NOAA's Office of Ocean and Coastal Resource Management, in a December 5, 1991 letter, stated that they had no comment on the proposed revisions to the DPP.

In a December 9, 1991 letter, the Santa Barbara County Resource Management Department (SBCRMD), commenting on the Revised DPP, expressed concern about the handling of elemental sulfur resulting from the H_2S gas sweetening processes. The SBRMD also requested that the MMS require implementation of current BACT standards for the drilling phase of the proposed project.

In a December 16, 1991 letter to MMS, the CCC informed MMS that Unocal had agreed to several mitigation measures and project revisions to reduce the level of impacts to coastal and marine resources. The CCC requested that these measures be reflected in Unocal's Revised DPP. In a December 19, 1991 letter to the CCC, MMS verified that Unocal had requested permission to amend the project description to incorporate the aforementioned measures (Unocal letter of December 17, 1991).

The MMS, in a December 27, 1991 letter, requested written confirmation of the completion of the informal Section 7 consultation from the USFWS.

The MMS, in a January 6, 1992 letter to VCAPCD, verified inclusion of their conditions into Unocal's Revised DPP, and asked VCAPCD to comment on the inclusions. VCAPCD (January 7, 1992 letter) responded that they had reviewed the inclusions and had no further comments.

On January 14, 1992 the CCC concurred with Unocal's Consistency Certification for the proposed project.

The MMS staff also made and received numerous telephone contacts with agency personnel, the Joint Oil/Fisheries Liaison Office, and Exxon. The purpose of these contacts was to discuss potential impacts and mitigation, and to discuss further information requests to assist in preparing this EA. The issues discussed are summarized in Table 5.0-2.

Table 5.0-2. Summary of issues discussed for Platform Gina DPP Revision.

Issue Area	Impact Agents and Potential Impacts	EA (pages)
Marine Geology	Destruction of hard-substrate and trenching in soft substrate due to anchoring operations and onshore operations	3-2, 4-2
Air Quality	Emissions due to flaring and H_2S in fugitive hydrocarbons	3-4, 4-2
	Emissions resulting from pipeline repair, platform construction, drilling operations, vessel traffic, and fugitive hydrocarbons	3-3, 4-2
Marine Water Quality	Degradation of water quality due to discharge of muds and cuttings, hydrotest fluid, and additional produced water	3-10, 4-4 3-11, 4-4 3-12, 4-4
	Impacts of accidental oil spills from pipeline rupture or well blowout	3-15, 4-4, 4-5
	Toxic effects of sulfur and H_2S sweetening chemicals if spilled	3-14, 4-4 3-15, 4-4
Biological Resources	Effects of anchor scarring and crushing on subtidal benthos; disturbance of surf zone species	3-20, 4-6
	Effects of additional produced water on pelagic fish eggs and larvae	3-12, 4-4
	Potential disturbance of protected marine mammals (gray whales, harbor seals)	3-22, 4-6
	Potential disturbance of endangered or candidate avian and terrestrial species (snowy plovers, least terns, brown pelicans, globose dune beetles)	3-25, 4-7
Sport and Commercial Fishing	Space-use conflicts during construction operations	3-28, 4-7
	Snagging problems if pipeline does not self-bury or becomes uncovered	3-29, 4-7
Archaeological Resources	Disturbance of submerged archaeological sites and shipwrecks from anchoring and other construction activities	3-31, 4-9

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U.S. Department of the Interior (USDOI), Fish and Wildlife Service (USFWS). 1979. Biological opinion regarding oil and gas exploration and certain development activities in southern California. Memorandum from Acting Director, USFWS, to Director, USGS. November 1, 1979.

Ventura County Air Pollution Control District (APCD). 1991. Ventura County 1991 Air Quality Management Plan. October 8, 1991.

WESTEC Services, Inc. 1986. Supplement to Santa Clara Unit environmental report for Platform Gail and subsea pipelines. Prepared for Chevron U.S.A., Inc. WESTEC Services, Inc., Ventura, CA. Project No. 35063.

Western Oil and Gas Association (WOGA). 1985. Fisheries and wildlife training program for Southern California. Prepared by WOGA with assistance by Hooks, McCloskey & Associates, Inc., Radnor, PA.

APPENDIX A

Correspondence from and to
Agencies/Groups Providing Comments on
UNOCAL's Platform Gina DPP Revision

CITY OF
Oxnard

COMMUNITY DEVELOPMENT DEPARTMENT • 305 W. THIRD ST. • OXNARD, CA 93030 • (805) 984-4657

RICHARD J. MAGGIO, DIRECTOR

September 18, 1989

Mr. Tom Dunaway
Regional Supervisor
Minerals Management Service
1340 West 6th Street
Los Angeles, CA 90017

Dear Mr. Dunaway:

Unocal Oil and Gas Division has made application to the City of Oxnard for modification to Special Use Permit 806 to permit the change of use of a return water line to Platform Gina to a produced gas line. EIR/EA 78-19 was certified for the original project, approved as Special Use Permit 806.

The scope of the analysis provided in EIR/EA 78-19 included discussion pertaining to Platform Gilda of the possibility of producing oil and gas from the Monterey Formation, scrubbing the gas on the platform and piping the gas to on-shore facilities; however, that discussion did not pertain to Platform Gina. The EIR/EA states specifically that even though Platforms Gina and Gilda are evaluated in the same document, they are separate projects for the purposes of permitting. Therefore it is our conclusion that because the subject line was described in the original project description, environmental work, and approved permits as only a return water line, and because the proposed pipeline conversion project was not described in the original project description for Platform Gina in the certified EIR/EA, further documentation and analysis is required under the provisions of CEQA.

Based on this conclusion, staff has completed an Initial Study for each of the two major components of the proposal, referencing all information available in the certified EIR and extensive new background material submitted by the applicant. Component 1 of the proposal is the Platform Gina Return Water Line Replacement and Component 2 is the Pipeline Conversion to Produced Gas. Both components of the proposal are evaluated in the Initial Study with all supporting information attached.

The requested pipeline conversion project is summarized herein with the complete text of the Unocal Project Description attached as Exhibit A to the Initial Study. Exhibit B to the Initial Study contains the November 18, 1988 Approval of a Modification to Special Use Permit 806 and Planning Commission Resolution 6218 which provide the original conditions of approval. An overview of the scope of the analysis in EIR/EA 78-19 in relation to both Platform Gina and Platform Gilda is provided as Exhibit C to the Initial Study.

Please review the preliminary draft Initial Study and supporting information and let us know if further information is required. Concurrently with this process of review, Unocal, at the City's request will proceed to contact qualified Risk Assessment Engineering firms to provide a verification review of proposed and alternate system designs related to monitoring, detection, shutdown, and alarm functions. Please contact me at (805) 984-4657 if you have questions. We request that your agency provide a written response, either requesting information and/or indicating concurrence with the conclusions of the Initial Study by October 18, 1989.

Sincerely,

Ralph J. Steele
Associate Planner

Summary of Proposed Pipeline Conversion Project

Platform Gina, located 6 miles southwest of Oxnard, California within OCS P-0202 has been in production in the Hueneme zone since 1982. Oil and water separation and treating are conducted at the Mandalay facility located within the City of Oxnard, with produced water being returned to Platform Gina through a 6-5/8 pipeline for disposal. This pipeline has not been in service since October, 1988 when leaks were detected in the pipeline near the Mandalay facility. The proposed project involves repairing and then converting the 6-5/8 pipeline from water return service to produced gas transport. The exploratory well is now being tested to evaluate the gas reserves underlying OCS leases P-0202 and OCS P-0203.

The phases of the project required to test and evaluate the exploratory well (H-14) will include the installation of gas processing and scrubbing equipment on Platform Gina, conversion of the 6-5/8 inch pipeline to gas sales service, and the modification of piping at the Mandalay facility.

Gas reserves underlie Platform Gina in OCS tracts P-0202 and P-0203 in the Sespe and Monterey zones. Exploratory wells have been drilled in 1985 and 1988. The first two have been plugged, but well H-14 is currently testing in the Sespe zone that underlies the Monterey zone. The Monterey zone is potentially productive in well H-14. The zone may be a sour gas (hydrogen sulfide) zone, in which case all gas will be sweetened offshore prior to either flaring for short term testing or transportation through either of the pipelines to shore for long term testing or gas sales. It is intended that no hydrogen sulfide gas will be transported to the Mandalay facility through either pipeline. Eight wells would be required in the Monterey zone for full development of the gas reservoir.

The exact concentration of hydrogen sulfide which the Monterey zone will have is not known currently. Based on experience in the Santa Barbara Channel and results obtained in pertinent drill stem tests, it is assumed that the gas will be similar to gas encountered in well OCS P-0203 #6. This is the closest Monterey zone well to Platform Gina which has encountered sour gas. The applicant states that no gas will be sent to the Mandalay facility until sweetened offshore to conform to the gas sales specification of 0.3 grains per 100 standard cubic feet or 4 ppm, which is more stringent than the OSHA-PEL standard of 20 ppm. (see full text of project description and its Appendix A). Unocal proposes offshore treatment to prevent the shipment of sour gas to on-shore facilities, and includes use of both chemical scavenging and treatment plant technologies. Continuous monitors will be located both on Platform Gina and at the Mandalay facility and are designed to activate an alarm should a treating system upset occur that results in a hydrogen sulfide concentration of 2 ppm in the gas stream. The monitors will activate shutdown of the gas producing well or wells should the hydrogen sulfide concentration reach 4 ppm.

The repair of the 6-5/8 pipeline between the Mandalay facility and Platform Gina involve replacing 2,700 feet of the pipeline from a point 400 feet above the Mean High Tide Line (MHTL) landward toward the Mandalay facility to a point 2,400 feet from the MHTL seaward toward Platform Gina. The repair involves the following steps: locate the pipeline in reference to the beach and ocean floor; cut the pipe at the onshore and offshore tie in points; pressure test the pipeline to 900 psi from the cut point to Platform Gina; weld together the 2,700 feet of replacement pipe on the beach; and pull the replacement pipe to the offshore tie in point and perform the tie in; then perform the on-shore tie in approximately 400 feet landward from the MHTL. Upon completion, Unocal and the contractor will be responsible for removal of the construction fence and for clean up of all material, regrading the beach and recontouring and revegetating any disturbed areas.

In order to process and transport the gas produced from Platform Gina, equipment will be installed on Platform Gina and some piping modifications will be made at the Mandalay facility. The initial equipment installed on Platform Gina will include a gross separator, two batch sweeteners, a flare scrubber, a hydrogen sulfide line monitor, and a final gas scrubber. The batch sweeteners will each be capable of treating a gas volume of 3.MMLSCF/day and sweetening from a hydrogen sulfide level of 2,000 ppm to less than 4 ppm. The associated liquid production will be handled by an existing shipping tank with two triplex pumps, each of which are capable of 2,000 barrels of liquid per day. This liquid will be shipped to Mandalay through the 10-3/4 inch pipeline. (Flow schedules of all the equipment can be found in Appendix F to the Unocal Project Description which is attached as Exhibit A to the Initial Study).

As the operation shifts from the exploratory and testing phase to full field development, additional facilities and equipment may be needed. This could include the installation of additional deck space along the south side of Platform Gina to allow for some of the equipment. The additional equipment could include a standard production and test header system, a test separator, a gas dehydration unit, a permanent sweetening plant, and gas compressors. The actual equipment needed would be based on future well test results and detailed reservoir evaluation.

150

October 27, 1989

Mr. Ralph Steele, Associate Planner
City of Oxnard
Community Development Department
305 West Third Street
Oxnard, CA 93030

Re: Platform Gina and Return Water Pipeline

Dear Mr. Steele:

By letter dated September 18, 1989, you transmitted to us a Preliminary Draft document entitled "Initial Study for Platform Gina Proposed Return Water Line Replacement and Conversion to Produce Gas Line" prepared by the City of Oxnard, which indicates the applicant as being Unocal Oil and Gas Division. We have revied the document but will have no comment on the project until Unocal submits a proposal to this office.

The project changes specified in the document are not covered by the Minerals Management Service-approved Development and Production Plan and pipeline permit, so Unocal needs to submit a proposal to us covering changes on the platform and to the return water line. We would be able then to commence a technical and environmental review of the proposal. The type of environmental review required under the National Environmental Policy Act would be determined at that time.

During an October 18, 1989 telephone conversation with Mr. Ed Lee, of this office, you referred to the Memorandum of Understanding (MOU) that had been entered into in 1979 on the preparation of a joint Environmental Study covering Unocal's project. The Study referred to in the MOU is the "Environmental Impact Report/Environmental Assessment; Union Oil Company; Platform Gina and Gilda Project; Leases OCS-P 0202 and P 0216; Offshore Ventura County, California" (EIR/EA). On page 1.0-3 of the EIR/EA, the City of Oxnard and the United States Geological Survey (now the Minerals Management Service) are specified as the lead agencies.

In the MOU, under Completion of Study, the following items are included: "Upon completion and certification by the City of the final Study, notification shall be made by the City to the state Resources Agency pursuant to CEQA." and "Unless an extension is otherwise previously agreed upon by all parties, this agreement shall expire on date of above certification." We understand that the EIR/EA was certified in 1980, and with no extensions, the MOU would no longer be in effect.

However, we know that the project changes will involve environmental review and permitting by several local, State and Federal agencies, and we can see the great value of close coordination among all responsible agencies in order to ensure that a well-defined project is evaluated by all agencies, and to facilitate timely review and permitting of the changes. Accordingly, we would be more than willing to continue working with the City of Oxnard on reviewing the project changes in question. After the proposal has been made to us by Unocal, we would then be in a position to pursue this matter further.

If you have any questions, please call Mr. Ed Lee at (213) 894-5114.

Sincerely,

(Sgd.) R. S. Ballantyne

Thomas W. Dunaway
Regional Supervisor
Office of Field Operations

bcc: FILE: [1703-02a(1)] Hueneme Field, OCS-P 0202 DPP Corr.
Chron
RD
RS, OLE (Attn: Env. Ops. Sect.)
DS, V
C/OR&A
GShackell
ELee

OFO:ELee:iw:WP5:Steele.EL:10/27/89

CITY OF Oxnard

COMMUNITY DEVELOPMENT DEPARTMENT • 305 W. THIRD ST. • OXNARD, CA 93030 • (805) 984-4657

RICHARD J. MAGGIO, DIRECTOR

May 11, 1990

Mr.Thomas W. Dunaway
Regional Supervisor
Minerals Management Service
1340 West 6th Street
Los Angeles, CA 90017

Dear Mr. Dunaway:

In October of 1989, the City of Oxnard provided your agency with a preliminary draft copy of an initial study for the proposed Platform Gina return water line replacement and conversion to transporting produced gas. We appreciate the careful review and comments you provided.

Unocal has revised the original project description to address identified concerns and incorporate recommended measures to ensure that the proposed project will have no significant impact on the environment. The project description has been revised accordingly and is contained as an Exhibit in the Final Draft Initial Study enclosed for your review.

On the basis of the Initial Study, the City of Oxnard has determined that the proposed project will not produce or be subject to significant environmental effects. Therefore, the Community Development Director will recommend to the Planning Commission that a Negative Declaration be adopted without any additional mitigation required.

The public comment period for the Negative Declaration will begin May 14 and will close on June 14. If you wish to provide further comment, please direct correspondence to me at the address above. All written comments received during the public comment period will be included in the final Initial Study document provided to the Planning Commission prior to their decision on the proposed project.

Sincerely,

Ralph J. Steele
Associate Planner

Enclosure

Unocal Oil & Gas Division
Unocal Corporation
2323 Knoll Drive, PO Box 6176
Ventura, California 93006
Telephone (805) 656-7600

UNOCAL 76

May 22, 1990

Mr. Thomas W. Dunaway
Minerals Management Service
1340 W. Sixth Street
Los Angeles, CA 90017

RE: PLATFORM GINA
Offshore California
Development Plan of Production
Revision
30 CFR 250.34
Pipeline Repair & Conversion
Project

Dear Mr. Dunaway:

By letter dated March 8, 1990 the Minerals Management Service requested Union Oil to submit applications in accordance with MMS Regulations regarding the revision of the Development Plan of Production (DPP), Pipeline Permit Applications, Measurement of Gas and Surface Production Safety Systems.

Union Oil hereby makes application in this document for revision to the Development Plan of Production pursuant to 30 CFR 250.34. Enclosed you will find six copies of the draft, DPP revision, with two sets of the information considered proprietary. The environmental data requested in your letter is incorporated in the DPP and will address 30 CFR 250.34 Sections (b)(8)(V), (9), (10), (11) and (12).

Unocal is aware of the fact that structural changes to the platform will require Platform Verification Program review. Early stages of the current project will not require structural modifications. Unocal will submit the necessary platform modifications at a later date.

The produced water which was returned to Gina for disposal is currently being returned to Gilda via a 6-5/8" pipeline for disposal by NPDES permit.

Provisions were made for encountering hydrogen sulfide prior to drilling of the H-13 and H-14 wells. At that time a hydrogen sulfide contingency plan was developed. Subsequently, the plan was updated with the most recent update in April 1990.

Should you have any comments or questions please contact the undersigned.

Very truly yours,

UNION OIL COMPANY OF CALIFORNIA

William W. Weldon

William W. Weldon
Landman

WWW:ka
Enclosures

cc: Ms. Suzanne Rogalin
California Coastal Commission

Mr. Ralph Steele
City of Oxnard

STATE OF CALIFORNIA—THE RESOURCES AGENCY PETE WILSON, Governor

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200

Mike Silverman OLE

July 12, 1991

Thomas Dunaway
Regional Supervisor
Office of Field Operations
Minerals Management Service
Pacific OCS Region
770 Paseo Camarillo
Camarillo, CA 93010

Dear Mr. Dunaway:

As you and I discussed on July 12, 1991, as part of the Commission staff's preliminary review of UNOCAL's Development and Production Plan Revision: Pipeline Conversion Project, UNOCAL will be meeting with the staff to discuss the project in greater detail.

I would like to take this opportunity to invite MMS to participate in this meeting, which is scheduled as follows:

Date: Thursday, July 25, 1991
Time: 1:30 PM
Place: California Coastal Commission
Headquarters Office
45 Fremont Street, Suite 2000
San Francisco, CA 94105

The purpose of the meeting is to discuss all the components of UNOCAL's project and the adequacy of the information UNOCAL has submitted to MMS to fully address the impacts to the Coastal Zone. The Commission staff welcomes any additional comments concerning this project MMS may want to raise at the meeting.

I look forward to continue working with your staff to facilitate this joint consistency review process for UNOCAL.

Sincerely,

Robin Blanchfield
Coastal Energy Analyst

MINERALS MANAGEMENT SERVICE
PACIFIC OCS REGION
RECEIVED
JUL 17 1991
FIELD OPERATIONS
CAMARILLO

4713N

7200

July 30, 1991

Ms. Susan Hansch
Manager, Energy and Ocean Resources Unit
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

Re: California Coastal Commission/
Unocal Meeting

Dear Ms. Hansch:

I appreciate the opportunity you provided representatives from the Minerals Management Service (MMS) to participate in last Thursday afternoon's meeting between Unocal and the California Coastal Commission (CCC) as well as the opportunity provided to meet with you and members of your staff on an individual basis throughout the day. At the meeting, Unocal's proposed Development and Production Plan (DPP) Revisions for Platform Gina were discussed. According to my staff, the meeting was very useful in helping both Unocal and the MMS understand some of your agency's concerns with the project. The meeting was also helpful in clarifying for Unocal the time that will be required for both the CCC and MMS to conduct their reviews.

As a result of the meeting, we understand that the CCC will be sending the MMS a list of additional information that is needed to review the Platform Gina DPP revisions. After Unocal adds this information to the DPP, MMS will send the information to you and request that the CCC commence the consistency review for Unocal's proposed DPP revisions. We look forward to working closely with the CCC on this project to ensure a good coordinated effort.

Also at the meeting, Unocal's proposal for Platform Gina pipeline repairs was discussed. Robin Blanchfield requested some additional information items from both Unocal and the MMS. The MMS will be sending these additional items to you as soon as we receive the information from Unocal.

As you are aware in addition to attending the meeting with Unocal, Ms. Melinda Mayes of my staff and Mr. John Lane of the Office of Leasing and Environment visited with several members of your staff to discuss other projects that are currently under review by the MMS and the CCC. We will be sending you follow-up letters on these projects this week.

Mr. Lane and Ms. Mayes also had an opportunity to discuss the Santa Ynez Unit (SYU) Expansion Project with you and with Mr. Cy Oggins of your staff. As we indicated, we will be sending you several documents concerning the SYU Expansion Project for your review in the near future.

Again, I appreciate the opportunity you provided us to meet with you and your staff. I look forward to contining to work with the CCC on these and other projects of mutual interest. Should you have any questions on any projects currently under review by MMS and the CCC or think that additional meetings would be helpful, please call me or Melinda Mayes, of my staff, at (805) 389-7560 or (805) 389-7578, respectively. We are always available to meet with you when the need arises.

Sincerely,

(ORIG. SGD.) WILLIAM A. ADERT

Thomas W. Dunaway
Regional Supervisor
Office of Field Operations

bcc: File: 1703-02a(1) Point Hueneme Unit, Platform Gina DPP General Correspondence
RD
Chron
RS/OLE attn: John Lane, C/EOPS
\Maurice Hill, EOPS
C/POS
S/OAEU
S/PPPU
GCShackell
LAMonahan

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CITY OF Oxnard

COMMUNITY DEVELOPMENT DEPARTMENT • 305 W. THIRD ST. • OXNARD, CA 93030 • (805) 984-4657

RICHARD J. MAGGIO, DIRECTOR

November 5, 1991

Noted - Dunaway

Mr. Thomas W. Dunaway, Regional Supervisor
Office of Field Operations
U. S. Department of the Interior
Mineral Management Service
Pacific OCS Region
770 Paseo Camarillo
Camarillo, California 93010

copy to:
RS/OLE
C/EOPS
Sitewise
11/25/91

Subject: Platform Gina Development and Production Plan Revision

Thank you for the opportunity to review the Unocal Corporation's Development and Production Plan (DPP) Revision to the Minerals Management Service (MMS) for Platform Gina located on Lease OCS-P 0202. The onshore pipeline repair and conversion of the pipeline to produce gas transport service is consistent with the modification approved by the City of Oxnard's Planning Commission in February 1991. Consequently, the Planning Division has no comments on the DPP Revision for Platform Gina at this time.

Matthew G. Winegar, AICP
City Planner

MGW:DST:jly

7300

Mr. E.C. Fullerton
Regional Director
National Marine Fisheries Services
300 South Ferry Street
Terminal Island, CA 90731

Dear Mr. Fullerton:

This letter is in reference to Unocal's revised development and production plan for Platform Gina. A copy of the revised plan was forwarded to your office on October 1, 1991.

Briefly, the project includes Unocal's proposal to develop a new gas field from Platform Gina and to repair and convert to gas service an existing water return pipeline. The pipeline connects Unocal's Mandalay processing facility (in the City of Oxnard) to Platform Gina. The drilling of a maximum of seven (7) additional wells, to facilitate gas production from new reservoirs, is also proposed.

We would like to request to begin informal consultation with your agency regarding the possible effects of this project to any threatened or endangered species that are under your jurisdiction. Specifically, during meetings with Unocal and governmental agencies, questions regarding possible effects to Gray Whales and to Pinniped haul out areas arose.

We will be contacting your office in the near future in order to arrange for a mutually agreeable meeting date. Thank you for your assistance in this matter. If you have any questions, please feel free to contact Michael Silverman, of my staff at (805) 389-7825, or (FTS) 683-7825.

Sincerely,

RICHARD L. WILHELMSEN

Richard L. Wilhelmsen
Regional Supervisor
Office of Leasing and Environment

bcc: FILE: 1102-01a Platform Gina DPP Corr.
RD
Chron
RS, OLE
RF
Chief, EOS
RS10FC

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southwest Region
300 South Ferry Street
Terminal Island, CA 90731

November 26, 1991 F/SWR31:IVL

Richard L. Wilhelmsen
Regional Supervisor
Office of Leasing and Environment
United States Department of the Interior
Minerals Management Service
Pacific OCS Region
770 Paseo Camarillo
Camarillo, California 93010

Dear Mr. Wilhelmsen:

This is in response to your request for informal consultation under section 7 of the Endangered Species Act (ESA) and for information on effects to pinnipeds for activities associated with Unocal's proposal to develop a new gas field from Platform Gina.

The information submitted with your letter provided the necessary information to allow our Protected Species Management Division to assess the potential environmental impacts associated with the Unocal proposal on listed marine species. We have determined that marine species, under our jurisdiction, are not likely to be adversely affected by the proposed action.

Unocal is proposing to develop a new gas field from Platform Gina and to repair and convert to gas service an existing water return pipeline. The proposed 2700 feet of new pipeline will connect Platform Gina with Unocal's Mandalay processing facility located in the City of Oxnard. The project is anticipated to begin in February 1992 and is expected to be completed within 19 days. Since the project will occur during the period and in the area of gray whale migration it is possible that gray whales may be affected by the proposed action. However, because the project is both brief in duration and small in scale, we feel that it is unlikely that listed species, under our jurisdiction, will be adversely affected by the project.

This concludes section 7 consultation responsibilities for the proposed activity. However, consultation must be reinitiated if: (1) new information reveals impacts of the project that may affect listed species in a manner or to an extent not considered previously; (2) the identified activities are modified in a manner that causes an adverse effect to listed species; (3) a new species is listed or critical habitat is designated that may be

affected by the proposed activities.

Marine mammals that are not listed under the ESA are, nevertheless, protected under the Marine Mammal Protection Act (MMPA). The National Marine Fisheries Service (NMFS) is responsible for the management of all members of the order Pinnipedia, except the walruses, and all members of the order Cetacea. Under the MMPA it is unlawful to "take" marine mammals, whereby take means to harass, hunt, capture, or kill any marine mammal. The NMFS has interpreted "harassment" to be any activity that disturbs the previous behavior or changes the natural behavior of a marine mammal. Since it is possible that harbor seals may be present in the project area, precautions should be taken in order to avoid potentially harassing them.

If you have any questions, please contact Craig Wingert, Protected Species Management Division, at (310) 514-6686.

Sincerely,

Rodney R McInnis

for E. C. Fullerton
Regional Director

cc: F - William W. Fox, Jr.

COUNTY OF VENTURA

91 NOV 27 AM 11:06

RESOURCE MANAGEMENT AGENCY/APCD

Memorandum

TO: Tom Berg, Director
Resource Management Agency

DATE: November 14, 1991

FROM: Richard Baldwin
Air Pollution Control Officer

SUBJECT: PLATFORM GINA DEVELOPMENT AND PRODUCTION PLAN REVISION

APCD staff has reviewed UNOCAL's proposal for modifications to Platform Gina for consistency with APCD rules. Since our April 9, 1990, review of this project, the Ventura County Air Pollution Control Board has adopted revisions to APCD Rule 26, New Source Review. Revised Rule 26 implements the California Clean Air Act requirement of "no net increase in emissions" by requiring all emissions increases of NOx and ROC to be fully offset. Rule 26 also requires SO_2 emissions to be offset if they exceed 15 tons per year. Also since our previous review of this project, the 1990 Federal Clean Air Act Amendments were passed by Congress. The Act requires that air pollution control requirements for offshore sources be the same as the requirements that would apply if the source were located onshore. The Act requires EPA to establish these requirements and that they become effective on November 15, 1991, for new or modified sources such as the proposed modifications to Platform Gina.

The following comments address measures that UNOCAL should take to ensure consistency with onshore air pollution control requirements. UNOCAL has verbally agreed to these measures. Until EPA develops a rule to implement onshore requirements on the OCS, the following measures should be either included as conditions on the MMS permit, or become part of a separate contract between UNOCAL and the APCD.

1. UNOCAL shall provide offsets in accordance with APCD Rule 26, New Source Review, for all permanent NOx and ROC emissions increases caused by the project.

2. UNOCAL shall provide offsets in accordance with APCD Rule 26, New Source Review, for all permanent SO_2 emissions increases caused by the project if such emissions are projected to exceed 15 tons per year.

3. UNOCAL shall install BACT (Best Available Control Technology) in accordance with APCD Rule 26, New Source Review, on all new and modified gas processing equipment on Platform Gina. The Santa Barbara County APCD has established BACT for onshore sulfur recovery units as a tail gas clean-up unit with 99.9%

control or 100 ppmv H_2S incinerator feed gas, whichever is more stringent. The District will make a formal determination of BACT on request. Since BACT determinations require a substantial amount of APCD staff time, UNOCAL shall reimburse the District for the time spent in making the BACT determination in accordance with the District's fee schedule.

4. UNOCAL shall operate all components on Platform Gina in compliance with the provisions of VCAPCD Rule 74.10, Components at Crude Oil Production Facilities and Natural Gas Production and Processing Facilities. UNOCAL shall submit an Operator Management Plan as required by Rule 74.10 within 90 days of the commencement of gas production or processing.

5. UNOCAL shall adjust the SO_2 emission factor and resulting calculated emissions if the actual H_2S concentration of the sour gas is found to be different than the assumed value of 2000 ppm. For the purpose of preliminary estimations, the emission factor of 357.2 lbs/MMCF shall be used.

6. UNOCAL shall continuously record the gas flaring rate (not including well testing operations) and calculate emissions using the following emission factors to demonstrate that annual emissions do not exceed the amount of offsets that have been provided for the project:

ROC - 144 lbs/MMCF
NOx - 51.5 lbs/MMCF
SO2 - 357.2 lbs/MMCF (or as described in #5 above)*
CO - 40 lbs/MMCF
PM - 3 lbs/MMCF

* If sweetened gas is flared, the emission factor shall be adjusted accordingly.

UNOCAL shall make such records available to the District on request.

7. UNOCAL shall treat the gas flared during well testing operations to less than 300 ppm H_2S. UNOCAL shall collect and analyze at least one gas sample per day of well testing to confirm that the H2S concentration does not exceed 300 ppm.

If you have any questions concerning this matter, please contact Chris Frank at (805)645-1409.

RESOURCE MANAGEMENT AGENCY

county of ventura

THOMAS BERG
Agency Director

November 27, 1991

Mr. Thomas Dunaway
Regional Supervisor - Office of Field Operations
Minerals Management Service, Pacific OCS Region
770 Paseo Camarillo
Camarillo, CA 93010

Subject: County of Ventura Comments on Platform Gina Development and Production Plan Revision

Dear Mr. Dunaway:

Documents relating to the above referenced project have been reviewed by appropriate Ventura County agencies. Specific reviewing agency comments are attached.

Please respond to the comments as required by the National Environmental Policy Act/California Environmental Quality Act. All responses should be addressed to the commenting agency with a copy to the Commercial/Industrial Section, Resource Management Agency.

Sincerely,

RESOURCE MANAGEMENT AGENCY

FOR
Thomas Berg, Director

TB:j/1K254-0.91

Attachments

cc: Board of Supervisors
Richard Wittenberg, CAO
Susan Hansch, California Coastal Commission
Charles Warren, California State Lands Commission
Richard Maggio, City of Oxnard
Bill Douros, County of Santa Barbara
William Weldon, Unocal

Government Center, Hall of Administration Building
800 South Victoria Avenue, Ventura, CA 93009 (805) 654-2661

COUNTY OF VENTURA

ENVIRONMENTAL HEALTH DIVISION

M E M O R A N D U M

TO: Bill Stratton **DATE:** 11/12/91

FROM: Greg Smith

SUBJECT: **PLATFORM GINA PRODUCTION PLAN REVISION**

The increased drilling activity that would accompany the Platform Gina Development and Production Plan revision would increase the volume of hazardous waste brought into the Port of Hueneme from the Platform.

The increased volume of hazardous waste would increase truck traffic in the area. This will increase the risk of an accident involving hazardous waste either during the off-loading of waste from the boats onto hazardous waste hauling trucks or during accidents involving the trucks themselves. It is interesting to note that Cal-EPA, Department of Toxic Substances Control declared that a Hazardous Waste Treatment Storage Disposal Facility Permit (TSDF) was required because the activity of transferring hazardous waste from a boat to a truck constituted an activity that required a State TSDF permit. To date the Cal EPA has not issued or even pursued this required permit.

Additional storage of hazardous waste at on-shore facilities would also be increased. There is probably adequate storage capacity to store this waste. There will need to be increased inspections to ensure that on-shore storage of off-shore waste is done legally. Hazardous waste can only be stored at a site away from the original site that generated the waste for 144 hours (5 days).

County of Santa Barbara
AIR POLLUTION CONTROL DISTRICT
26 CASTILIAN DRIVE B-23, GOLETA, CALIFORNIA 93117
PHONE: (805) 961-8800 FAX (805) 961-8801
JAMES M. RYERSON
Air Pollution Control Officer
WILLIAM A. MASTER
Assistant Director

December 2, 1991

Mr. Thomas Dunaway
U.S. Department of Interior
Minerals Management Service
Office of Field Operations
770 Paseo Camarillo
Camarillo, CA 93010

RE: *Proposed Revision to Platform Gina's Development and Production Plan (DPP)*

Dear Mr. Dunaway:

The Santa Barbara County Air Pollution Control District appreciates the opportunity to review the subject project. The 1990 Amendments to the Federal Clean Air Act mandate that, as of November 15, 1991, offshore emission sources comply with local rules and regulations. Since the project is geographically closest to Ventura County, the Ventura County Air Pollution Control District (VCAPCD) rules would apply to the proposed modifications. We concur with the conditions on the project described in VCAPCD's November 19 letter to the California Coastal Commission. We do, however, have the following additional comments.

1. The documentation associated with the Development and Production Plan (including the two letters from EnerSource Engineering, dated July 15 and 17, 1991) is insufficient to quantify all the operational emissions associated with the proposed modifications. This documentation has focused primarily on emissions from the flare, with little information on other emission sources. Information sufficient to quantify the incremental increase in emissions associated with the proposed modifications must be provided to VCAPCD prior to construction. This would include the emissions of existing operations, so that the incremental emission increase can be verified and offset by other emission reductions.

2. Unocal should quantify any permanent increase in crew and work boat emissions associated with the proposed operations; such emission increases must also be offset.

3. We are in receipt of a November 21 letter from William Weldon of Unocal to Melinda Mayes in your office. This letter indicates that Unocal's responses to our preliminary (November 13) comments and VCAPCD's November 15 comments on the proposed project are attached to the letter. Our copy of this November 21

letter included only Unocal's responses to VCAPCD's comments; it did not include their responses to our comments.

If you have any questions on these comments, please contact Deborah Pontifex at 805-961-8830.

Sincerely,

for James M. Ryerson
Air Pollution Control Officer

cc: Bill Dillon, County Counsel
Chris Frank, Ventura County APCD
Susan Hansch, CCC
Phil Sheehan, SBCAPCD

USER\PLAN\DSP\WP\120291.WP5

California Environmental Protection Agency

Air Resources Board • Department of Pesticide Regulation • Department of Toxic Substances Control • Integrated Waste Management Board
Office of Environmental Health Hazard Assessment • State Water Resources Control Board • Regional Water Quality Control Boards

Pete Wilson
Governor

James M. Strock
Secretary for Environmental Protection

December 2, 1991

Copy to: AQ; Env. Urg
RS, OE
Myers
Silverman
Mancha

Mr. Thomas W. Dunaway
Regional Supervisor
Office of Field Operations
U.S. Department of the Interior
Minerals Management Service
Pacific OCS Region
Camarillo, California 930010

Dear Mr. Dunaway:

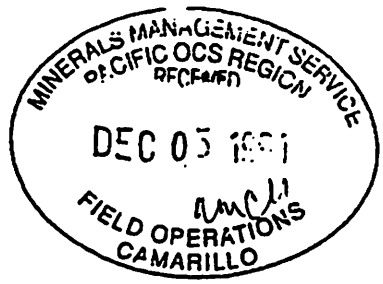
Thank you for the opportunity to review the proposed modifications to the approved Development and Production Plan (DPP) for the Platform Gina Pipeline Conversion Project. As the Governor's OCS Project Coordinator, I circulated the proposed modifications to the affected State agencies, and requested their comments and concerns related to the project changes and any attendant environmental effects. Additionally, a meeting with the Department of the Interior and UNOCAL was held at the Coastal Commission's San Francisco office on November 5, 1991 to discuss the DPP.

The concerns identified by the involved State agencies are related to air emissions, and I have attached detailed comments. Additionally, the Platform Gina Project is undergoing a review by the California Coastal Commission to determine if the Plan is consistent with the California Coastal Management Program (CCMP). The Commission has scheduled a hearing for the week of December 10, 1991 to certify its consistency with the CCMP. Should the Commission or the other State and local agencies raise added concerns once this information is available, we will provide them to you.

Again, I appreciate this opportunity to review the proposed project modifications, and I will provide you with any additional comments should any concerns be raised regarding the pipeline portion. In the meantime, please contact Jim Bennett of my staff at (916) 324-7584 should you have any questions.

Sincerely,

James M. Strock
Secretary for Environmental Protection



cc: Will Shafroth, Resources Agency
Susan Hansch, Coastal Commission
Gene Kjellberg, Ventura County
Craig Fusaro, Liaison Committee

555 Capitol Mall, Suite 235 • Sacramento, California 95814 • (916) 445-3846 • Fax: (916) 445-6401

Detailed Comments

1. The project does not appear to include NOx and SOx controls on all diesel engines (including those used in construction equipment and vessels). The project also does not include an inspection and maintenance program for fugitive hydrocarbon emissions on the platform. The DPP should identify each emission source, the most effective emissions controls available for each source, and the controls proposed for each source.

2. It is not clear that all emissions sources are considered in the DPP. For example, the increase in fugitive hydrocarbon emissions and H2S on the platform from the additional gas processing components is not quantified in any of the emissions summaries. The DPP lists an incinerator on the platform, but does not indicate whether this device will use produced gas or will be heated by electricity. It is also not clear whether emissions from diesel generators used during construction on the platform are included in the emissions estimates. The DPP should identify each emissions source associated with the project, quantify emissions from each source, and document the methodology used to quantify the emissions.

3. The expected efficiency of the sulfur recovery unit is listed as 98.5 percent. Best Available Control Technology (BACT) for sulfur recovery units is generally greater than 98.5 percent. For example, oil refineries generally achieve a recovery efficiency of 99.9 percent. Unocal should provide justification for the belief that 98.5 percent efficiency is BACT, or commit to the use of a more efficient sulfur recovery system.

In addition, the emission estimates for the proposed sulfur recovery process appear to be underestimated. The sulfur removal efficiency of the proposed 3-stage Claus unit is listed as 98.5 percent. This level of efficiency is extremely high for a 3-stage Claus unit. Most such units have efficiencies of about 90-94 percent. We recommend that documentation for the higher efficiency be provided.

4. The emission estimates in Appendix Volume 3, Exhibit D, Table 3.3 appear to assume that there will be no H2S control during well testing. These estimates should be revised to reflect the use of an H2S scrubber for well testing. In addition, this table lists sulfer dioxide emissions from the sulfur recovery unit as about 10 pounds per day. However, at a recovery efficiency of 98.5 percent, sulfur dioxide emissions would be approximately 100 pounds per day. These differences should be resolved.

5. The DPP indicates that the gas supplied by the project will improve local air quality. Table 9 on page 73 quantifies this reduction in emissions, assuming that all the gas produced displaces heavy fuel oil used in electrical utility boilers.

This scenario is unlikely because utility boilers in California generally use natural gas. A more likely scenario is that the gas produced from Gina would displace gas from out-of-state, and no local air quality benefit would occur.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT
Washington, D.C. 20235

DEC - 5 1991

Copy to: RS/OLG
Lane
Mayes
Silverman
Monahan

Notes - Dunaway

MINERALS MANAGEMENT SERVICE
PACIFIC OCS REGION
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DEC 1[illegible]
FIELD OPERATIONS
CAMARILLO

Mr. Thomas W. Dunaway
Regional Supervisor
Office of Field Operations
Minerals Management Service
770 Paseo Camarillo
Camarillo, CA 93010

RE: Platform Gina Development and Production Plan

Dear Mr. Dunaway:

The Office of Ocean and Coastal Resource Management has no comment on the proposed revisions to this production plan.

The Channel Islands National Marine Sanctuary is located immediately adjacent to Platform Gina and any spill would directly affect the Sanctuary. From the information supplied, we have not determined that this would either increase or decrease the probability of a spill over previously approved plans and therefore have no comment.

Thank you for the opportunity to review this plan.

Sincerely,

James P. Lawless
for Trudy Coxe
Director

County of Santa Barbara

RESOURCE MANAGEMENT DEPARTMENT

John Patton, Director **Phil Overeynder, Assistant Director**

December 9, 1991

Noted - Dunaway

Mr. Thomas Dunaway
Regional Supervisor
Office of Field Operations POCS
Minerals Management Service
770 Pasco Camarillo
Camarillo, CA 93010

Copy to:
RS/OLE
C/EDPS
M. Silverman, OLE
LA Monahan
MS Mays
12/18/91 MSm

RE: Platform Gina, Proposed Revision to DPP

Dear Tom:

I want to thank you and your staff for facilitating the meeting of October 31, regarding Unocal's proposal to revise the DPP for Platform Gina. We appreciate the opportunity to provide input.

As you are aware, Platform Gina is located off the coast of Ventura County. Nonetheless, we have the following comments since the proposed project to process sour gas on an offshore production platform is something that can be repeated on other leases.

First, we believe that handling and shipping elemental sulfur should be further investigated. This investigation must identify the impact of a release of elemental sulfur into the marine environment. If there is an impact, and if that impact is determined to be significant, then appropriate mitigation must be required. Mitigation should address both the prevention of a release and the cleanup of a risk (contingency planning). We don't believe that oil spill contingency planning can be substituted for this purpose without appropriate modification.

We also request the MMS to condition the revised DPP (if approved) to require standards on drilling, producing, and processing activities that would update old lease stipulations to current BACT and other mitigating measures.

MINERALS MANAGEMENT SERVICE
PACIFIC OCS REGION
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DEC 1? 19??
FIELD OPERATIONS
CAMARILLO

Energy Division
1226 Anacapa Street, 2nd Floor, Santa Barbara, CA 93101
PHONE (805) 568-2040 FAX (805) 568-2522

Again, we thank you for the opportunity to provide input at an early stage of the DPP revision process. We look forward to similar opportunities in the future, such as the opportunity to comment on changes to the DPP for OCS-P-0409. We are also very interested and concerned about the timing of lease development in the Santa Maria Basin, and would like to have the opportunity to comment on proposed changes to schedules for development.

Please call Doug Anthony of my staff should you have any questions.

Sincerely,

Bill

WILLIAM J. DOUROS
Deputy Director

POLICY\4APLATFO.LTR

STATE OF CALIFORNIA—THE RESOURCES AGENCY PETE WILSON, Governor

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200

Copy to: R.S. Cole
Lane
Silverman
Mays
Mancha

December 16, 1991

Mr. Thomas Dunaway
Regional Supervisor
Office of Field Operations
770 Paseo Camarillo
Camarillo, CA 93010

Re: Platform Gina DPP Revision

Dear Mr. Dunaway:

During the Consistency Review, UNOCAL has agreed to several mitigation measures and project revisions to reduce the level of impacts to coastal and marine resources. Accordingly, UNOCAL has stated these agreements in various letters and documents.

We request that MMS require UNOCAL to revise and amend the Platform Gina DPP Revision to clearly reflect that the mitigation measures and project revisions have been incorporated into the DPP Revision's Project Description.

The information which UNOCAL should amend into the project description is contained in the following letters and documents:

1. UNOCAL letter to Minerals Management Service, November 21, 1991: Agreement to Ventura APCD conditions;

2. Ventura County APCD Letter to California Coastal Commission, November 17, 1991: List of specific mitigation measures required to meet Ventura APCD air rules.

4. UNOCAL letter to Minerals Management Service, September 6, 1991: Response to Commission comments, mitigation measures identified in No. 3,4,7, 9, 13, & 14.

It would be quite helpful if we could receive a letter from MMS verifying that the DPP Revision has been amended to include the above mitigation measures and project revisions by December 19, 1991. If not possible, we will need the confirmation no later than Monday, January 6, 1991.

If you have any questions, please call Robin Blanchfield or me, at 415-904-5240.

Thank you for your prompt response in this matter.

Sincerely,

Robin S. Blanchfield for

Susan Hansch, Manager
Energy and Ocean Resources Unit

CC: UNOCAL, William Weldon

5301N

Lane

Unocal North American
Oil & Gas Division
Unocal Corporation
2323 Knoll Drive, P.O. Box 6176
Ventura, California 93006
Telephone (805) 650-4505

UNOCAL 76

Copy to: RS/OLE
Lane
Silverman
Mayer
Manche

December 17, 1991

Hugh H. Herndon
District Land Manager

Mr. Thomas Dunaway
Minerals Management Service
770 Paseo Camarillo
Camarillo, CA 93010

RE: PLATFORM GINA
Offshore California
DPP Revision (002092)

Dear Mr. Dunaway:

During the course of Consistency Review for the Platform Gina DPP Revision, Union Oil has agreed to certain mitigation measures that impact our project. Union has responded to the various agencies and the MMS with several letters and documents agreeing to specific conditions and commitments.

Pursuant to our discussions and correspondence with the California Coastal Commission, Union Oil hereby requets to amend the Project Description to incorporate the mitigation measures as stated in the following letters:

1. Letter dated November 21, 1991 to the the MMS from Union Oil, regarding Ventura County APCD conditions.

2. Letter dated November 17, 1991 to California Coastal Commission from the Ventura County APCD listing specific mitigation measures to meet onshore Ventura County APCD rules.

3. Letter dated September 6, 1991 to MMS from Union Oil responding to CCC comments identified as Nos. 3, 4, 7, 9, 13 and 14.

The Commission has requested the Minerals Management Service verify the amended DPP Revision by December 19, 1991.

Very truly yours,

UNION OIL COMPANY OF CALIFORNIA

William W. Weldon
Landman

WWW:ka

cc: Robin Blanchfield
California Coastal Commission

Unocal North American
Oil & Gas Division
Unocal Corporation
2323 Knoll Drive, P.O. Box 6176
Ventura, California 93006
Telephone (805) 650-4505

UNOCAL 76

December 17, 1991

Hugh H. Herndon
District Land Manager

Mr. Thomas Dunaway
Minerals Management Service
770 Paseo Camarillo
Camarillo, CA 93010

RE: PLATFORM GINA
Offshore California
DPP Revision (002092)

Dear Mr. Dunaway:

During the course of Consistency Review for the Platform Gina DPP Revision, Union Oil has agreed to certain mitigation measures that impact our project. Union has responded to the various agencies and the MMS with several letters and documents agreeing to specific conditions and commitments.

Pursuant to our discussions and correspondence with the California Coastal Commission, Union Oil hereby requets to amend the Project Description to incorporate the mitigation measures as stated in the following letters:

1. Letter dated November 21, 1991 to the the MMS from Union Oil, regarding Ventura County APCD conditions.

2. Letter dated November 17, 1991 to California Coastal Commission from the Ventura County APCD listing specific mitigation measures to meet onshore Ventura County APCD rules.

3. Letter dated September 6, 1991 to MMS from Union Oil responding to CCC comments identified as Nos. 3, 4, 7, 9, 13 and 14.

The Commission has requested the Minerals Management Service verify the amended DPP Revision by December 19, 1991.

Very truly yours,

UNION OIL COMPANY OF CALIFORNIA

William W. Weldon
Landman

WWW:ka

cc: Robin Blanchfield
California Coastal Commission

7200

December 19, 1991

Ms. Susan Hansch, Manager
Energy and Ocean Resources Unit
California Coastal Commission
45 Fremont, Ste. 2000
San Francisco, CA 94105-2219

Re: Platform Gina DPP Revision

Dear Ms. Hansch:

By letter dated December 16, 1991, the California Coastal Commission (CCC) requested verification from the Minerals Management Service (MMS) that Unocal's proposed DPP Revision for Platform Gina has been amended to include commitments made by Unocal during the consistency review. The CCC requested that Unocal amend the DPP Revision to clearly reflect that the mitigation measures and project revisions as contained in the following letters have been incorporated into the project description:

1. Unocal letter dated November 21, 1991 to the MMS, agreeing to the Ventura County APCD conditions.

2. Ventura County APCD letter dated November 19, 1991 (not November 17, 1991 - confirmed per telephone conversations with the CCC and Unocal) to the CCC listing specific mitigation measures required to meet Ventura County APCD rules.

3. Unocal letter dated September 6, 1991 to the MMS; mitigation measures identified in Nos. 3, 4, 7, 9, 13, and 14.

In a letter dated December 17, 1991, Unocal requested to amend the project description to incorporate the items listed above. These changes are now a part of Unocal's DPP revision and should be considered in the CCC's consistency review. We are hereby submitting these changes to the DPP Revision in accordance with 30 CFR Part 250.34.

If you should have any questions, please contact Ms. Leslie Monahan at (805) 389-7568.

Sincerely,

Thomas W. Dunaway

Thomas W. Dunaway
Regional Supervisor
Office of Field Operations

Enclosure

cc: Mr. Bill Weldon, Unocal (w/o encl.)

bcc: FILE: 1102-01a Hueneme Unit, Platform Gina DPP Corr. (w/encl.)
RD (w/encl.)
Chron (w/o encl.)
RS/OLE (w/encl.)
C/POS (w/encl.)
C/EOPS (w/encl.)
C/PDS (w/encl.)
M. Silverman (w/encl.)
L. Monahan (w/encl.)

OFO: LMonahan/pf:wp51:ltr:GINADPP.LM/12-18-91

Mr. Steve Chambers
U.S. Fish and Wildlife Service
Ventura Field Office
2140 Eastman Ave., Ste. 100
Ventura, CA 93003

Dear Mr. Chambers:

This letter is concerning Unocal's revised development and production plan for Platform Gina. A copy of the revised plan was forwarded to your office on October 1, 1991.

To reiterate, the project includes Unocal's proposal to develop a new gas field from Platform Gina and to repair and convert to gas service an existing water return pipeline. The pipeline connects Unocal's Mandalay processing facility (in the City of Oxnard) to Platform Gina. The drilling of a maximum of seven (7) additional wells, to facilitate gas production from new reservoirs, is also proposed.

From our initial analysis we concluded that the proposed action is not likely to adversely affect listed species or critical habitat. We then initiated informal consultation with your agency and on October 24, 1991 Michael McCrary and Maurice Hill of my staff met with Donna Brewer and Naomi Mitchell in order to brief them on the project. Possible impacts upon Snowy Plovers, California Least Terns, Globose Dune Beetles and California Brown Pelicans, were discussed at that time. Subsequently, (through personal communication) Donna Brewer indicated that she believed that no species under your jurisdiction would be affected by Unocal's proposed project. As such, we would now like to request written confirmation by your agency in order to conclude the informal consultation process.

Thank you for your assistance in this matter. If you have any questions, please feel free to contact Michael McCrary, of my staff at (805) 389-7865, or (FTS) 683-7865.

Sincerely,

Richard L. Wilhelmsen
Regional Supervisor
Office of Leasing and Environment

bcc: FILE: 1102-01a Platform Gina DPP Corr.
RD
Chron
RS, OLE
RF
Chief, EOS

OLE: MSilverman:F:\home\msilver\section.7:12/20/91

Mike

7200

January 6, 1992

Mr. Richard Baldwin
Air Pollution Control Officer
Ventura County Air Pollution Control District
702 County Square Drive
Ventura, CA 93003

Re: Platform Gina DPP Revision

Dear Mr. Baldwin:

We appreciate Ventura County's comments on the Unocal Platform Gina Development and Production Plan (DPP) Revision. As we have previously discussed, the Minerals Management Service (MMS) will incorporate into the DPP Revision approval those mitigation measures which are responsive to the APCD's concerns.

Enclosed is our first draft of proposed conditions. We request your review to ensure that they satisfy APCD requirements. We have included the conditions stated in Ventura County's November 27, 1991 letter to the MMS and incorporated them into MMS conditions. After we have your concurrence, these conditions will be attached to our approval of Unocal's Platform Gina DPP Revision project.

The California Coastal Commission will be holding a hearing on the Unocal project on Tuesday, January 14, 1992. As they are interested in ensuring that your concerns are met in our permit approval, we would appreciate receipt of your comments on the draft conditions by Thursday, January 9, 1992. If you have any questions, please call me at (805) 389-7560.

Sincerely,

Thomas W. Dunaway

Thomas W. Dunaway
Regional Supervisor
Office of Field Operations

Enclosure

cc: Mr. William Weldon, Unocal
Commercial/Indust. Sect., Ventura County Resource Management Agency

bcc: FILE: 1703-02a(1) OCS-P 0202 Platform Gina DPP (w/encl)
RD (w/o encl)
Chron (w/o encl)
RS/OLE (w/encl)
DS,C (w/encl)
C/POS (w/encl)
S/PPPU (w/encl)
S/OAEU (w/encl)
JLane,OLE (w/encl)
MSilverman,OLE (w/encl)
LMonahan (w/encl)

OFO:LMonahan/nk:pf:wp51:ltr:GINADPPR.LM/01-06-92

01/08/92 16:46 ☎805 645 1444 VENTURA CO APCD

X756

Ventura County Air Pollution Control District
702 County Square Drive
Ventura, California 93003
tel 805/645-1400
fax 805/645-1444
Richard H. Baldwin
Air Pollution Control Officer

Post-it™ brand fax transmittal memo 7671	# of pages ▸ 2
To Leslie McMillan	From Chris Frank
Co. MMS	Co. APCD
Dept.	Phone # 645-1409
Fax #	Fax #

January 7, 1992

Copy to
RS/OLE
C/EOPS
M. Silverman, OLE
L. Manoukian
C/OAEU
C/APPU
1/7/92
MSM

Mr. Thomas W. Dunaway
Minerals Management Service
770 Paseo Camarillo
Camarillo, CA, 93010

RE: PLATFORM GINA DEVELOPMENT AND PRODUCTION PLAN REVISION

Dear Mr. Dunaway:

We have reviewed your draft of the proposed Ventura County APCD/MMS Permit Conditions (attached) and have no comments on the conditions as drafted.

If you have any questions concerning this matter, please contact Chris Frank at (805)645-1409.

Sincerely,

Richard Baldwin

Richard Baldwin
Air Pollution Control Officer

cc: William Weldon, UNOCAL
Susan Hansch, Ca. Coastal Commission
Gene Kjellberg, RMA/Planning

Ventura County APCD/MMS Permit Condition

1. Unocal shall provide offsets in accordance with APCD Rule 26, New Source Review, for all permanent NO_x and ROC emissions increases caused by the project, and for all permanent SO_2 emission increases caused by the project if such emission are projected to exceed 15 tons per year.

2. Unocal shall install BACT (Best Available Control Technology) in accordance with APCD Rule 26, New Source Review, on all new and modified gas processing equipment on Platform Gina. Unocal shall reimburse the APCD for the time spent making the BACT determination in accordance with the APCD's fee schedule. Unocal shall coordinate with and obtain approval from MMS for use of the BACT required by the APCD.

3. Unocal shall operate all components on Platform Gina in compliance with the provisions of APCD Rule 74.10, Components at Crude Oil Production Facilities and Natural Gas Production and Processing Facilities. Unocal shall submit an Operation Management Plan as required by Rule 74.10 within 90 days of the commencement of gas production or processing. The plan shall also be submitted to the MMS within the stated timeframe.

4. Unocal shall adjust the SO_2 emission factor and resulting calculated emissions if the actual H_2S concentration of the sour gas is found to be different than the assumed value of 2000 ppm. For the purpose of preliminary estimations, the emission factor of 357.2 lbs/MMCF shall be used.

5. Unocal shall continuously record the gas flaring rate (not including well testing operations) and calculate emissions using the following emissions factors to demonstrate that annual emissions do not exceed the amount of offsets that have been provided for the project:

   ROC - 144 lbs/MMCF
   NO_x - 51.5 lbs/MMCF
   SO_2 - 357.2 lbs/MMCF (or as described in #4 above)*
   CO - 40 lbs/MMCF
   PM - 3 lbs/MMCF

   * If sweetened gas is flared, the emission factor shall be adjusted accordingly.

   Unocal shall make such records available to the APCD and MMS upon request. Unocal shall continue to follow flaring guidelines as stated in the January 28, 1986 MMS letter to Unocal for Platforms Gina, Gilda, A, B, and C.

6. Unocal shall treat the gas flared during well testing operations to less than 300 ppm H_2S. Unocal shall collect and analyze at least one gas sample per day of well testing to confirm that the H_2S concentration does not exceed 300 ppm.