OCS Report
MMS 91-0041

Outer Continental Shelf

Oil & Gas Leasing/Production Program:

Annual Report/FY 1990

MMS U.S. Department of the Interior
Minerals Management Service

OCS/MMS--91-0041

TI91 015343

Outer Continental Shelf

Oil & Gas Leasing/Production Program:

Annual Report/FY 1990

This report is submitted to the Congress of the United States pursuant to sections 15(1) and 22(g) of the Outer Continental Shelf Lands Act Amendments of the 1978 (Public Law 95-372).

U.S. Department of the Interior
Minerals Management Service

March 31, 1991

Minerals Management Service

U.S. DEPARTMENT OF THE INTERIOR

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Foreword

The Minerals Management Service (MMS), an agency of the U.S. Department of the Interior, administers the Nation's Outer Continental Shelf (OCS) natural gas and oil program. Federal offshore waters encompass some 1.4 billion acres, of which approximately 32 million acres were under lease to natural gas and oil exploration, development, and production companies as of September 30, 1990.

In fulfilling its responsibilities under the Outer Continental Shelf Lands Act and other statutory mandates, the MMS

- develops and maintains estimates of Federal offshore natural gas and oil reserves and undiscovered resources;
- assesses the likely effects of exploration, development, and production of natural gas and oil on the marine, coastal, and human environments;
- administers competitive lease sales of suitable offshore tracts based upon resource estimates and environmental assessments; and
- regulates and oversees the exploration, development, and production activities of lessees to assure that they are conducted safely and in an environmentally sound manner.

During FY 1990, Federal offshore leases supplied 25 percent of all the natural gas produced in the United States and more than 10 percent of the Nation's oil. The most recent estimates developed by the MMS resource evaluation program indicate that almost 24 percent of its natural gas reserves and about 14 percent of the Nation's oil reserves lie under Federal offshore waters. Moreover, MMS geologists believe that about three-eighths of natural gas resources and one-third of America's undiscovered oil resources lie under Federal offshore waters. The OCS program generated more than $3.9 billion in production royalties and lease-related revenues for the Government in FY 1990.

The safety and environmental record of the offshore industry in recent years has been excellent (see figure 1, page viii). Between 1971 and 1990, oil production from Federal offshore wells averaged almost one million barrels per day. According to a study by the National Research Council (NRC), although more than 24,000 wells were drilled in Federal offshore waters from 1972 to 1986 (the period evaluated by the NRC), "no blowouts occurred that resulted in significant amounts of oil reaching shore, impacting sensitive environments, or causing loss of resources. Pollution prevention has been an increasingly important priority of the leaseholders and the MMS."[1]

[1] National Academy of Sciences, National Research Council, Marine Board, "Alternatives for Inspecting Outer Continental Shelf Operations," p. 18, March 1990.

However, in spite of this admirable record, there is no room for complacency. That is why MMS is increasing the number of unannounced spot inspections of offshore production and drilling facilities. In addition, Congress provided MMS the authority to assess civil penalties in the Oil Pollution Act of 1990.

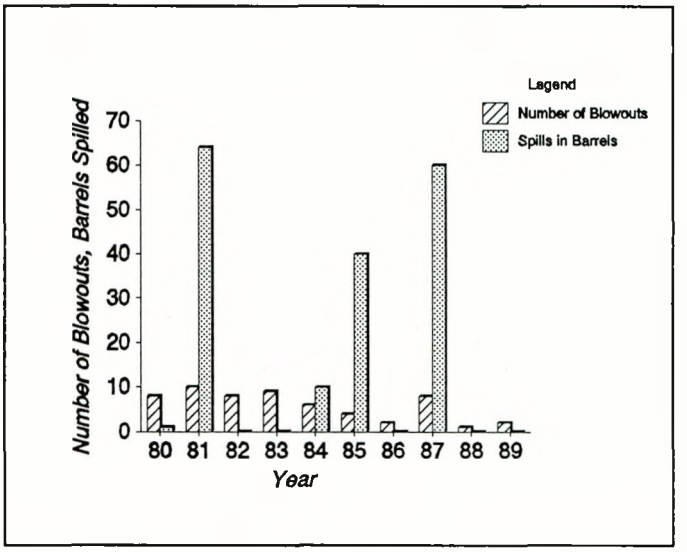

Figure 1. *Blowouts and Spillage from Federal Offshore Wells, Calendar Years 1980-89*

Since 1974, MMS has spent over a half billion dollars for more than a thousand studies relating to the effects of Federal offshore development on the marine, coastal, and human environments. These studies have covered a wide range of topics, including physical oceanography, ecology, endangered species, and social and economic effects.

The OCS Oil and Gas Leasing Program has supplied about 85 percent of the funds spent by the Land and Water Conservation Fund, the Nation's primary source of funding for acquiring lands for national parks and other Federal outdoor recreation areas. Nearly $12 billion has been credited to the fund through FY 1990 from Federal offshore receipts. The fund also provides matching assistance for acquiring and developing of State and local public outdoor recreation areas. Federal grants have been matched by State and local contributions for a total investment exceeding $6.1 billion.

Federal offshore natural gas and oil receipts also provide up to $150 million each year to the Historic Preservation Fund. Moreover, under provisions of section 8(g) of the Outer Continental Shelf Lands Act, coastal States are entitled to 27 percent of the receipts from Federal offshore leases located within the first 3 miles seaward of State coastal waters.

Development of the next 5-year Comprehensive Federal Offshore Natural Gas and Oil Resource Management Program for 1992–97 has begun, as required by the Outer Continental Shelf Lands Act. When completed and approved by the Secretary of the Interior, this new program will provide guidance for the agency's Federal offshore leasing policies and activities during the period 1992–97. This is the first 5-year Federal offshore program that the current Administration has had the opportunity to formulate since taking office. The new program will fully reflect President Bush's and Secretary Lujan's commitment to stewardship of the Nation's natural resources and protection of the environment for the benefit of future generations.

Director
Minerals Management Service

Abbreviations and Acronyms

A

ANSI	-	American National Standards Institute
API	-	American Petroleum Institute
ASME	-	American Society of Mechanical Engineers

B

Bbbl	-	billion barrels

C

CDP	-	Common Depth Point
CFR	-	Code of Federal Regulations
CZMA	-	Coastal Zone Management Act

D

DST	-	Deep Stratigraphic Test

E

EGOM	-	Eastern Gulf of Mexico
EIS	-	Environmental Impact Statement
	-	Egg Larval Committee
EPA	-	Environmental Protection Agency
EP	-	Exploration Plan
ER	-	Environmental Report
ESA	-	Endangered Species Act
ESWS	-	Environmental Studies Working Session

F

FNOS	-	Final Notice of Sale
FPS	-	Floating Production System
FR	-	Federal Register
FRRE	-	Field and Reservoir Reserves Estimates
FWS	-	U.S. Fish and Wildlife Service
FY	-	Fiscal Year

G

G&G	-	Geological & Geophysical
GOA	-	Gulf of Alaska
GOM	-	Gulf of Mexico
GVS	-	Gas Verification System

I

ITM	-	Information Transfer Meetings

L

LVS	-	Liquid Verification System

M

Mbbl	-	thousand barrels
MMbbl	-	million barrels
MMcf	-	million cubic feet
MMS	-	Minerals Management Service
MOU	-	Memorandum of Understanding
MRB	-	Modeling Review Board

N

NEPA	-	National Environmental Protection Act
NMFS	-	National Marine Fisheries Service
NOAA	-	National Oceanic and Atmospheric Administration
NOS	-	National Ocean Survey
NTL	-	Notice to Lessees

O

OCS	-	Outer Continental Shelf
OCSEAP	-	Outer Continental Shelf Environmental Assessment Program
OCSIP	-	Outer Continental Shelf Information Program
OCSIS	-	Outer Continental Shelf Information Systems
OCSLA	-	Outer Continental Shelf Lands Act
OCSLAA	-	Outer Continental Shelf Lands Act Amendments
OIP	-	Offshore Information and Publications
OIS	-	Offshore Inspection System
OSIM	-	Office of Strategic and International Minerals
OSRA	-	Oil-Spill Risk Analysis
OTAC	-	Operations Technology Assessment Committees

P

P.L.	-	Public Law
PNOS	-	Proposed Notice of Sale
PRESTO	-	Probabilistic Resource Estimates Offshore
PVP	-	Platform Verification Program

R

RTWG	-	Regional Technical Working Group

S

SID	-	Secretarial Issue Document
SWEPI	-	Shell Western E&P, Inc.

T

TA&R	-	Technology Assessment and Research
Tcf	-	trillion cubic feet

U

U.S.C.	-	U.S. Code
USCG	-	U.S. Coast Guard
USGS	-	U.S. Geological Survey

Executive Summary

As the Congress declared in the Outer Continental Shelf Lands Act (OCSLA), the natural gas and oil production from the Outer Continental Shelf (OCS) constitutes an important part of the Nation's domestic energy supply. (See Introduction, page 1.) Federal offshore minerals are administered within the Department of the Interior by the Minerals Management Service (MMS), which provides access to potential new sources of natural gas and oil offshore by conducting lease sales. (See figure 2, page xii, MMS Organizational Chart.) Each year, on or before March 31, the MMS (as mandated by OCSLA) presents to Congress a fiscal year annual report on the Federal offshore natural gas and oil leasing and production program. In FY 1990, the MMS's offshore natural gas and oil leasing and production program was the fourth largest producer of revenue for the U.S. Treasury, contributing more than $3.0 billion. The following summarizes Federal offshore leasing and production activities during FY 1990.

Two Federal offshore lease sales were held during FY 1990, offering a total of 10,459 tracts on 29.8 million acres in the Gulf of Mexico Region. (See Figure 3, page xiii, for regional planning areas.)

The first sale, Sale 123, held March 21, 1990, offered 5,667 tracts on 3,493,461 acres in the Central Gulf of Mexico planning area. Bids were received for 538 tracts covering 2,671,597 acres. Total high bids amounted to $427,413,211. High-bid bonuses amounting to $424,334,314 were deemed adequate and accepted. Leases were awarded for 525 tracts. The average bid for the 525 leases was $162.94 per acre; the first-year rents totaled $7,812,927 for the 2,604,259 acres leased.

The second sale in FY 1990, Sale 125, held on August 22, 1990, offered 4,792 tracts on 26,295,305 acres in the Western Gulf of Mexico planning area. Bids were received for 307 tracts on 1,699,507 acres. Total high bids amounted to $162,442,246. High-bid bonuses of $159,967,604 were accepted for 300 tracts. The average bid was $96.41 per acre; the first-year rents totaled $4,977,606 for the 1,659,187 acres leased.

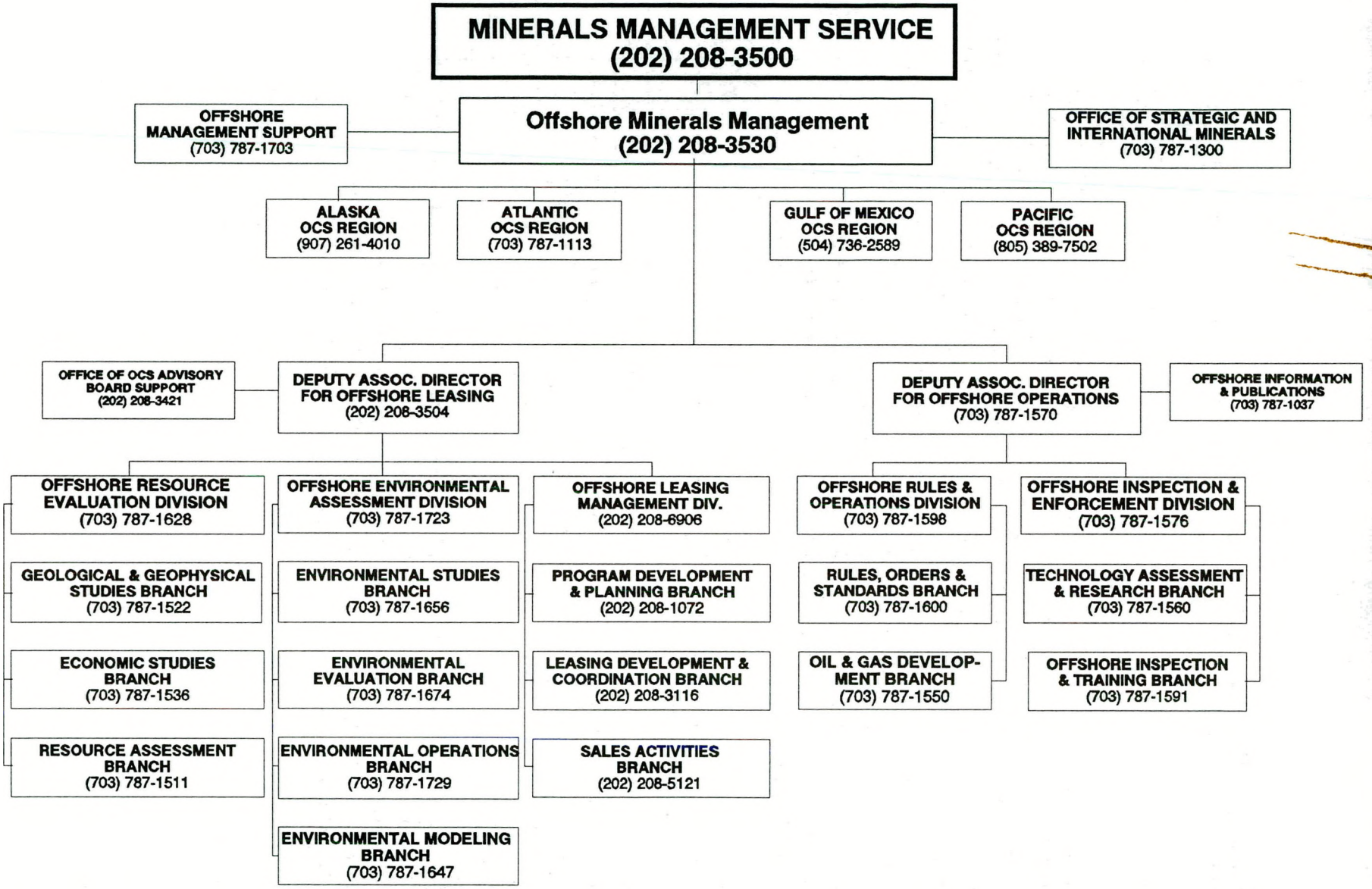

Figure 2. *MMS Organizational Chart*

Figure 3. *Planning Areas, 5-Year OCS Oil and Gas Leasing Program*

Of the 10,459 tracts (29,788,766 acres) offered in the two offshore sales, 825 tracts were leased (4,263,446 acres). Accepted high-bid bonuses amounted to $584,301,918. Another $5,553,539 in bonuses were rejected as insufficient and returned to the bidders. The 1,305 bids received on 845 tracts resulted in 825 successful bids. First-year rents amounted to $12,790,533 for the leases issued.

Table 1 summarizes the 6,960 active Federal leases and the location of the nearly 37 million acres of the Federal offshore acreage under lease at the end of FY 1990.

Table 1. *Active Federal Offshore Leases and Acres*

Offshore Region	Active Leases	Acres Under Lease
Alaska	905	5,008,617
Atlantic	61	347,284
Gulf of Mexico	5,881	31,059,956
Pacific	113	580,415
Totals as of 09/30/90	**6,960**	**36,996,272**

Figure 4 (page xiii) and Figure 5 (page xiv) graphically portray the acres leased offshore and the active leases by fiscal year for the past decade.

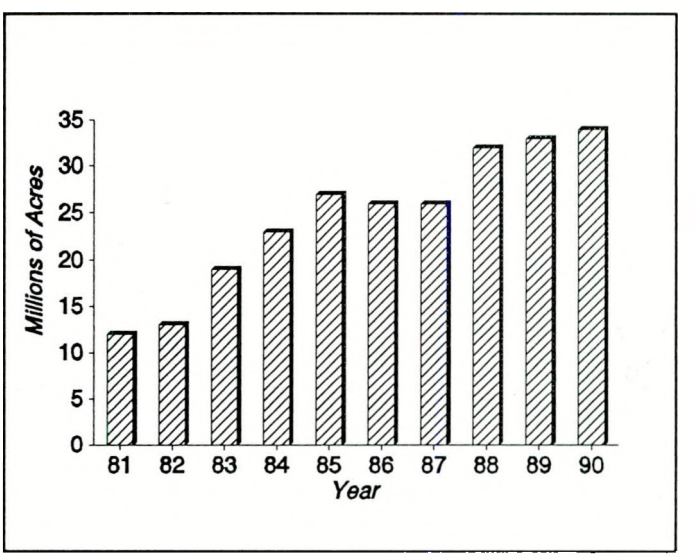

Figure 4. *Acres Under Lease Offshore, FY 1981-90*

Offshore program receipts during FY 1990 amounted to $712,037,412 in bonuses and rents; $2,292,048,222 in royalties; and $2,032,703 in interest on escrow released for total receipts of $3,006,118,337. In addition, $79,149,949 were added to the escrow accounts, bringing total offshore program receipts submitted to the Royalty Management Program to $3,085,268,286. Total obligations and expenditures for the Offshore Minerals Management Program were estimated at $89,973,641 in FY 1990. Figure 6 (page xiv) shows the total program receipts and escrow in billions of dollars over the past decade.

Production in FY 1990 amounted to over 4.7 trillion cubic feet of natural gas and nearly 309 million barrels of crude oil and condensate. Oil produced offshore amounted to 11.4 percent of total U.S. oil production during FY 1990 (see Figure 7, page xvi, and Table 10, page 21). Natural gas produced offshore was 25.7 percent of total U.S. gas production. All offshore production came from the Gulf of Mexico and offshore California. During FY 1990, 515 exploratory wells and 546 development wells were started (see Table 6, page 11, and Table 7, page 14).

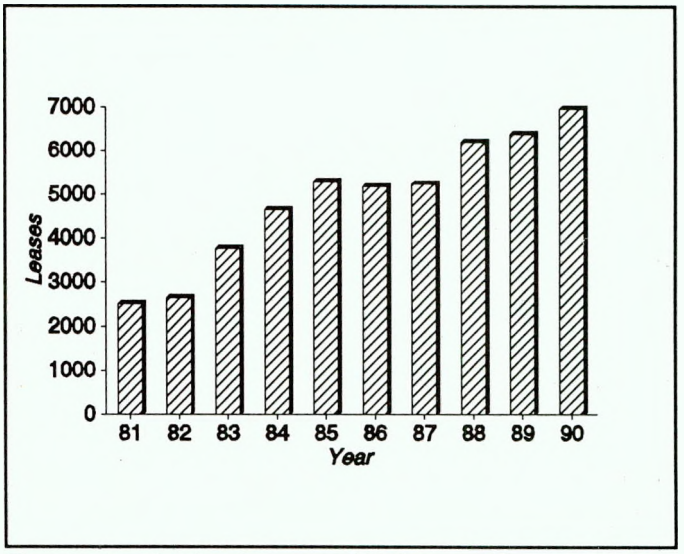

Figure 5. *Active Leases Offshore, FY 1981-90*

From the offshore program's inception in October 1954 through September 1990, the Department of the Interior has held 106 Federal lease sales, including 2 reoffering sales. Of these, 99 were natural gas and oil lease sales; 2 were salt sales; 2 were sulphur sales; 1 was a gas, oil, and sulphur sale; 1 was a phosphate sale; and 1 was a sulphur and salt sale. The six leases issued from the phosphate sale were relinquished because hazards from unexploded ordnance in the lease area precluded development. All bonuses and first-year rents paid by the successful bidder were returned by the Federal Government. Bonuses paid by industry for all leased Federal offshore tracts from FY 1954 through FY 1990 totaled $55.8 billion, and another $39.8 billion has been received in royalties. About 92 trillion cubic feet of natural gas and 8.8 billion barrels of crude oil and condensate have been produced from these leases.

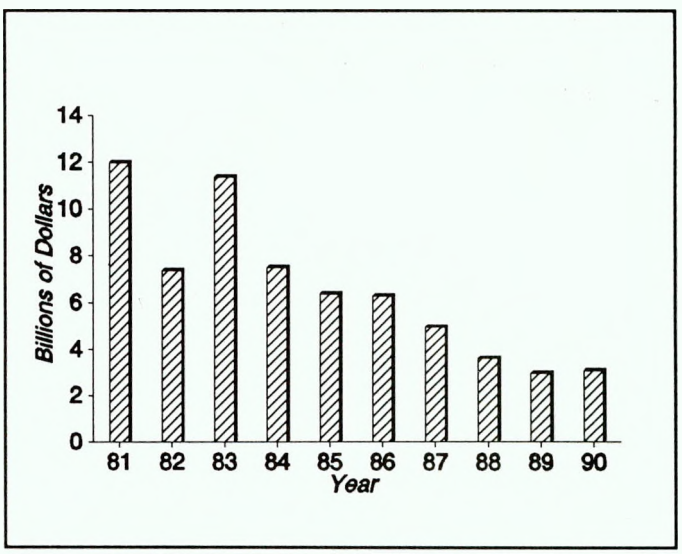

Figure 6. *Total Federal Offshore Program Receipts and Escrow, FY 1981-90*

Pursuant to 33 CFR Part 140.40, the U.S. Coast Guard conducted 132 investigations on 747 reports or allegations of violations of safety regulations. Coast Guard personnel conducted 2,781 inspections among the 3,811 Federal offshore facilities in Federal waters. (These Federal offshore inspections included 1,536 self-inspections of fixed platforms within the 8th, 11th, and 17th Districts conducted by owners/operators in accordance with 33 CFR 140.103.) One report of violation was forwarded to MMS for administrative or judicial action. The 2,781 Coast Guard inspections resulted in the issuance of 1,692 corrective action requirements. There were 1,177 fewer reports or allegations of violations in FY 1990 than in FY 1989. In addition, the number of investigations increased from 30 in FY 1989 to 132 in FY 1990. (See Inspection and Enforcement, page 30, for information on MMS inspections.)

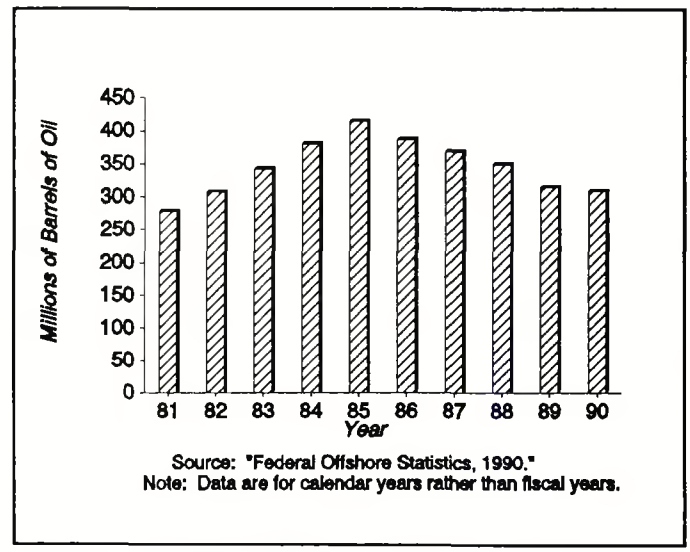

Figure 7. *Annual Federal Offshore Crude and Condensate Production in Millions of Barrels, Calendar Years 1981-1990*

Introduction

Mandate for the Annual Report to Congress

Pursuant to section 15(1) of the Outer Continental Shelf Lands Act (OCSLA), 43 U.S.C. 1343(1), as amended, this *Annual Report* on the Outer Continental Shelf (OCS) Natural Gas and Oil Leasing and Production Program for fiscal year (FY) 1990 is submitted to the Congress of the United States. The document summarizes receipts and expenditures and, in compliance with section 22(g) of the Act, includes information on Federal offshore safety violations as reported by the U.S. Coast Guard.

The OCSLA (43 U.S.C. 1331, et seq.), enacted in 1953 and amended by the OCSLA Amendments (OCSLAA) of 1978 and 1985 and the OCS Paperwork and Reporting Act (amending 43 U.S.C. 1343, 1861 and 1865 [1986]), charges the Secretary of the Interior with the responsibility for administering and managing mineral exploration and development of the OCS, as well as for conserving its natural resources. The OCSLA, as amended, defines the national policy for managing the offshore natural gas and oil resources and its resulting goals. These goals for the comprehensive management of natural gas and oil production in the offshore marine environment include

- ensuring orderly and timely exploration and development of mineral resources to meet the energy needs of the Nation;
- providing for optimal protection of the environment concurrent with efficient, economic mineral resource development; and
- ensuring that fair market value is received for the lands leased and the rights conveyed by the Federal Government.

Background Information

The *Annual Report,* produced by the MMS's OCS Information Program, is a compilation of facts and data gathered from the agency's Alaska, Atlantic, Gulf of Mexico, and Pacific regional offices, as well as Headquarters. The U.S. Coast Guard also contributes information on administrative or judicial actions for each fiscal year.

Federal Leasing and Operations

Fiscal Year 1990 Federal Offshore Natural Gas and Oil Lease Sales

During fiscal year (FY) 1990, the MMS held two natural gas and oil lease sales (123 and 125), offering for lease a total of 10,459 tracts on 56,788,766 acres. For the two offshore sales, industry submitted 1,305 bids resulting in $589,855,457 in high-bid bonuses for 845 tracts covering 4,371,104 acres. Accepted high-bid bonuses totaled $584,301,918 for 825 tracts covering 4,263,446 acres. First-year rents amounted to $12,790,533 for those leases. (See Table 2, page 5.)

Federal Offshore Lease Sales Canceled in FY 1990

Figure 3 (page xiii) shows the planning areas for all proposed and deferred sales in the 5-Year OCS Oil and Gas Leasing Program, Mid-1987 to Mid-1992. Figure 8 (page 6) lists the sales in the 5-Year Program as of September 30, 1990.

The following offshore sales did not occur in FY 1990:

- Sale 121, Mid-Atlantic
- Sale 101, St. George Basin
- Sale 114, Gulf of Alaska/Cook Inlet
- SU 2, Supplemental

On June 26, 1990, President Bush announced his decision to exclude more than 99 percent of the Federal lands offshore California from consideration for natural gas and oil leasing until after the year 2000. In doing so, he canceled all offshore California sales on the current 5-year program: Sales 91 and 128, Northern California; 95 and 138, Southern California; and 119, Central California. Also as part of the decision announced in June, the President stated that 87 tracts in the Southern California Planning Area (specifically, in the Santa Barbara Channel and the Santa Maria Basin) with high resource potential could be available for leasing consideration after January 1, 1996, and upon completion of additional studies.

In addition, the President's decision directed MMS

- to conduct additional oceanographic and socioeconomic studies recommended by the National Academy of Sciences;

- to adopt NOAA's proposal to designate a 2,200 square mile Monterey Bay National Marine Sanctuary off the Central California coast and permanently prohibit all natural gas and oil activity within the sanctuary; and

- to adopt air quality controls for facilities offshore California that are substantially the same as those governing onshore facilities.

The Pacific Northwest OCS Task Force held three meetings during 1990 to discuss issues related to potential offshore natural gas and oil leasing, exploration, and development activities in the Pacific Northwest. The catalyst for this task force was proposed Sale 132, Washington-Oregon. On February 12, 1990, the task force unanimously adopted a resolution recommending that key environmental studies be completed and analyzed before leasing is considered in the region and before a Pacific Northwest offshore lease sale is included in a future 5-year offshore natural gas and oil leasing program. On June 26, 1990, President Bush announced that the Pacific Northwest would be excluded from leasing consideration until after the year 2000 and then only after a series of environmental studies recommended by the task force are completed and their findings considered.

Three additional lease sales were canceled as a result of the Presidential task force: Sale 96, North Atlantic; Sale 132, Washington-Oregon; and Sale 116—Part II, Eastern Gulf of Mexico.

Sales Activities in Progress

Listed on the current 5-Year OCS Oil and Gas Leasing Program are 29 offshore natural gas and oil lease sales. Work on some of these sales has been delayed. The sales in progress are listed below.

Sale 107, Navarin Basin: The final EIS is scheduled for release in February 1991, with the Proposed Notice/Consistency Determinations to the State of Alaska to occur in March; the Governor's Comments are due in June 1991. The Notice of Sale is scheduled for publication in the *Federal Register* during August and the Sale will take place in September 1991.

Sale 124, Beaufort Sea: The Governor's Comments are due in March 1991, with the Final Notice scheduled for publication in the *Federal Register* in May 1991. The Sale is scheduled to take place in June 1991.

Sale 126, Chukchi Sea: The draft EIS has been completed and was released to the public in July 1990. The final EIS is scheduled for release during January 1991, with the Proposed Notice to appear in the *Federal Register* in March 1991. The Governor's Comments, the Final Notice and the Sale are scheduled for May, July, and August, respectively.

Sale 131, Central Gulf of Mexico: The Final Notice is scheduled for publication in the *Federal Register* during February 1991, with the Sale to be held in March 1991.

Table 2. *Summary of OCS Oil and Gas Lease Sales Held by the MMS During FY 1990*

Lease Offering	Sale/Bid Opening	Royalty Rate of Leased Tracts	Tracts Lease Terms	OCS Leases High Bid Bonuses	Issued
Sale 123 Central GOM 5,667 tracts 30,493,461 acres	3/21/90 840 bids 538 tracts 2,671,597 acres	16 2/3% for 389 tracts 12 1/2% for 136 tracts	389 at 5 yr 45 at 8 yr 91 at 10 yr	$427,413,211 rec. $424,334,314 acc. $ 3,078,897 rej.	525 tracts 2,604,259 acres $162.94 avg./acre $7,812,927 yr rents
Sale 125 Western GOM 4,792 tracts 26,295,305 acres	8/22/90 465 bids 307 tracts 1,699,507 acres	16 2/3% for 232 tracts 12 1/2% for 68 tracts	232 at 5 yr 41 at 8 yr 27 at 10 yr	$162,442,246 rec. $159,967,604 acc. $ 2,474,642 rej.	300 tracts 1,659,187 acres $96.41 avg./acre $4,977,606 yr rents
Total FY 1989 OCS Sales: 2	**Total Bids Received:** 1,305	**Total Tracts 16 2/3% (1/6):** 621	**Total Leases at 5 yr:** 621	**Total Bonuses Recieved:** $589,855,457	**Total Tracts Leased:** 825
Total Tracts Offered: 10,459	**Total Tracts Bid on:** 845	**Total Tracts at 12 1/2%:** 204	**Total Leases at 8 yr:** 86	**Total Bonuses Accepted:** $584,301,918	**Total Acres Leased:** 4,263,446
Total Acres Offered: 56,788,766	**Total Acres Bid On:** 4,371,104		**Total Leases at 10 yr:** 118	**Total Bonuses Rejected:** 5,553,539	**Total First-Year Rents:** $12,790,533

ac. = acres rec. = receipts rej. - rejected acc. = accepted

Figure 8. 5-Year OCS Oil and Gas Leasing Schedule, September 30, 1989.

U.S. DEPARTMENT OF THE INTERIOR
5-YEAR OCS OIL AND GAS LEASING SCHEDULE

APRIL 1988

SALE#	OCS PLANNING AREA	SALE DATE	1987 J A S O N D	1988 J F M A M J J A S O N D	1989 J F M A M J J A S O N D	1990 J F M A M J J A S O N D	1991 J F M A M J J A S O N D	1992 J F M A M J	SALE#
112	W. GULF OF MEXICO	Aug 87	S (HELD 8/12/87)						112
97	BEAUFORT SEA	Mar 88		S (HELD 3/16/88)					97
113	C. GULF OF MEXICO	Mar 88		S (HELD 3/30/88)					113
109	CHUKCHI SEA	May 88	F P	G N S (HELD 5/25/88)					109
115	W. GULF OF MEXICO	Aug 88	F	P G N S (HELD 8/31/88)					115
116	E. GULF OF MEXICO	Nov 88	F	P G N S (HELD 11/16/88)					116
91	N. CALIFORNIA	Feb 89	E	H F P G N S					91
96	N. ATLANTIC	Feb 89		E H F P G N S					96
118	C. GULF OF MEXICO	Mar 89	D A	E H F P G N S (HELD 3/15/89)					118
122	W. GULF OF MEXICO	Aug 89	D A	E H F P G N S		(HELD 8/23/89)			122
SU-1	SUPPLEMENTAL SALE	Sep 89		C D I P G N S					SU-1
107	NAVARIN BASIN	Dec 89		E H F P G N S					107
• 121	MID-ATLANTIC	Dec 89	C D A	E H F P G N S					• 121
95	S. CALIFORNIA	Jan 90	C D A	E H F P G N S					95
• 101	ST. GEORGE BASIN	Feb 90	C D A	E H F P G N S					• 101
123	C. GULF OF MEXICO	Mar 90	C D A	E H F P G N S (HELD 3/21/90)					123
125	W. GULF OF MEXICO	Aug 90	C D A	E H F P G N S					125
• 114	GOA / COOK INLET	Sep 90	R C D A	E H F P G N S					• 114
SU-2	SUPPLEMENTAL SALE	Sep 90		C D I P G N S					SU-2
117	N. ALEUTIAN BASIN	Oct 90	C D A	E H F P G N S					117
• 108	S. ATLANTIC	Oct 90	R C D A	E H F P G N S					• 108
124	BEAUFORT SEA	Feb 91	C D A	E H F P G N S					124
119	C. CALIFORNIA	Mar 91	C D A	E H F P G N S					119
131	C. GULF OF MEXICO	Mar 91	C D A	E H F P G N S					131
126	CHUKCHI SEA	May 91	C D A	E H F P G N S					126
135	W. GULF OF MEXICO	Aug 91	C D A	E H F P G N S					135
SU-3	SUPPLEMENTAL SALE	Sep 91	C D I P G N S						SU-3
• 120	NORTON BASIN	Sep 91	R C D A	E H F P G N S					• 120
137	E. GULF OF MEXICO	Nov 91	C D A	E H F P G N S					137
• 129	SHUMAGIN	Jan 92	R C D A	E H F P G N S					• 129
• 134	N. ATLANTIC	Feb 92	R C D A	E H F P G N S					• 134
128	N. CALIFORNIA	Feb 92	C D A	E H F P G N S					128
139	C. GULF OF MEXICO	Mar 92	C D A	E H F P G N S					139
132	WASH. - OREG.	Apr 92	R C D A	E H F P G N S					132
• 133	HOPE BASIN	May 92	R C D A	E H F P G N S					• 133
• 138	S. CALIFORNIA	Jun 92	C D A	E H F P G N S					• 138
• 130	NAVARIN BASIN	Jun 92	R C D A	E H F P G N S					• 130
• 140	STRAITS OF FLORIDA		(CANCELED SUBJECT TO 3/88 DOI/FLORIDA AGREEMENT)						• 140
SALE#	OCS PLANNING AREA	SALE DATE	1987 J A S O N D	1988 J F M A M J J A S O N D	1989 J F M A M J J A S O N D	1990 J F M A M J J A S O N D	1991 J F M A M J J A S O N D	1992 J F M A M J	SALE#

ABBREVIATIONS:

- A Area Identification;
- C Call for Information & Nominations;
- D Comments on Call Due;
- E Draft EIS;
- F Final EIS;
- G Governor's Comments Due;
- H Public Hearings:
- I Issue Evironmental Assessment for Supplemental Sales;
- N Notice of Sale;
- P Proposed Notice of Sale;
- R Possible Request for Interest;
- S Sale

•Frontier Exploration Sale Request for Interest will be issued, if necessary.

Sale 135, Western Gulf of Mexico: The Proposed Notice is scheduled for publication in the *Federal Register* during March 1991, with the Governors' Comments due in May, the Final Notice scheduled for July, and the Sale to be held in August 1991.

Sale 139, Central Gulf of Mexico: The draft EIS is scheduled for March 1991, with public hearings in April 1991. The final EIS is scheduled for release in August 1991, with the Proposed Notice in October and the Governors' Comments due in December 1991. The final Notice of Sale is to be published in the *Federal Register* during January 1992. The Sale is scheduled for March 1992.

Federal Offshore Mining Program

Norton Sound Mineral Lease Sale: A Request for Comments and Nominations, and Notice of Intent to Prepare an Environmental Impact Statement were published in March 1988. The Area Identification was approved in May 1988; a draft EIS was published in November 1988, and a public hearing was held in January 1989. Because of new information, a second draft EIS was completed in June 1990, followed by a public hearing in July and the proposed Leasing Notice in August. The final EIS is scheduled for release in March 1991 and the final Leasing Notice in April, with a sale date tentatively scheduled for mid-1991.

Table 3, summarizes the major action steps and documents the MMS completed in FY 1990 for the prelease phases of the Federal offshore leasing process.

Table 3. *FY 1990 Prelease Activities of Federal Offshore Leasing Process*

FY 1990 Activity/Document	Number Completed
Request for Comments	0
Request for Interest	0
Call for Information	2
Supplemental Call	0
Area Identification	2
Draft Environmental Impact Statement	4
Final Environmental Impact Statement	4
Proposed Notice of Sale	3
Secretarial Issue Document	1
Final Notice of Sale	2
Sales Conducted	2

The MMS also completed and processed the following documents in FY 1990:

Section 19 Letters: Section 19 of the OCSLA, as amended, provides for "Coordination and Consultation with the Affected States." The section 19 letters forward copies of proposed Notices of Sales to the Governors of affected States. They also invite recommendations within 60 days regarding the size, timing, and location of the proposed lease sale. Four section 19 letters were sent on Sale 123, Central Gulf of Mexico, in FY 1990.

Section 19(c) Balancing Letters: Section 19(c) of the OCSLA requires that the Secretary of the Interior furnish his reasons for accepting or rejecting State recommendations regarding the size, timing, or location of a proposed lease sale or for implementing any alternative means to provide for a reasonable balance between the National interest and the well-being of the citizens of an affected State. Four such balancing letters were sent on Sale 123, Central Gulf of Mexico, and two balancing letters were sent for Sale 125, Western Gulf of Mexico in FY 1990.

Administration of Federal Offshore Leases

Lease activity administered by the MMS during FY 1990 is summarized in Table 4 (page 9). Compared with the FY 1989 lease activities administered, the MMS in FY 1990 processed 27 more assignments of interest and the same number of applications for lease term pipelines, platform applications, and exploration plans and three fewer well starts.

Exploration Activities

The level of exploration activity in Federal offshore waters during FY 1990 can be evaluated by the number of geological and geophysical (G&G) permits issued, exploration plans (EP) submitted and approved, and exploratory wells started. The issuance of G&G permits is a prelease resource appraisal activity; exploration plans and exploratory well drilling are postlease activities.

Geological activities include core and test drilling and bottom-sampling to obtain data on hydrocarbon or mineral resource potential. Geophysical activities refer to any operations using geophysical techniques to help identify areas of hydrocarbon potential.

Table 4. *Administration of Federal Offshore Natural Gas and Oil Leases During FY 1990*

Lease Activities	Alaska	Atlantic	Gulf of Mexico	Pacific	FY 1990 Total
Assignments of Interest	479	8	1,137	57	**1,681**
Relinquishments	81	10	100	2	**193**
Terminations	0	0	86	8	**94**
Expirations	0	0	192	7	**199**
Pipelines					
Lease Term Applications Approved	0	0	181	0	**181**
Lease Term Miles	0	0	265	0	**265**
Right-of-way Applications					
Right-of-way Miles	0	0	625	0	**625**
Production Platforms in Federal Waters					
Applications Approved	0	0	250	N/A	**273**
Under Supervision as of 09/30/90	0	0	3,788	23[1]	**3,811**
Postlease Plans Approved					
Exploration Plans	4	0	504	0	**508**
Development/Production Plans	0	0	233	0	**233**
Well Drilling Action					
Wells Plugged and Abandoned	5	0	391	5	**401**
Exploratory Well Starts	2	0	512	1	**515**
Development Well Starts	0	0	529	17	**546**
Total Well Starts:	**2**	**0**	**8,918**	**18**	**20**

[1]Pacific OCS Region's platform count does not include the offshore storage and treatment facility.

Information from G&G activities also can provide an early warning to potentially hazardous drilling areas.

The petroleum industry increased exploration activities for offshore natural gas and oil in Federal waters in FY 1990, as compared with FY 1989. Prelease permitting activity remained nearly the same with 243 G&G permits issued in FY 1990 as compared with 239 last year, (Table 5, page 10). Total postlease approvals for the entire Federal offshore were given to 508 exploration plans, as compared with 443 in FY 1989. One exploration plan was submitted for the Atlantic OCS, Mid-Atlantic Planning Area, for exploratory drilling by Mobil and Partners.

Table 5. *Prelease Geological and Geophysical Data Acquisition Activities for FY 1990*[1]

Offshore Planning Region	Seismic Data Line Miles Acquired	No. of G&G Permits Issued
Alaska	8,557	19
Atlantic	31	1
Gulf of Mexico	76,692	220
Pacific	0	3
Total	**85,280**	**243**

[1]Data acquired in FY 1990 by the MMS may result both from surveys permitted during that or earlier fiscal years and only includes deep penetration Common Depth Point (CDP) reflection data.

Of the 243 G&G permits the MMS issued in FY 1990, there were 220 for the Gulf of Mexico, 19 for Alaska, 3 for the Pacific, and 1 for the Atlantic. Of the 220 G&G permits issued by the Gulf of Mexico OCS Region, 215 were geophysical and 5 were geological permits. (See Table 5, page 10 and Figure 9, page 11.) The Gulf of Mexico's permit activity remained virtually the same as last year's total of 220. The MMS acquired 85,280 line miles of geophysical data during FY 1990.

Geological data gathered under permits are used to study hydrocarbon or mineral resource potential and are derived from core holes, test wells, and various bottom-sampling methods. The physical examination of subsurface rock specimen formations also produces data on hydrocarbon or mineral resource potential. Geophysical surveys involve any operations that use seismic, electrical, gravity, magnetic, solid or liquid explosives, and electromagnetic methods to obtain structural and stratigraphic data that identify areas having hydrocarbon trapping potential. Such G&G information may also be used to identify areas with potentially hazardous drilling conditions.

Analysis of these data is a major step in the resource evaluation that the MMS must perform before scheduling offshore lease sales. The MMS geophysicists and geologists interpret the data and prepare maps of target horizons on subsurface structures. The maps form the core of all tract evaluation efforts and are—together with geological, engineering, and economic data—the basic criteria the MMS uses to make necessary decisions before the lease sales and to determine bid adequacy for tracts offered at offshore lease sales. Prospect and reservoir evaluations are also used to develop estimates of undiscovered resources and for planning purposes, such as the development of the 5-Year OCS Oil and Gas Leasing Program.

Sometimes, industry drills Deep Stratigraphic Test (DST) wells before any lease sales occur. As these wells are intended only to obtain geological information and not to identify or remove gas or oil from hydrocarbon reservoirs, they are usually drilled off-structure. Most DST wells are financed by consortiums of several companies that share the cost of these test wells, thus eliminating the proliferation of test wells on the Federal

offshore and reducing the cost per participant.

Exploration activities for FY 1990 are shown in Table 6 (page 11). The Gulf of Mexico Region continues to dominate the offshore area for both prelease and postlease activities. Total offshore exploration plans submitted in FY 1990 were 522 for the Alaska, the Gulf of Mexico, and the Pacific Regions, compared with 481 in FY 1989. Overall, exploratory drilling showed a 10.5 percent increase, with 515 wells started compared to the 466 wells started the previous year.

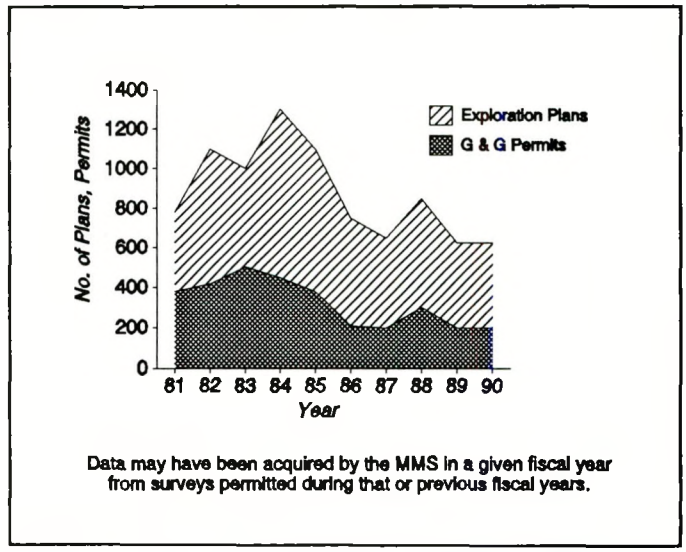

Figure 9. *Exploration Plans Approved, G&G Permits Issued, FY 1981-90*

Table 6. *Exploration Activities on Federal Offshore Natural Gas and Oil Leases, FY 1990*

Exploration Activities	Alaska	Atlantic	Gulf of Mexico	Pacific	FY 1990 Totals
G&G Permits Issued	19	1	220	3	**243**
DST Well Starts	0	0	0	0	**0**
Exploration Plans					
Submitted	4	1	517	0	**522**
Approved	4	0	504	0	**508**
Disapproved	0	0	0	0	**0**
Pending	0	1	55	0	**56**
Exploratory Wells					
Starts	2	0	512	1	**515**

Alaska: In the Alaska OCS Region, two exploratory wells were started, both in the Chukchi Sea. Shell Western Exploration & Production, Inc. (Shell) returned to the Chukchi Sea Sale 109 area during the 1990 drilling season. Shell completed the Burger well (OCS-Y 1413) on August 22, 1990, which was started and suspended in the 1989 drilling season. Shell also completed the Popcorn well (OCS-Y 1275) on September 22,

1990, which was started October 14, 1989, and suspended. Finally, Shell started the Crackerjack well (OCS-Y 1320) on September 23, 1990, which was still active at the end of FY 1990. Shell used the *Explorer III* with three icebreaker support vessels to drill all three wells.

Amoco Production Company won its appeal to the Secretary of Commerce on the State of Alaska's consistency objection to Amoco's Galahad Exploration Plan for the Eastern Beaufort Sea. Amoco has submitted an Application for Permit to Drill the Galahad well (OCS-Y 1092) during the 1991 summer drilling season using an *Explorer*-class drillship.

ARCO Alaska moved CANMAR's Single Steel Drilling Caisson/Mat to its Fireweed Prospect (OCS-Y 0267) in the Western Beaufort Sea Sale 71 lease area where it plans to drill one of two wells during the winter of 1990–91.

Texaco submitted an EP for the Chukchi Sea, which has been approved by MMS. Texaco plans to use the BeauDril conical drilling unit *Kulluk*. Texaco has identified 13 different prospects that may be drilled depending on results of initial exploration activities. Texaco had planned to start drilling in 1991, but State coastal zone consistency objections will probably cause a delay until the 1992 drilling season.

Chevron submitted EP's for the West Maktar and Canvasback Prospects in the Eastern and Western Beaufort Sea, respectively. Both EP's were conditionally approved in FY 1990, the Canvasback Prospect EP on August 23, 1990, and the West Maktar Prospect EP on August 20, 1990. The State of Alaska Coastal Zone Consistency concurrence is pending. Chevron proposes to use BeauDril's *Kulluk* during open-water periods to drill up to three wells, one each prospect, beginning in July 1991. Chevron has requested an exception from the MMS Sale 87 seasonal drilling restriction to allow drilling at both prospects during the fall bowhead whale migration. The exception is currently under review by MMS.

Atlantic: There have been no exploratory wells started in the Atlantic OCS Region since 1984. To date, 46 exploratory wells have been drilled, but no commercial quantities of hydrocarbons were encountered. During FY 1990, Mobil Oil Exploration & Producing Southeast, Inc., submitted an EP for drilling on the Manteo Prospect, 47 miles off Cape Hatteras, North Carolina. However, Section 6003 of the Oil Pollution Act of 1990, which was signed August 18, 1990, prohibits MMS from approving the plan. It appears that the earliest date on which MMS can take action on the plan is October 1991. In July 1990, the State of North Carolina denied Federal consistency for the EPA NPDES permit for Mobil's EP. Mobil has appealed this decision to the Secretary of Commerce.

Gulf of Mexico: In the Gulf of Mexico (GOM) OCS Region, exploratory drilling increased by about 12 percent as 512 wells were started compared with 458 last year. Exploratory drilling in the GOM continued to show positive signs of expansion in water depths greater than 200 meters. Several wells of geologic significance, including subsalt plays, were drilled on the continental slope during FY 1990.

Shell Offshore and Exxon continued to expand drilling activities in the ultra-deep waters of the GOM. Shell Offshore drilled Garden Banks Block 594 in 2,942 feet water depth and Green Canyon Block 908 in 5,678 feet water depth, a record in the Western Gulf Planning Area. Shell Offshore still holds the record of drilling in 7,520 feet of water

depth on Mississippi Canyon Block 657. Significant hydrocarbon discoveries, including subsalt accumulations, were reported on deepwater prospects in the GOM, and some leases were qualified as capable of producing hydrocarbons in paying quantities in FY 1990.

Two EP's in the Pulley Ridge Section (Mobil Block 799 and Unocal Blocks 239 and 630) have been denied Federal Coastal Zone Consistency by the State of Florida and have been appealed to the Secretary of Commerce.

In the northeastern GOM, the deep Jurassic Norphlet continued to be an important exploration target. A potentially significant gas discovery in the Norphlet Sandstone was reported in 1989 from the Chevron Well No. 1 in the Destin Dome Area Block 56, south of Pensacola, Florida. Chevron is drilling a second well on this block.

Pacific: One exploratory well was started in the Pacific OCS Region during FY 1990. The Texaco OCS-P O512 No. 1 was spudded on October 30, 1989, and completed on December 30, 1989. This lease is located adjacent to State waters off Point Conception, California.

There are two pending coastal zone appeals for EP's in the Pacific Region: Conoco's appeal of a California Coastal Commission (CCC) denial for an EP on P-OCS 522, which is stayed until September 1991, and Chevron's appeal of a CCC denial of the EP for P-OCS 0525.

Development/Production Activities

Table 7 (page 14) summarizes Federal offshore development and production of the United States during FY 1990. Both activities remain concentrated in the Gulf of Mexico as they have since 1954 and on the Pacific as they have since 1963.

Figure 10 (page 15) shows development well starts over the past decade and Figure 11 (page 16) shows the number of offshore production platforms during the past decade.

Alaska: Although there is no production on Federal leases offshore Alaska, an application from Amerada Hess for unitization of two Federal and five State of Alaska leases for the Seal Island's Northstar discovery was approved on January 25, 1990.

Gulf of Mexico: In the GOM Region, 529 development wells were started, a significant increase of 29 percent over last year's 409 starts. Some development highlights that occurred in the GOM Region during FY 1990:

Table 7. Development/Production on OCS Oil and Gas Leases, FY 1990[a]

Development/Production Activity	Alaska	Atlantic	Gulf of Mexico	Pacific	FY 1989 Totals
Plans for OCS					
Submitted	0	0	240	0	**240**
Approved	0	0	233	0	**233**
Disapproved	0	0	0	0	**0**
Pending	0	0	34	0	**34**
Development Well Starts	0	0	529	17	**546**
Production Platforms					
Total in FY 1989	0	0	[b]3,716	22	**3,738**
Added	0	0	178	1	**179**
Removed	0	0	106	0	**106**
Total as of 09/30/90	0	0	3,788	23	**3,811**
Platform Maximums					
Water depth in feet	N/A	N/A	[c]1,760	1,198	**N/A**
Miles from shore	N/A	N/A	139	11	**N/A**
Pipelines Added	0	0	306	0	**306**
Pipeline Miles Added	0	0	890	0	**890**
Total Pipeline Miles	0	0	18,850	164	**19,014**

[a]The maximum depth of the offshore waters in which production platforms are now located is given in feet, and the maximum distance from shore is given in miles. These statistics are not applicable (N/A) to the Alaska or Atlantic Regions because neither currently has production. Pacific OCS Region's platform count does not include the offshore storage and treatment facilities. The Gulf of Mexico's total platform count at the end of FY 1989 is a revised figure and is different from that reported in the FY 1989 report.
[b]Audited figure.
[c]Conoco's tension leg well platform, Green Canyon Block 184.

- Shell Oil Company announced plans to develop the Auger Field in the Garden Banks area. The $1.1 billion project will include installation of a tension-leg platform in a world record water depth of 2,860 feet. Production is estimated to begin in 1993.

- On a disappointing note, Placid Oil Company announced the shutdown of its pioneering Green Canyon Block 29 floating/subsea drilling and production system in 1,540 feet of water. The system also included a satellite well in 2,243 feet of water. Downhole problems and a greater than anticipated decline in production rates caused the shutdown. The failure of the $400 million project serves as a reminder of the high risk involved in deep-water development.

- Texaco drilled and completed the first documented horizontal well in the GOM. The well, in 180 feet of water in East Cameron Block 265, covered a horizontal length of 670 feet. Texaco will use this technology to develop other shallow horizontal wells in the GOM.

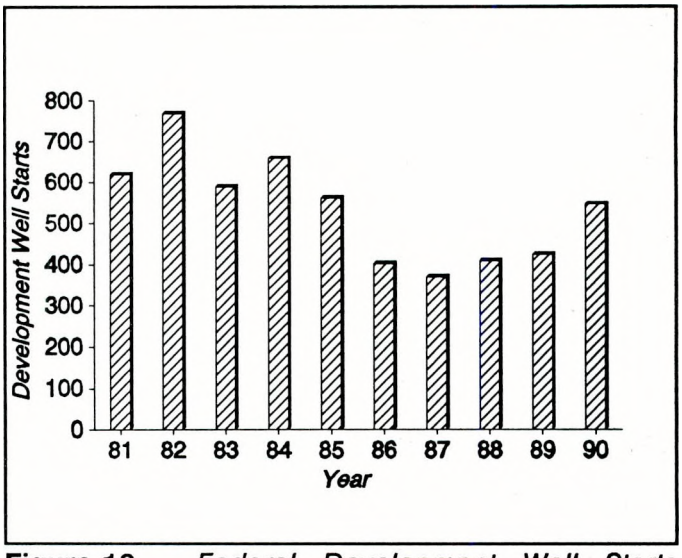

Figure 10. *Federal Development Well Starts Offshore, 1981-90*

- The development of the major discovery of sulphur in the Main Pass Block 299 area moved forward. Freeport McMoRan awarded a contract for the design, fabrication, and installation of a complex of 15 offshore sulphur mining platforms, 13 bridges, a power plant module, and related facilities. In terms of surface area, the connected platforms will be the largest offshore complex in the GOM Offshore Region.

Pacific: Seventeen development wells were started in the Pacific OCS Region during FY 1990. This represented a slight increase over the 15 well starts in FY 1989. A Federal offshore record for a maximum horizontal displacement distance was set by Well No. H-37, which was drilled from Platform Hondo on Lease OCS-P 0188. Well No. H-37 was drilled to a measured depth of 17,900 feet. The horizontal displacement was 13,612 feet, or 2.58 miles.

The jacket of Platform Heritage was installed in 1,074 feet of water on October 7, 1989. It became the second Pacific Federal offshore OCS platform to be installed in over 1,000 feet of water. Heritage, in the Pescado Field (Santa Ynez Unit), is approximately 8 miles from shore and can accommodate 60 wells.

Reserve Inventory

The MMS, in its administering of the OCS Oil and Gas Leasing Program, is responsible both for monitoring the Nation's offshore reserves of known hydrocarbon deposits and for estimating its potentially recoverable undiscovered resources. These responsibilities include the maintenance of the Reserves Inventory Program established in FY 1977 to estimate the reserves of newly discovered Federal offshore fields and to revise and update those estimates as new geological, engineering, and production data are collected.

Before 1988, "proved" reserves estimated by MMS included quantities of natural gas or oil known to exist as a result of drilling that were deemed recoverable by use of current technology under current economic conditions. The MMS also included "unproved" reserves with its estimates—reserves which may be recoverable under future economic/technological conditions. Beginning in 1988, reserve estimates were recategorized to coincide with the definitions of reserves adopted by the Society of Petroleum Engineers in 1987. Reserve estimates reported for 1988 and 1989 are from proved fields in the Gulf of Mexico Region and from proved and unproved fields in the Pacific Region. As of January 1, 1990, the Reserves Inventory Program estimated that the submerged Federal lands contained remaining reserves of 42.4 trillion cubic feet of natural gas and 4.6 billion barrels of crude oil. Table 8 (page 17) compares the 1989 estimates of original and remaining natural gas and oil reserves in new and developed Federal offshore fields with the 1988 estimate of reserves.

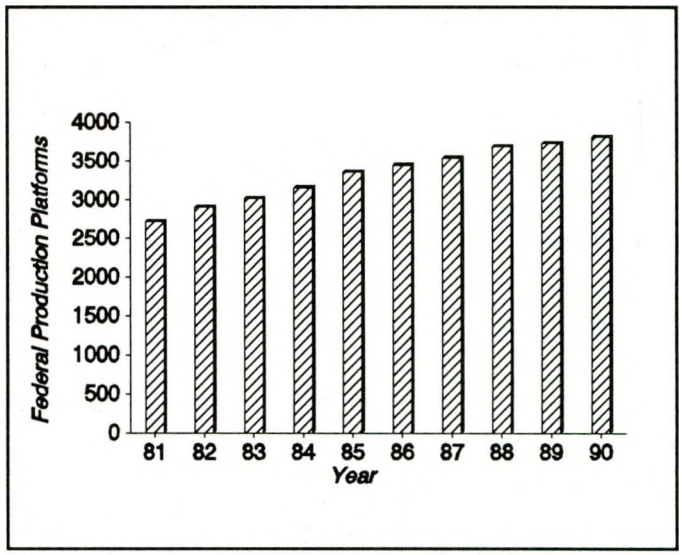

Figure 11. *Federal Production Platforms Offshore, FY 1981-90*

In Table 8, reserves are estimated in the respective MMS regions using geologic, geophysical, and engineering data supplied by exploration companies and lease operators. These estimates are inventoried by field and by reservoir. An important tool of the Reserves Inventory Program is the Field and Reservoir Reserves Estimates (FRRE) system. The FRRE system is a computerized storage and retrieval system used to assimilate new or updated reserve estimates into the inventory. It is a part of the Outer Continental Shelf Information System (OCSIS), which stores and uses information for reserve estimates. The Reserves Inventory Program provides essential data and assistance to other programs within MMS. In addition to maintaining and publishing reserve inventories, the MMS relies on the offshore field mapping and reservoir analysis by this program as support for its supervision of field and reservoir development. This supervision includes decisions on unitization of tracts, drilling permits, production rate control, and geological and engineering analysis for future lease sale bid evaluations.

Table 8. *1989 Estimates of Original and Remaining Natural Gas and Oil Reserves in New and Developed Federal Offshore Fields, Compared with the 1988 Estimates of Reserves*[1]

	Original Reserves		Cumulative Production		Remaining Reserves		
	Oil in Bbbl	Gas in Tcf	Oil in Bbbl	Gas in Tcf	Oil in Bbbl	Gas in Tcf	No. of Fields Studied
Pacific (Southern California) OCS[2]							
1989	1.99	2.72	0.46	0.48	1.52	2.25	37
1988	1.73	2.47	0.43	0.43	1.30	2.04	24
Gulf of Mexico OCS[3]							
1989	10.87	129.10	7.84	88.92	3.03	40.18	739
1988	10.95	126.70	7.56	84.31	3.39	42.40	678

[1]Source: OCS Report MMS 90-0086 for the Pacific and OCS Report MMS 90-0082 for the Gulf of Mexico.
[2]All estimates are calculated for each year as of December 31, crude oil is given in billions of barrels (Bbbl) at 60 degrees Fahrenheit, 14.696 psia (pounds per square inch area) (14.73 psia in the Pacific Region); and natural gas in trillions of cubic (tcf) at 60 degrees Fahrenheit, 15.025 psia (14.73 psia in the Pacific Region).
[3]For the Gulf of Mexico in 1989, only "proved" reserves are reported in accordance with reserves definitions adopted by the Society of Petroleum Engineers in 1987.

Conventional Undiscovered Economically Recoverable Resources

Estimates of the Nation's undiscovered natural gas and oil resources, both onshore and offshore, are necessary for national energy planning and for land-use decisions. The MMS and the U.S. Geological Survey (USGS) assessed the undiscovered conventional natural gas and oil resources of the United States in a joint national assessment, which was completed in 1980. The MMS completed a revised assessment of the Federal offshore in 1984; these revised estimates were the basis for the developing of the current 5-Year OCS oil and gas leasing program (1987–92).

Since the previous national assessment, considerable geologic and geophysical information has been collected through exploration activities in onshore and offshore areas of the United States. Significant changes in economic conditions, conventional recovery techniques, and other pertinent factors associated with the natural gas and oil industry have also influenced resource assessment. In addition, large amounts of natural gas and oil have been discovered since 1980, transferring volumes from the *undiscovered resource* category to the *proven reserves* category. Finally, the assessment methodologies used by both agencies have been significantly improved. One improvement is the MMS's implementation of a 1986 recommendation by the National Academy of Sciences to develop a method to estimate amounts of natural gas and oil that are not economically recoverable under existing and reasonably projected economic conditions, but which may be economically recoverable in the future. Collectively, these changes necessitated a new joint national assessment which reflects information available as of January 1, 1987.

Subsequent to the completion of the 1987 joint national assessment, additional data have been collected. The MMS determined that an updated assessment was warranted for Federal offshore areas in which significant new data were available; this updated Federal offshore assessment reflects information available as of January 1, 1990, and will be used in the development of the next 5-Year comprehensive Federal Offshore Natural Gas and Oil Resource Management Program for 1992–97.

Table 9, (pages 19, 20) presents estimates of conventional undiscovered economically recoverable natural gas and oil that may exist offshore as of January 1, 1990. The estimates are reported for 22 of the 26 planning areas in the four MMS offshore regions. Four planning areas in the Alaska Region (Aleutian Arc, Aleutian Basin, Bowers Basin, and St. Matthew-Hall) are estimated to contain negligible quantities of economically recoverable hydrocarbons and are not listed in the table.

As in previous assessments, the MMS develops resource estimates using a computer-based mathematical model called PRESTO (Probabilistic Resource Estimates Offshore). The model uses a prospect-specific database, which is developed from regional interpretations of geologic, geophysical, engineering, and economic information. The model develops resource estimates as ranges of possible values, with associated probabilities of occurrence. Each estimate presented in Table 9 is the average (i.e., mean) value of a range of estimates.

Two types of resource estimates (conditional and risked) are presented in Table 9. *Conditional* estimates reflect the amount of hydrocarbons estimated for an area given the assumption that economically recoverable hydrocarbons exist in the area. The *marginal probability of hydrocarbons* (displayed as a decimal fraction) expresses the chance that economically recoverable hydrocarbons exist in the area (e.g., the marginal probability for an area in which economically recoverable hydrocarbons are estimated to exist with certainty is expressed as 1.00). However, economically recoverable accumulations of hydrocarbons are not known to exist in the majority of planning areas. The *risked* estimates incorporate these various probabilities of existence and are useful, therefore, when making comparisons of resource potential between planning areas.

Table 9. *Estimates of Undiscovered Economically Recoverable Oil and Gas Resources in 22 Planning Areas of 4 OCS Regions, as of January 1, 1990*

OCS Region/ Planning Area	Marginal Prob.*	Conditional Mean Oil (Bbbl)	Conditional Mean Gas (Tcf)	Risked Mean Oil (Bbbl)	Risked Mean Gas (Tcf)	Risked (BBOE)
ALASKA OCS REGION						
Gulf of Alaska**						
Leased and unleased	0.04	0.98	0.00	0.04	0.00	0.04
Unleased	0.04	0.98	0.00	0.04	0.00	0.04
Cook Inlet**						
Leased and unleased	<0.01	0.17	0.00	neg.	0.00	neg.
Unleased	<0.01	0.17	0.00	neg.	0.00	neg.
Kodiak**						
Leased and unleased	0.03	0.43	0.00	0.01	0.00	0.01
Unleased	0.03	0.43	0.00	0.01	0.00	0.01
N. Aleutian**						
Leased and unleased	0.02	0.61	0.00	0.01	0.00	0.01
Unleased	0.02	0.61	0.00	0.01	0.00	0.01
Shumagin**						
Leased and unleased	0.01	0.28	0.00	neg.	0.00	neg.
Unleased	0.01	0.28	0.00	neg.	0.00	neg.
St. George Basin						
Leased and unleased	0.02	0.39	0.00	0.01	0.00	0.01
Unleased	0.02	0.38	0.00	0.01	0.00	0.01
Leased	<0.01	0.11	0.00	neg.	0.00	neg.
Navarin Basin						
Leased and unleased	0.03	1.14	0.00	0.03	0.00	0.03
Unleased	0.03	0.90	0.00	0.03	0.00	0.03
Leased	0.03	0.33	0.00	0.01	0.00	0.01
Norton Basin						
Leased and unleased	<0.01	0.58	0.00	neg.	0.00	neg.
Unleased	<0.01	0.51	0.00	neg.	0.00	neg.
Leased	<0.01	0.17	0.00	neg.	0.00	neg.
Hope Basin**						
Leased and unleased	<0.01	0.50	0.00	neg.	0.00	neg.
Unleased	<0.01	0.50	0.00	neg.	0.00	neg.
Chukchi Sea**						
Leased and unleased	0.23	5.96	0.00	1.36	0.00	1.36
Unleased	0.21	4.16	0.00	0.88	0.00	0.88
Beaufort Sea						
Leased and unleased	0.23	1.66	0.00	0.38	0.00	0.38
Unleased	0.16	1.45	0.00	0.24	0.00	0.24
Leased	0.15	0.94	0.00	0.14	0.00	0.14
ATLANTIC OCS REGION						
North Atlantic**						
Leased and unleased	0.39	0.11	2.54	0.04	1.00	0.22
Unleased	0.39	0.11	2.54	0.04	1.00	0.22
Mid-Atlantic						
Leased and unleased	0.44	0.22	5.35	0.10	2.36	0.52
Unleased	0.44	0.17	4.40	0.08	1.95	0.43
Leased	0.32	0.08	1.61	0.03	0.51	0.12
South Atlantic						
Leased and unleased	0.23	0.21	4.60	0.05	1.06	0.24
Unleased	0.23	0.20	4.39	0.05	1.01	0.23
Leased	0.09	0.01	0.26	neg.	0.02	neg.
Straits of Florida**						
Leased and unleased	0.19	0.34	0.57	0.06	0.11	0.08
Unleased	0.19	0.34	0.57	0.06	0.11	0.08

Table 9. *Estimates of Undiscovered Economically Recoverable Oil and Gas Resources in 22 Planning Areas of 4 OCS Regions, as of January 1, 1990* (continued)

OCS Region/ Planning Area	Marginal Prob.*	Conditional Mean Oil (Bbbl)	Conditional Mean Gas (Tcf)	Risked Mean Oil (Bbbl)	Risked Mean Gas (Tcf)	Risked (BBOE)
GULF OF MEXICO OCS REGION						
Eastern Gulf**						
Leased and unleased	1.00	0.95	1.68	0.95	1.68	1.25
Unleased	1.00	0.80	1.11	0.80	1.11	1.00
Leased	1.00	0.15	0.56	0.15	0.56	0.25
Central Gulf						
Leased and unleased	1.00	3.82	37.66	3.82	37.66	10.52
Unleased	1.00	2.76	25.95	2.76	25.95	7.38
Leased	1.00	1.04	11.76	1.04	11.76	3.13
Western Gulf						
Leased and unleased	1.00	1.58	25.40	1.58	25.40	6.10
Unleased	1.00	1.42	21.22	1.42	21.22	5.20
Leased	0.99	0.15	4.22	0.15	4.20	0.90
PACIFIC OCS REGION						
Washington-Oregon***						
Leased and unleased	0.25	0.19	1.97	0.05	0.49	0.14
Unleased	0.25	0.19	1.97	0.05	0.49	0.14
Northern California***						
Leased and unleased	0.78	0.89	2.45	0.69	1.91	1.03
Unleased	0.78	0.89	2.45	0.69	1.91	1.03
Central California***						
Leased and unleased	0.90	0.50	0.82	0.45	0.74	0.58
Unleased	0.90	0.50	0.82	0.45	0.74	0.58
Southern California						
Leased and unleased	1.00	1.31	3.01	1.31	3.01	1.84
Unleased	1.00	0.97	2.21	0.97	2.21	1.36
Leased	1.00	0.32	0.86	0.32	0.86	0.47

* Marginal probability of hydrocarbons expresses the chance that commercial hydrocarbons exist in at least one prospect in the area.

**Estimates for Eastern Gulf of Mexico were revised in July 1989.

*** No OCS lands under lease as of January 1, 1987.

Note: Estimates by the MMS as of January 1, 1990: oil in billions of barrels (Bbbl), gas in trillions of cubic feet Tcf), risked mean total in billions of barrels of oil equivalent (BBOE). Negligible (neg.) quantities are given when reliable data indicate little or no concentration of usable, producible hydrocarbons, on the average, under current economic conditions and using current technology.

Production Activities

Commercial natural gas and oil production continued to be limited to Federal leases on the Gulf of Mexico and the Pacific OCS. In FY 1990, production from these Federal offshore fields represented 25.7 percent of total U.S. gas production and 11.4 percent of total U.S. oil production. As in the previous fiscal year, there was no production from either the Alaska or Atlantic Regions. Table 10 lists the natural gas and oil volumes from the 7,275 producing wells on the OCS.

Table 10. *Natural Gas and Oil Production From Wells on Offshore Federal Leases, FY 1990*[1]

Production	Alaska	Atlantic	Gulf of Mexico	Pacific	FY 1990 Totals
Crude Oil (Mbbl)	0	0	227,900	31,451	**259,351**
Condensate (Mbbl)	0	0	47,966	2	**47,968**
Natural Gas (MMcf)	0	0	4,659,212	33,049	**4,692,261**
Producing Wells:					
Oil Wells	0	0	3,475	385	**3,860**
Gas Wells	0	0	3,400	15	**3,415**

[1]Natural gas (gas-well gas and well or casinghead gas) are reported in millions of cubic feet (MMcf) and crude oil and condensate are reported in thousands of barrels (Mbbl). The royalty from this reported offshore production may be found under "Receipts: Accounts 142020 and 14X6706" on p.55

Offshore figures over the past 10 years for crude oil, condensate production, and natural gas are depicted in Figure 12, Figure 13, and Figure 14 (pages 22, and 23).

Overall, offshore production of natural gas, including gas-well gas and casinghead gas, increased by 11.0 percent, and offshore production of crude oil and condensate decreased by 2.4 percent from that reported in FY 1989. Natural gas production increased by 11.1 percent in the Gulf of Mexico Region and increased by 1.0 percent in the Pacific Region. Oil and condensate production decreased by 2.4 percent in the Gulf of Mexico Region and decreased by 8.4 percent in the Pacific Region.

As of September 30, 1990, the 7,249 producing wells on Federal leases included the Gulf of Mexico Region's 3,400 gas wells and 3,475 oil wells and the Pacific Region's 15 gas wells and 385 oil wells. At the end of FY 1990, the Gulf of Mexico had 100 more producing gas wells and 75 fewer producing oil wells than at the end of FY 1989. For the same period, the Pacific had one more gas well and the same number of oil wells.

Figure 15 (page 23) shows the number of producing natural gas and oil wells on Federal offshore leases over the past 10 fiscal years.

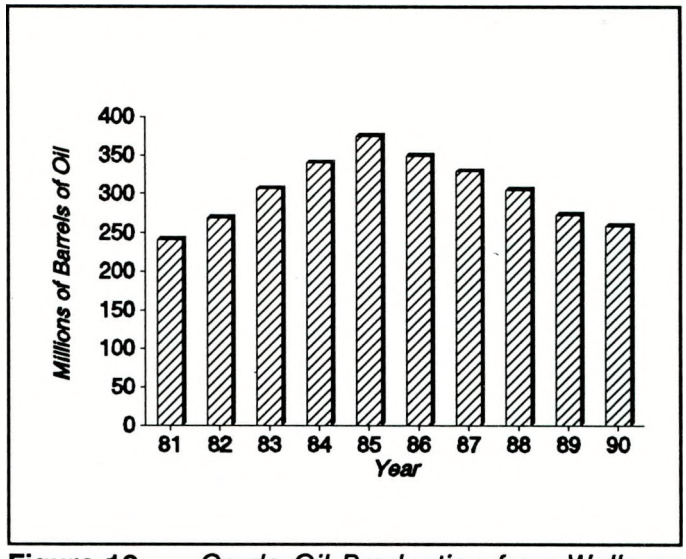

Figure 12. *Crude Oil Production from Wells on Federal Offshore Leases, FY 1981-90*

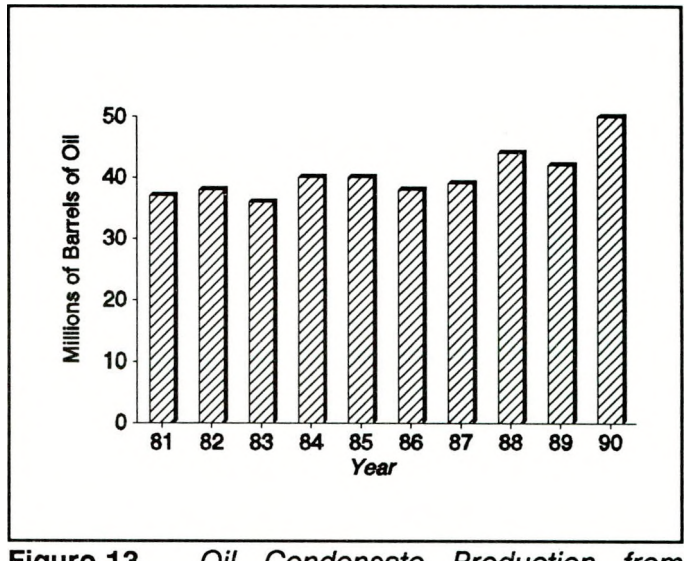

Figure 13. *Oil Condensate Production from Wells on Federal Offshore Leases, FY 1981-90*

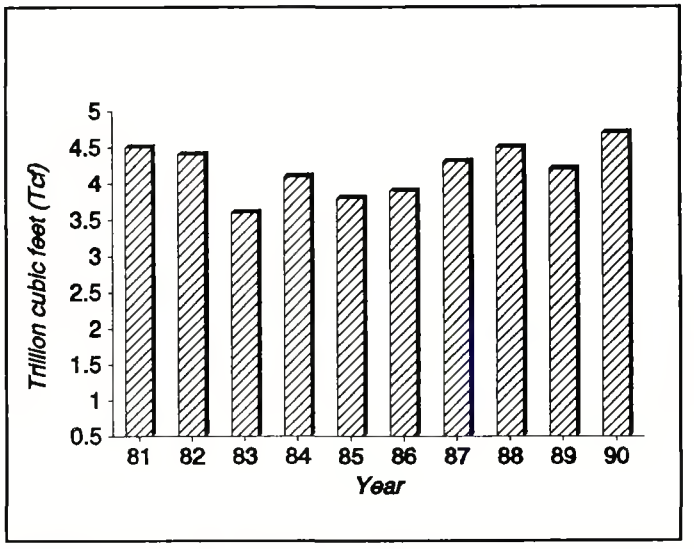

Figure 14. *Natural Gas Production from Wells on Federal Offshore Leases, FY 1981-90*

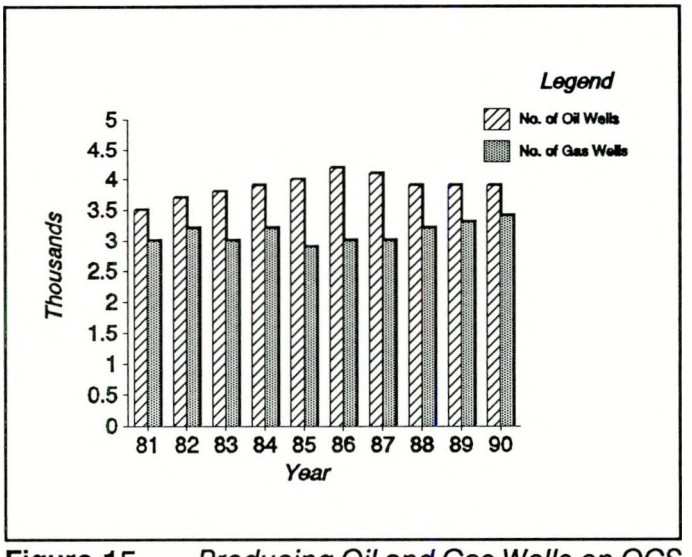

Figure 15. *Producing Oil and Gas Wells on OCS Leases, FY 1981-90*

Litigation Affecting Federal Offshore Leasing

- **People of the Village of Gambell, et al., v. Lujan, Cir. No. A85-184 (Gambell II) (aboriginal rights in the Norton Basin litigation)**

  This litigation has been ongoing since April 1985. The latest event was that the Ninth Circuit ruled in the plaintiffs' favor that the law does recognize aboriginal claims in the high seas and Outer Continental Shelf (OCS). The ruling rejected the Department of the Interior's arguments that the Alaska Native Claims Settlement Act (ANCSA) extinguished aboriginal claims, if any, in the OCS.

  It is unclear what kind of aboriginal rights the court has said the law will recognize in the submerged lands of and waters above the OCS. Through its power to fashion Federal common laws, the court appears to have extended the traditional concept of aboriginal rights of exclusive use and occupancy to the waters of the Norton Sound off Alaska. This ruling would be extremely disruptive to Department of the Interior programs in Federal waters offshore Alaska. It is possible, however, that the court intended to recognize aboriginal rights of Native Alaskans that are nonexclusive and protected only against significant interference.

  The Department of the Interior sought a reconsideration by the Ninth Circuit to clarify its opinion, but the motion for rehearing was denied on July 18, 1989. The case was remanded to the District Court for a determination of the factual issues of whether the villages in fact possess aboriginal subsistence rights in the OCS.

  While on remand, the plaintiffs filed a motion to amend their complaint to aboriginal rights to the Norton Sound area and numerous violations of Federal law pertaining to tribes. The plaintiffs have also requested to add nine native entities to the case. The case is pending in district court.

- **Village of Akutan, et al., v. Lujan, No. 859F.2d651 (9th Cir., 1988)**

  On October 5, 1988, the Ninth Circuit upheld Secretary Lujan on the merits of his decision to hold Sale 92 in the North Aleutian Basin off Alaska. It rejected the State's claim under section 19 of the OCS Lands Act that the Secretary had improperly rejected the Governor's recommendation to delay the sale for 8 years. The court also rejected the claim of the Natural Resources Defense Council that the Secretary's EIS was premised on an irrational oil-spill risk model. Finally, the court found that the Secretary had rationally rejected the recommendation of the National Marine Fisheries Service (NMFS), presented as a "reasonable and prudent alternative" to the full lease sale under the Endangered Species Act, to delete all tracts within 25 miles of the Alaska Peninsula.

  The lease sale was held on October 11, 1988. Twenty-three leases were awarded for bonuses of over $95 million. On October 26, 1988, the plaintiffs filed a motion to reconsider. On March 9, 1989, the Ninth Circuit issued an amended opinion still in

favor of the Federal Government and an order denying the plaintiffs' petition. On June 7, 1989, the State of Alaska filed a motion for certiorari with the Supreme Court. The Federal Government's answer was filed in August 1989. On October 2, 1989, the U.S. Supreme Court denied the petitions to review the case. Still at issue in the case are the aboriginal subsistence rights. The case is pending resolution of the Norton Basin aboriginal rights issue in Gambell.

- **Foundation on Economic Trends, et al., v. Watkins, et al., Civ. No. CV 89-1483 GHR (D.D.C.) (Global warming litigation)**

  On May 23, 1989, the Foundation on Economic Trends, the Greenhouse Crisis Foundation, and Jeremy Rifkin filed suit against the Departments of the Interior, Agriculture, and Energy. The plaintiffs seek to enjoin these Federal departments from authorizing, approving, or funding any programs that "contribute to the 'greenhouse effect'" until the defendants discuss and evaluate in their environmental analyses the impacts of their programs on the greenhouse effect.

  The defendants have filed a motion to dismiss, based upon the plaintiffs' failure to present a justifiable case or controversy. The plaintiffs did not identify any specific National Environmental Protection Act (NEPA) document or decision as the subject of their challenge. The motion was denied on February 12, 1990. The parties are currently conducting discovery.

- **Natural Resources Defense Council, et al. v. Hodel, et al., (D.C. Circuit) (5-Year OCS Oil and Gas Leasing Program litigation)**

  On December 30, 1988, the D.C. Circuit Court of Appeals issued its decision in this case challenging the 5-Year OCS Oil and Gas Leasing Program. Considering 10 issues raised under the NEPA, the OCSLA, and section 111 of P. L. 99-591, of the Department of the Interior's appropriations bill, the court denied the petitioner's request for injunctive relief, thus refusing to enjoin any sales on the 5-year leasing schedule. The court held that the final EIS inadequately analyzed the cumulative impact of the program on the migratory species, particularly salmon and gray whales, and remanded that issue to the Secretary for further consideration. On all other issues raised, the court upheld the Department's program. The MMS published a final supplemental EIS on cumulative impacts on migratory species in the Pacific and Alaska regions in August, 1990.

Regulations, Enforcement, and Safety

Regulations

Work continued on the revision, clarification, and consolidation of the complex rules and regulations governing Federal offshore gas, oil, and sulphur leasing operations. During FY 1990, five rules were promulgated as final rules. Work began or continues on many more rules. A summary of this rulemaking activity follows.

Final Rules

- 30 Code of Federal Regulation (CFR) Parts 218, 250, 251, 252, and 256: A final rule was published in the *Federal Register* (54 FR 50615), on December 8, 1989, and became effective on the date of publication. This rule corrected a number of inadvertent errors that appeared in the regulations of the Minerals Management Service (MMS). In addition, several addresses were changed due to a recent consolidation of many of the MMS employees in the Washington, D.C., area. This action notified the public of the errors and changes of addresses, facilitating public access to MMS and its regulatory program.

- 30 CFR Part 290: A final rule was published in the *Federal Register* (54 FR 52796), on December 22, 1989 and became effective January 22, 1990. This final rule established the policy of MMS relative to the timely filing of appeals under 30 CFR Part 290. The final rule requires the filing of an appeal within 30 days after receipt of the order or decision being appealed, but allows for a grace period if the appeal is received within the following 10 days and there is evidence that the notice of appeal was sent prior to the end of the initial 30 days. Although it could be argued that the previous policy, without such appeals, had merit, MMS believes that it is in the public interest to provide a more accommodating system for the timely filing of appeals.

- 30 CFR Part 250: A final rule was published in the *Federal Register* (55 FR 10614), on March 22, 1990 and became effective April 23, 1990. Previous rules governing offshore natural gas and oil operations required that safety and pollution-prevention equipment (i.e., surface safety valves [SSV], under-water safety valves [USV], and subsurface safety valves [SSSV]) be manufactured in accordance with a quality assurance program specified in the rule. The amended rule updates the American Society of Mechanical Engineers/American National Standards Institute (ASME/ANSI) (formerly ANSI/ASME) SPPE-1 quality assurance standard from the 1985 edition to the 1988 edition. Included are addenda a, b, and c, which recognize the American Petroleum Institute (API) quality assurance program, (API Spec Q1 in combination with API Spec 14A and Spec 14D, including Supplement 1 for API 14A and Supplement 1 for API Spec 14D, both dated August 1, 1989), as an acceptable alternative or optional quality assurance program for the manufacture of safety and

pollution-prevention equipment. The addenda for the 1988 edition of ASME/ANSI SPPE-1 were included in this rule to ensure that the most current edition of this standard was cited. The MMS reviewed these addenda and determined that they do not require further public review because they do not have a significant impact on the 1988 edition of ANSE/ANSI SPPE-1.

- 30 CFR Parts 256, 265, 266, 267, and 268: A final rule containing technical amendments was published in the *Federal Register* (55 FR 32907), on August 13, 1990 and became effective on the date of publication. This rule corrected reference errors that appeared in 30 CFR Part 256 of MMS regulations. In addition, since Federal offshore orders have been or are being incorporated into the offshore operating rules at 30 CFR Part 250, there is no further need to reserve 30 CFR Parts 265 through 268 for the Alaska, Atlantic, Gulf of Mexico, and Pacific OCS Orders. This action was taken to notify the public of the corrections and changes referred to above.

- 30 CFR Part 250: A final rule was published in the *Federal Register* (55 FR 37709), on September 13, 1990 and became effective on October 15, 1990. Previous rules governing offshore natural gas and oil operations required that safety and pollution-prevention equipment (i.e., SSV's, USV's, and SSSV's) be manufactured in accordance with a quality assurance program specified in the rule. The MMS reviewed the third edition of the API Spec Q1 and addendum d to SPPE-1-1988 and determined that the changes were minor and did not require public review because they did not have a significant impact on the current documents incorporated by reference. This final rule amended the existing rule by updating the two recognized quality assurance programs that are incorporated by reference into 30 CFR 250.126. The API quality assurance program, API Spec Q1, is updated from the 1988 edition to the 1990 edition and the ASME/ANSI quality standard, SPPE-1-1988, is updated to include Addenda SPPE-1d-1990.

Proposed Rules

- 30 CFR Part 256: A proposed rule was published in the *Federal Register* (55 FR 2388) on January 24, 1990. This proposed rule would amend the provisions of Part 256 of Title 30 of the CFR to increase the amount of surety bond coverage required of lessees, operators, or assignees prior to the beginning of exploration and prior to the beginning of development and to require that bonds be issued by a surety certified by the U.S. Department of the Treasury. The proposed rule would also identify with greater specificity the parties responsible for furnishing the required bond coverage prior to MMS approval of a lease transfer and assignment.

  These revisions are being proposed because the current level of bond coverage was established about 20 years ago and is clearly insufficient to cover increased costs of compliance with the conditions and terms of a lease in the event of a significant default. A correction to the proposed rule was published in the *Federal Register* (55 FR 3603) on February 2, 1990, to correct an error in the preamble of the proposed rule at 55 FR 2388. This notice provides the corrected language for the preamble, which inadvertently omitted parts of two sentences containing language specifying that a $200,000 lease bond would be required.

- 30 CFR Part 250: Published in the *Federal Register* (55 FR 8485), on March 8, 1990 this rule proposes to amend the regulatory program of MMS governing offshore natural gas and oil operations. This action is required to notify the public of the proposed amendments and to invite substantive comments and recommendations on the content of the proposed action. The objective of this rule is to facilitate the public's access to MMS and to clarify provisions of the regulatory program administered by MMS. A new paragraph titled "crane operations" (§250.20(c)) would be added to notify operators of requirements concerning the safe operation and maintenance of cranes on fixed platforms used during drilling, well-completion, well-workover, and production operations. The MMS is responsible for establishing requirements for cranes installed on all fixed facilities according to the Memorandum of Understanding between MMS and the U.S. Coast Guard dated August 29, 1989.

- 30 CFR Part 250: A proposed rule was published in the *Federal Register* (55 FR 18639) on May 3, 1990. The MMS proposes to modify the regulations governing drilling, well-completion, and well-workover operations under a natural gas and oil lease in Federal offshore waters. The rule would identify with greater specificity the information that must be recorded by the lessee to describe testing of the lessee's blowout preventer (BOP) and auxiliary equipment. An added provision would allow MMS to request information concerning pressure conditions during testing of BOP's and auxiliary equipment. The change is necessary to allow MMS personnel to verify the adequacy of lessee-conducted tests that are needed to assure that BOP's and auxiliary well-control equipment, if needed, will operate effectively. This change will enable MMS personnel to better assess the effectiveness of a BOP system during their review of the documentation of the method and procedures used by a lessee to conduct a BOP test and results obtained.

- 30 CFR Part 250: A proposed rule was published in the *Federal Register* (55 FR 31405) on August 2, 1990. This rule proposes to update API's Recommended Practice for Planning, Designing, and Constructing Fixed Offshore Platforms (API RP2A) and API RP 500B—Recommended Practice for Classification of Locations for Electrical Installations at Drilling Rigs and Production Facilities on Land and on Marine Fixed and Mobile Platforms (API RP500B). This action is required to notify the public of the changes MMS is proposing and to solicit comments on the subject.

- 30 CFR Part 250: A proposed rule was published in the *Federal Register* (55 FR 33326) on August 15, 1990. This proposal amends rules governing natural gas, oil, and sulphur operations in the OCS, (Subpart D—Drilling Operations, §250.67, hydrogen sulfide) to revise the requirements for visual and audible warning systems, personnel protection, hydrogen sulfide (H_2S) detection and monitoring, sulphur dioxide (SO_2) detection and monitoring, and the criteria for the activation of visual and audible warning systems. Most of these amendments are necessary for consistency with new personnel exposure limits for H_2S and SO_2 promulgated by the Occupational Safety and Health Administration on January 19, 1989 (54 FR 2332). Other revisions pertaining to training requirements, calibration of H_2S sensors, H_2S sensors on production facilities, H_2S sensors in drilling mud, visual warning signs, helicopter flights, resuscitators, metallurgy, and disposal of water containing H_2S have been proposed as a result of comments from lease operators and MMS field personnel.

- 30 CFR Part 250: A proposed rule was published in the *Federal Register* (55 FR 33539) on August 16, 1990. A provision is proposed to be added to the regulations governing oil, gas, and sulphur operations in the Federal offshore to clarify that any person observing an apparent violation of MMS regulations can report the apparent violation, and MMS will investigate the allegation. The provision was a part of the regulations in effect prior to 1988 but was dropped when the offshore operating rules were revised in 1988. Although allegations of violations of MMS regulations are investigated under existing rules, incorporation of the new provision into Part 250 will ensure that more people are aware that allegations of violations of MMS regulations will be investigated.

Well-Control Schools

Begun in FY 1979, the MMS well-control training program is designed to ensure that Federal offshore drilling crews know how to prevent and control blowouts. The MMS training approval process includes the review of all training program documents submitted and initial onsite evaluation of industry-run training schools to verify that the program is being implemented as approved. After initial approval, the MMS makes unannounced visits to assure continued compliance. During FY 1990, the MMS conducted unannounced evaluations of 26 well-control schools.

The MMS also conducted onsite evaluation of 11 certified drilling well-control training programs in FY 1990. By year end, 47 basic, 48 refresher, and 63 rotary helper/derrickman courses were operating for a total of 158 certified well-control schools.

Inspection and Enforcement

The MMS Task Force on Inspection and Enforcement issued a report in FY 1990 which contained several recommendations to improve the MMS Offshore Inspection Program. The Offshore Minerals Management subsequently undertook several initiatives to implement the recommendations:

- A work group was convened to develop a format for Regional Policies and Procedures Manuals to replace the current Regional Office Supplements, Regional Supervisor Instructions, and District Instructions. The task is scheduled for completion during FY 1991.

- A proposed Safety and Environmental Management Plan (SEMP) criteria document was developed during FY 1990. Public comment on the SEMP concept will be solicited during FY 1991.

- A pilot sampling inspection program was conducted in the Gulf of Mexico during FY 1990. A second pilot program is scheduled for FY 1991.

- During FY 1991, work will commence to upgrade the Offshore Inspection System data base (1) to add modules for environmental, meters and site security, pipelines, well completion, well workover, and other inspections and (2) to develop requirements for tracking trends in equipment and system performance.

- During FY 1991, a standing Inspection Steering Committee with broad representation will be established.

- A study was commenced during FY 1990 to upgrade the inspection work force.

- A work group was formed during FY 1990 to develop a formal inspector training program.

In addition, draft guidelines for the production measurement/site security Potential Incidents of Noncompliance (PINC's) were developed during FY 1990. Final guidelines will be completed during FY 1991.

As of September 30, 1990, there were 23 production platforms and one offshore storage and treatment vessel operating in the Pacific OCS. Four workover/completion rigs were also operating in the region at the end of FY 1990. The number of production platforms installed increased by one during the fiscal year. A total of 10 petroleum engineering technicians some engaged in onsite inspection of facilities each day using two contract helicopters.

A complete inspection is performed on all offshore production facilities each year in addition to numerous daily inspections. Daily inspections include inspection of drilling, production, workover, completion, abandonment, pipelines, measurement, and construction operations, as well as site security inspections and inspections of oil-spill equipment and exercises.

During FY 1990, the MMS conducted 11,912 inspections of drilling, production, pipeline, measurement, completion, workover, and abandonment operations: 115 in the Alaska OCS Region; 10,364 in the Gulf of Mexico OCS Region; and 1,434 in the Pacific OCS Region.

In the Pacific OCS Region, 1,899 inspections were performed of all phases of drilling and production operations. A total of 671 INCS were issued as a result of these inspections.

Equipment Certification

In January 1980, the MMS established current equipment certification requirements when it issued the revised OCS Orders. During FY 1990, the Committee on Safety and Pollution Prevention Equipment of the American Society of Mechanical Engineers (ASME) continued participating in the industry-wide certification program. In March 1990, the equipment certification program of the American Petroleum Institute (API) was incorporated by reference in the regulations as an alternate program. During FY 1990, the MMS worked closely with the API Committee on Quality to implement their program.

Platform Verification

Since FY 1980, MMS has monitored offshore structures through its Platform Verification Program (PVP), which is directed by the MMS Office of Structural and Technical Support. Through the PVP, MMS provides guidelines that help ensure that fixed and bottom-founded natural gas and oil platforms and other structures on Federal offshore leases have a high probability of surviving the extreme environmental conditions to which they are exposed. Accordingly, the PVP requires that the design, fabrication, installation, or major modification of all platforms and other structures be reviewed and evaluated by lessee-nominated independent technical organizations certified by MMS. These third parties are known as Certified Verification Agents.

The Federal offshore platforms subject to review under the PVP include those used in frontier areas where severe weather or extreme environmental conditions prevail and those that incorporated unusual or innovative design features. Thirteen structures were under review in FY 1990. Nine of these were projects that originated in FY 1990 (eight template-type structures and Shell's tension-leg platform); all were destined for the Gulf of Mexico OCS Region.

The PVP staff continued their review of Exxon Oil Company's Harmony and Heritage platforms in the Santa Ynez Unit in the Pacific OCS Region. The jacket section of Platform Heritage was installed during FY 1990. The PVP staff also continued to serve on an API task group responsible for developing guidelines for the relocation and reuse of existing platforms. Ninety-five offshore structures have been reviewed by the PVP since 1980.

Technology Assessment and Research

The Technology Assessment and Research (TA&R) program is an integral part of MMS offshore operations. It provides a formal technology base for regulatory personnel who work with the natural gas and oil industry operating in the frontier areas of the deeper oceans and the ice-infested waters of the Arctic.

The TA&R program assesses and analyzes the applicability of technologies, and where deemed necessary, sponsors applied research. Through these studies, a continuing engineering dialogue among industry, universities, and MMS personnel is maintained. For management purposes, study areas are grouped in the categories of operational safety (blowout prevention, fire safety, etc.), verification of offshore structures and pipelines, and technologies to prevent pollution of the environment from offshore operations. The TA&R program findings are used in MMS operations in support of operational permits and plan approvals, safety and pollution inspections, enforcement actions, accident investigations, and control training requirements.

Priorities for technology assessment and research are drawn from the Department of the Interior's 5-year OCS Gas and Oil Leasing Program and on the inferences drawn from

industry planning and research. In this way, the TA&R program can achieve maximum effectiveness by providing analyses in a timely manner to ensure safety and prevent pollution.

Current TA&R programmatic emphasis is as follows:

- improved blowout-prevention procedures for deep-water drilling and improved diverter systems for use when shallow-gas blowouts occur before blowout preventers are installed;
- inspection problems associated with structural aging as well as for innovative deepwater platforms and pipelines;
- exhaust gas pollution mitigation techniques for offshore platform power and heat generation;
- oil-spill mitigation techniques, including the detection of spills and response technologies and procedures; and
- quantification of earthquake forces on OCS structures, pipelines, and other facilities.

The program currently administers about 40 active projects at universities, private companies, and government laboratories. Most projects are jointly sponsored with the offshore industry or other government agencies, U.S. and foreign. In this context, memorandums of agreement are established to enhance cooperation. For example, the largest technology program, oil spill response, is a combined MMS-Environment Canada effort. The program was expanded after the Exxon *Valdez* spill to include the American Petroleum Institute and, to a lesser extent, the U.S. Coast Guard. This collaborative undertaking provides a balanced approach to improve mechanical, chemical, and *in-situ* burn technologies as well as the means for detecting and examining slicks. The MMS has recently acquired for use the defunct Oil and Hazardous Materials Simulated Environmental Test Tank facility (OHMSETT), which is being refurbished and reactivated for use by the program and for other entities, including the general public.

A network of working groups known as Operations Technology Assessment Committees (OTAC) expedites the exchange of technical information among MMS headquarters and regional offices. The OTACs review operational problems, discuss technology needs, and recommend improvements in the MMS regulatory program. MMS project scientists and engineers serve as staff adjuncts by participating at OTAC meetings in discussion of their specialties. The OTAC network, together with the TA&R program, is a primary way for MMS to comply with the OCSLA section 21(b) requirements to use the "best available and safest technologies (BAST) which the Secretary determines to be economically feasible."

The 1988 biennial publication, *Technology Assessment and Research Program for Offshore Minerals Operations,* MMS 88-0057 (OCS Study), currently in revision, is available without charge from Minerals Management Service, Technology Assessment and Research Branch, 381 Elden Street, MS 4800, Herndon, VA 22070-4817, telephone (703) 787-1559.

Safety Violations

During FY 1990, the U.S. Coast Guard conducted 132 investigations on 747 reports or allegations of violations of safety regulations. Coast Guard personnel conducted 2,781 inspections among the 3,811 offshore facilities in Federal waters. One report of violation was forwarded to MMS for administrative or judicial action in accordance with procedures outlined in 33 CFR 140.40. These Federal offshore inspections included 1,536 self-inspections of fixed platforms within the 8th, 11th, and 17th Districts conducted by owners/operators in accordance with 33 CFR 140.103. The 2,781 Coast Guard inspections resulted in the issuance of 1,692 corrective action requirements. There were 1,177 fewer reports or allegations of violations in FY 1990 than in FY 1989. In addition, the number of investigations increased from 30 in FY 1989 to 132 in FY 1990.

Diving Studies

The Coast Guard was not invited to and did not participate in any diving studies pursuant to section 21(e) of the OCSLA, as amended (43 U.S.C. 1347(e)), during FY 1990. The Department of Commerce is identified under section 21(e) as the lead agency to work with the Coast Guard and the National Institute of Occupational Safety in conducting such studies.

Other Federal Offshore Programs

The MMS performs numerous support functions related to offshore leasing and production operations. Those performed in FY 1990 are summarized below.

Bidding Systems

Only cash bonus bidding with fixed royalty rate bidding systems were used in two sales held in FY 1990.

The 16 2/3-percent royalty rate (1/6 of production value) is used for the shallow-water, low-cost areas, whereas the 12 1/2-percent royalty rate (1/8 of production value) is employed for the deeper water, high-cost areas. Ordinarily, royalty rate differences are based on water depth, except in Alaska where royalty rates are selected on a sale-specific basis. Table 11 shows the water depth limits that constitute the 1/8 royalty demarcations for all offshore regions.

No changes affecting bid adequacy procedures for fair market value were made in FY 1990.

Table 11. *Water Depth Limits for 1/8 Royalty Demarcation*

Region	Water Depth
Alaska OCS	variable
Atlantic OCS	200 meters
Gulf of Mexico OCS	400 meters
Pacific OCS	200 meters

Environmental Studies

In 1990, two events served to focus the year's activities and future plans:

- publication of the National Research Council (NRC) report, *The Adequacy of Environmental Information for Outer Continental Shelf Oil and Gas Decisions: Florida and California* (Report for the Presidential Task Force); and
- the President's subsequent announcement to postpone leasing in certain areas.

In FY 1990, the MMS spent approximately $20 million for environmental studies under the OCS Oil and Gas Leasing Program. The studies were performed under contracts awarded to private business (47 percent), to other Federal Agencies (31 percent), to research institutes, to colleges and universities (14 percent) and to State governments

(less than 1 percent). These percentages reflect only the initial transfer of funds. Fund transfers by the MMS to other Federal agencies (and prime contractors) may also be redistributed through contracts to private business and academic institutions.

Environmental Studies Program (ESP) funds are expended to support both national and regional information needs. In FY 1990, these funds were distributed as shown in Figure 16 (page 36).

The following sections provide descriptions of FY 1990 activities in the ESP for the following topics: physical oceanography; biological resources; ecological monitoring; protected species including birds and turtles; socioeconomic; and information management/program review.

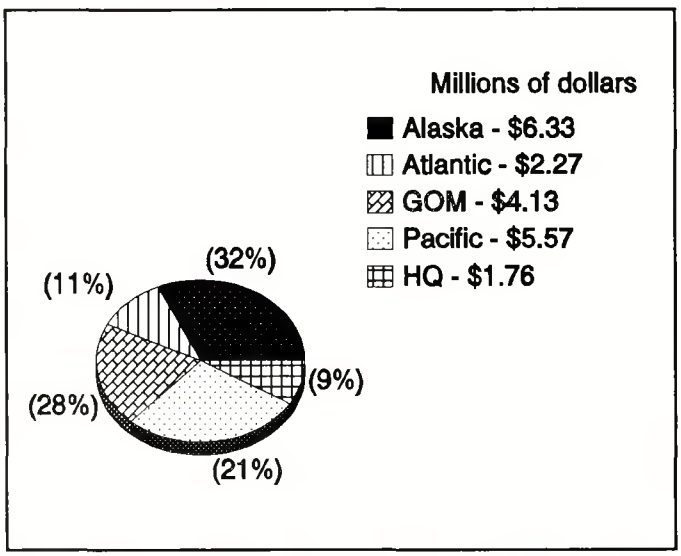

Figure 16. *OCS Environmental Studies Program Funds Expended by Region/Office, FY 1990*

Physical Oceanography

The NRC review of the MMS ESP physical oceanography program began in May 1986. The NRC report, *Assessment of the U.S. Outer Continental Shelf Environmental Studies Programs. I. Physical Oceanography,* published in 1990, recommends an overall increase in studies of physical oceanography and a shift in emphasis from modeling to observation. To determine how the Agency's physical oceanographic studies may best address the NRC findings and the President's announcement, MMS held a physical oceanography workshop in San Francisco, California, with participation by the chairman of the NRC panel, the MMS Scientific Committee, academic scientists, and MMS staff. The workshop also provided a forum for MMS staff to hear the concerns of recognized experts in physical oceanography on the priorities, design, and conduct of MMS research.

As a result of the NRC recommendations and the President's announcement, the Southern California Bight received high priority for physical oceanography studies. Two workshops were held in November 1990 to improve oil-spill risk assessment and to help develop a statement of work for physical oceanography field studies in the Southern California Bight. An agreement was also negotiated with the National Oceanic and Atmospheric Administration to deploy two data buoys outfitted with acoustic current profilers. These buoys will provide meteorological observations and current measurements in Southern California waters up to 450-meter (1,485-foot) depth.

The MMS completed a second phase of the oil-following drifter program in which the satellite-tracked drifters were deployed during oil spills to evaluate their performance.

The Atlantic Region initiated the Straits of Florida physical oceanography program, which will provide observational data and boundary conditions for an existing South Atlantic Circulation Model developed under earlier studies. A draft manuscript sum-

marizing the physical oceanographic processes on the U.S. Atlantic and southeastern Gulf of Mexico relevant to natural gas and oil activities was received for review. A panel of physical oceanographers, convened by the Region to review the status of information offshore North Carolina, designed a program to produce data needed to better predict potential impacts of proposed drilling in the region.

The Gulf of Mexico Region announced the proposed Louisiana-Texas physical oceanography studies. This package of three studies is expected to be the largest physical oceanography effort to be awarded by MMS. As part of the planning for these studies, the Region initiated an electronic bulletin board for posting data and cruise information. The format has proven so popular that other national and international agencies are considering adopting it for their research areas. Additional activities during 1990 included the collection of another year of wind data, which will support circulation modeling in the Gulf and deployment of two data buoys subsequent to the *Mega Borg* oil spill, which provided environmental data to support oil-spill trajectory analyses and circulation studies.

In Alaska, work continued on the development of an ice/ocean circulation model for the Arctic Ocean, Bering Sea, and the Gulf of Alaska. Work was completed on the compilation of shoreline and oceanographic data needed for a coastal and surf zone oil-spill transport model.

Biological Resources

The Washington, Oregon, and California OCS Fisheries Data Base, Phases I and II were completed. This study was designed to improve historical databases on fisheries for areas dealing with past, present, and future conflict-use issues off Washington, Oregon, and California, especially southern California. Phase III will be completed by 1992.

In the Alaskan Arctic, concerns have been raised that causeways create barriers for migrating and foraging fish and modify the temperature and salinity of adjacent waters. Studies completed for MMS in 1990 have shown that arctic cisco may be found many kilometers offshore as well as nearshore, and have been tracked through varying temperatures and salinities without noticeable impacts. This new information will be added to the existing database that provides the best information available for impact level assessments. In a Bering Sea study, an unexpected finding was the discovery of a reproducing king crab population near Port Moller. This information will be beneficial in addressing depleted stock issues.

Other accomplishments include the completion of descriptive literature and information summaries on important fish species in the Atlantic.

The final report for the study *A Comparison of Marine Productivity Among Outer Continental Shelf Planning Areas* was received this year. This report will be a key tool in preparing the Environmental Sensitivity section of the next 5-year EIS.

In the Gulf of Mexico, diver observations at two collapsed offshore platforms, left in place as artificial reefs, are providing data that indicate natural fish recruitment occurs at these structures as opposed to displacement of fish from other sites. A study of the

impacts of Gulf of Mexico OCS pipelines, navigation channels, and facilities on barrier islands, beaches, and associated wetlands was completed in 1990. Impacts from 164 OCS pipelines crossing Gulf coast barrier islands vary with location, construction type, and age; but are generally minimal. Eleven OCS navigation channels have been constructed causing local impacts from dredging and jetty construction. Outer Continental Shelf related facilities can cause local impacts caused by the filling of wetlands, but are generally inconsequential because of the small percentage of coastal area they occupy.

The Mississippi–Alabama Marine Ecosystem study, ongoing in 1990, continued to characterize the biology, chemistry, and physical oceanography of the continental shelf and to describe the unique offshore pinnacle trend area. The Mississippi–Alabama Pinnacle Trend Study was initiated during 1990 to locate these potentially sensitive topographic features and describe their biological communities. The Southwest Florida Nearshore Benthic Habitat Study continued to map and inventory seagrass beds in the Florida Bay and offshore areas.

Ecological Monitoring

The annual report for the third year of the California Monitoring Program (CAMP) was completed in August 1990. The CAMP study design has been tested only partially because Platform *Julius* was never installed and potential offshore natural gas and oil drilling impacts to soft-bottom habitats were not assessed. However, results provided by CAMP, to date, demonstrate that environmental impact studies that adequately accommodate natural variability can be conducted. Biological and physical parameters were found to be relatively homogeneous within the vicinity and site-specific sampling indicated that drilling-related impacts should be detectable. Also in the Pacific, monitoring continued at the Olympic National Park beaches to determine the fates and effects of bunker C fuel oil spilled from the barge *Nestucca.*

During FY 1990, the first draft interim report was submitted by the Smithsonian Tropical Research Institute (STRI) for the Panama Oil Spill Study. This report includes results from the beginning of the study (March 1987) through September 1989. Study results were presented by five of the STRI scientists at the International Conference on Lessons Learned from Major Oil Spills. In addition, several manuscripts describing preliminary results of the Panama Oil-Spill Study were submitted to peer-reviewed scientific journals for publication. The restructured contract agreement with STRI resulted in project management during FY 1990 that was significantly more responsive to MMS recommendations and comments.

The second year of field sampling was successfully completed during FY 1990 for the study, "Long-Term Monitoring at the East and West Flower Garden Banks." The recent coral bleaching phenomena occurring in numerous Caribbean reefs were also seen on the Flower Gardens.

Protected Species, Birds, and Turtles

Activities in FY 1990 were characterized by several new initiatives and shifts in concerns in addition to continued efforts to resolve long-standing issues in the Atlantic and Alaska Regions.

In respect to continuing issues, the highly endangered right whale was a target of studies to define habitat use in the North Atlantic and migration routes and possible breeding areas in the South Atlantic. The North Atlantic study, a multidisciplinary study co-funded with the National Science Foundation, was highlighted at a special session of the annual American Geophysical Union meeting in New Orleans.

In Alaska, the bowhead whale continues to be a center of controversy with most concerns expressed by the North Slope Borough, particularly with respect to potential disturbance effects. Responses of spring migrating whales to industry noise (simulated recorded playbacks) was studied, and the annual survey of all migrations was completed using MMS scientists as observers. Relative behavior of bowhead whales exposed to very little human disturbances (David Strait stock) was compared to whales in the Beaufort Sea. Results of these studies will be available in 1991.

Potential disturbance of birds and seals by offshore operations is also a long-standing concern, and multi-year studies of aircraft disturbance effects on geese and other waterfowl at Izembek Lagoon and Teshekpuk Lake neared completion. An interagency agreement with the U.S. Fish and Wildlife Service was established to continue monitoring selected seabird colonies in the Bering Sea. Oil spills (non-offshore) have been implicated as a major factor in local population declines of Central California seabird colonies, and analysis of new census data during 1991–92 may prove significant.

Efforts to condense and compile years of study results sponsored by MMS, industry, and other groups were particularly noteworthy in FY 1990. An annotated bibliography of the right whale and a synthesis on the effects of noise on seals were completed. A review of the effects of noise on marine mammals is in draft form, as are proceedings of a protected species workshop in the Gulf of Mexico. Two flagship efforts to produce peer-reviewed, high quality published books continued forward. The *Effects of Oil on Marine Mammals* was released by Academic Press, and the first draft of a bowhead whale book neared completion.

New issues were also addressed in FY 1990. A study on the association of sea turtles with Gulf of Mexico offshore structures, performed by the National Marine Fisheries Service for MMS, was begun. Surveys of deep-water marine mammal communities are planned in FY 1991. Major aerial surveys for marine mammals and seabirds along the Washington–Oregon Coast continued, and MMS co-funded smaller studies on marbled murrelets in California and fur seals in Alaska. Both species are declining and may be of particular concern in the future. The general health of marine mammal populations was elevated to a major concern by various die-offs and population declines over large geographical areas. The MMS's ongoing study to archive marine mammal tissue in Alaska gained attention and may provide a model for a national tissue archive with multi-agency funding.

Social Sciences

The National Research Council (NRC) report for the Presidential Task Force was critical of socioeconomic studies in California and Florida. In FY 1990, steps were initiated to develop a more responsive national program. MMS headquarters conducted informal discussions with NRC team members and planned a study to evaluate MMS socioeconomic research needs on the national level, and the Pacific Region conducted a workshop to address southern California socioeconomic research needs.

Accomplishments in the Regions included completion of scheduled studies and increased planning efforts to respond to NRC concerns. In response to a congressional mandate and the NRC review, the Atlantic Region worked with the State of North Carolina to establish a review panel to assess data needs. The Region developed a new economic multiplier model and is developing a model of possible effects of Federal offshore leasing and development on recreation and tourism in Florida.

The Gulf of Mexico Region received draft reports and briefings on a study of the economic impacts of declining offshore activities and a University Initiative study of the effects of this decline on families, social services, communities, governmental services, and corporations. The Region also began to procure a study of the sociocultural effects of the boom, bust, and resurgent nature of the oil industry on communities, families, and individuals.

The Pacific Region conducted a workshop in response to the NRC review to assess MMS's socioeconomic data needs for southern California. The Region completed an archaeological baseline of historic shipwrecks for California, Oregon, and Washington and continued studies to determine the potential socioeconomic impacts of offshore development on Washington–Oregon Indian tribes and to model the potential effects of offshore development on tourism and recreation.

The Alaska Region developed research relationships with the State of Alaska, the North Slope Borough, and the Soviet Union. The Region refined the monitoring of socioeconomic effects of offshore development and, in the process, completed significant research on the socioeconomic effects of the Exxon *Valdez* oil spill. Other major accomplishments include completion of the Northern Institutional Profile Analysis (an amassing of social-change data for the North Slope), the Point Lay Case Study (a detailed insight into the dynamics of social change on the North Slope), and the Bristol Bay Subsistence Study (an analysis of subsistence data gathered by the State). Through these studies and others, the Region amassed important databases on population and employment, institutional and social change, and subsistence for large areas of Alaska.

Information Management/Program Review

Efforts continue to improve the management of the large amount of documents produced under the ESP. Contractors edited a LIBRARY database initiated by headquarters staff and produced a 1973–1987 bibliography of reports. Technical abstracts that summarize in 3–5 pages the objectives, results, and conclusions have now been prepared for over 500 ESP projects. Printed versions of these abstracts are being issued in a

continuing series of technical summaries; Volume 1 for the Atlantic Region was released in FY 1990.

The NRC review of the ESP continued. The review committee established for this task undertook additional duties to produce a report for the Presidential Task Force and a special review of the Georges Bank in the North Atlantic. The first of four reports specified under the initial contract, Physical Oceanography, was completed. Internal review and planning were accomplished at three workshops held in conjunction with Scientific Committee meetings. Draft action plans were completed for Physical Oceanography, Protected Species, and Socioeconomics.

Lease Terms Amended During FY 1990

The two sales held during FY 1990 contained no significant changes in lease terms or conditions from sales held in previous years.

Agreements with Federal Agencies, States, and Local Governments

- An innovative Memorandum of Understanding (MOU) was signed by the MMS, North Carolina, and Mobil Oil Corporation on July 12, 1989. Under the MOU, the MMS agreed to prepare an Environmental Report (ER) on proposed exploratory drilling offshore North Carolina. On November 1, 1989, the MMS submitted the draft ER to North Carolina for its review and comment. The Preliminary Final Environmental Report (PFER) was submitted to the State on June 1, 1990. The State concluded its review and commented on the PFER 60 days later. The Final Environmental Report was submitted to the State on August 30, 1990.

- On August 18, 1990, the Oil Pollution Act was signed by Congress. The Act mandates the establishment of an Environmental Sciences Review Panel to assess the adequacy of available information enabling the Secretary of the Interior to carry out responsibilities under the Outer Continental Shelf Lands Act. Governor Martin and Secretary Lujan have named the five panel members (three were jointly nominated). The Panel will meet in 1991.

- The Pacific Northwest Task Force met several times to discuss topics related to Sale 132, Washington-Oregon. The topics included environmental studies, area deferrals, and EIS timing.

- The findings of the joint industry-agency Egg Larval Committee (ELC), of which the Pacific OCS Region was a member, were announced in 1989. The ELC concluded its work at the end of 1988 after 4 years. The ELC produced studies on the effects of airgun exposure on the eggs and larvae of the northern anchovy and dungeness crab. Results indicate that there are no demonstrated effects on dungeness crab eggs/larvae under the exposure conditions used in the experiments. Northern anchovy eggs and larvae show limited effects when in proximity (within 3 meters) of the sound source.

Joint Federal-State Marine Minerals Projects

Hawaii: In August 1990, the MMS and the State of Hawaii completed the final EIS for the possible future development of cobalt-rich manganese crusts offshore Hawaii and Johnston Island. A *Federal Register* notice was published on October 19, 1990, and a joint Federal/State news release was issued on November 15, 1990, announcing the availability of the final EIS.

North Carolina: MMS and the State of North Carolina recently agreed to an extension of task force activities through December 1991. At a meeting held on September 14, 1990, the State expressed interest in reactivating the joint task force with a broadened scope; namely, offshore sand resources for beach nourishment and construction, and potential heavy mineral deposits. In December, Charles Gardner (State Geologist) was designated as the new State co-chair.

A separate but related MMS initiative to secure public and industry access to an extensive offshore phosphorite database held by East Carolina University began in May 1990. An archiving/atlas project will produce an American Association of Petroleum Geologists special publication in spring 1991. Should industry interest increase as a result of the availability of this information, it is likely the task force would sponsor a phosphate workshop to assess and discuss future initiatives and issues of mutual concern.

Georgia: In June 1990, additional research was conducted for the Georgia task force by the Continental Shelf Division of the Marine Minerals Technology Center (MMTC). The fieldwork consisted of a seismic survey and a bulk sampling program which completed the scope of work planned in the September 1989 cooperative agreement. A 2-ton phosphate bulk sample was collected in the area of the Savannah Light Tower for chemical analysis by the Bureau of Mines Salt Lake City Research Center. The sample was collected using the MMTC Remote Placer Drill modified for the project as a mini-borehole mining device. Environmental monitoring and data gathering, including water samples and underwater video recordings, were also a part of the program. This information will be useful in evaluating what appears to be an environmentally attractive technology for the future recovery of phosphate.

A September 1990 task force meeting was held to review the results of completed fieldwork and to discuss a draft proposal by the Georgia Department of Natural Resources. The proposal, reflecting earlier recommendations of the task force, is a scope of work to gather geologic and hydrologic data by coring several holes through the Miocene-age strata (host rocks for phosphate) and to make observations on the possible effects of seafloor drilling on marine biota.

In December 1990, the State indicated that any future fieldwork should focus on environmental studies and that for the near-term, a spring workshop should be planned to review and discuss accomplishments to date. A task force recommendation could then be formulated on appropriate physical and biological environmental studies to pursue over the longer term.

The joint Federal/Gulf Coast States task force continued its research with a focus on geologic, engineering, economic and environmental analyses of Ship Shoal, offshore Louisiana, as a sand source for beach nourishment and restoration of the Isles Dernieres

and nearby Bayou Lafourche shoreline. It is expected that the draft report will be distributed to task force members for review in early 1991.

Alaska: The Federal/State of Alaska Coordination Team continued its prelease activities for a proposed Norton Sound Mineral Lease Sale. Its focus is an extension of gold dredging under a State lease into Federal waters offshore Nome. In September 1989, a decision was made to prepare a second draft EIS using new information on water quality and trace metals in human hair and to include four stipulations as part of the Proposal. An Environmental Baseline and Monitoring Workshop was also held to design a program that would provide a benchmark against which environmental changes can be monitored. A public hearing on the draft EIS was held in Nome on July 18, 1990 and the comment period on the Proposed Leasing Notice closed on August 14, 1990. The Coordination Team met on September 28, 1990 to discuss the preliminary final EIS, the draft Final Leasing Notice (FLN), and the concept of a postlease review team. The final EIS is scheduled for release in March 1991 followed by the FLN a month later. Because of new legislation requiring a prelease coastal zone consistency review by the State, the sale date has tentatively been rescheduled for mid-1991.

Another noteworthy event involved a decision by WestGold, the company dredging for gold in State water, to shut down its operations and to sell its dredge, the *BIMA,* following the conclusion of the 1990 open water season. Declining gold prices and high operating costs were cited as the major reasons. Despite the termination of WestGold's operation, the MMS has received indications of continued industry interest in the upcoming sale in adjoining Federal waters.

Oregon: On March 1, 1990, the task force released a final report entitled "Preliminary Feasibility Study: Oregon Placer Minerals." The components of this study include a summary of placer mineral resource information, an economic evaluation, an environmental review, a market definition, an economic and strategic analysis, and recommendations for future study.

On the basis of the report's findings, the task force recommended continuation of its efforts and proposed limited resource assessment and biological studies off Cape Blanco and Gold Beach, Oregon. The goal of the proposed fieldwork was to collect much needed geological and geophysical data and to conduct studies on the living resources. A scientific research cruise began on September 12, 1990, and ended on October 3, 1990. Despite weather and equipment problems, all planned environmental and geophysical studies were successfully completed. However, the acquisition of geological data at depth was largely unsuccessful and will require future coring efforts. Results of the research cruise are expected to be available in spring 1991.

New England States: A proposal for an aggregate demand study for the six New England States was received by MMS on June 1, 1990, from the New England Governors' Conference (NEGC), a nonprofit, nonpartisan tax exempt corporation comprised of the New England Governors who serve as the Board of Directors. The project is timely given the enormous and increasing needs for construction aggregate coupled with decreasing availability of traditional supplies that are forecast for this region. The

project is being conducted through a cooperative agreement with MMS approved in late August 1990, with a September 1, 1990, start date.

The objective of the study is to investigate current and future aggregate demands within the New England States to determine if projected needs outpace traditional supplies. Although the current focus is on demand, the study will be useful to MMS and the States in determining whether there is merit to a future cooperative evaluation of onshore supplies as well as offshore deposits and their ability to meet the demand.

Continental Margins Program: During FY 1990, the MMS continued its relationship with the coastal States' Geological Surveys through the Continental Margins Program. This program, which is coordinated for MMS by the Texas Bureau of Economic Geology, offers an opportunity for the States to conduct geologic studies that are relevant to their needs as well as to the Department of the Interior's offshore leasing program. The two basic areas in which the State Geological Surveys are conducting studies are (1) strategic/critical minerals and/or (2) geologic framework related to petroleum.

During the year, the proceedings for the second symposium on *Studies Related to Continental Margins—A Summary of Year-Three and Year-Four Activities* was published. The symposium was held in Austin, Texas in May 1989.

Consultations with Federal Agencies, State Agencies, and Private Groups

The MMS consulted during FY 1990 with other Federal and State agencies, the natural gas and oil industry, environmental organizations, educational and scientific organizations, special interest groups, and private citizens. Consultations at national and regional levels enabled other agencies, the public, and industry to offer varied comments on the offshore leasing program, the planning of individual sales, and other phases of natural gas and oil and nonenergy minerals development in Federal offshore waters. Other formal MMS meetings included those of the OCS Advisory Board's components: the OCS Policy Committee, the six Regional Technical Working Groups (RTWG's), and the OCS Scientific Committee. Informal meetings were also held among MMS officials, other Federal agencies, State bodies, and concerned citizen groups.

The President's OCS Leasing and Development Task Force: On March 21, 1989, the White House established the Outer Continental Shelf Leasing and Development Task Force that the President identified in his FY 1990 budget proposal. The task force was charged with reviewing and resolving environmental concerns associated with Northern California Sale 91, Southern California Sale 95, and Sale 116—Part II, offshore southwestern Florida. Members included the Secretary of the Interior (who served as chairman), the Secretary of Energy, the Director of the Office of Management and Budget, the Administrator of the Environmental Protection Agency, and the Administrator of NOAA, or their designees. The task force was assisted in evaluating the environmental and resource information available for the study areas by the National Academy of Sciences. Between May and July 1989, the task force met with the California and

Florida congressional delegations and held public workshops in California and Florida coastal communities.

The task force staff worked with information from a variety of sources including information shared at the workshops and briefings and also with comments received in response to a staff draft of options and concerns identified through the task force's public participation process. A summary of discussions held at task force workshops was published in the *Federal Register* for public comment in August 1989. The 70 comments received were used to develop the report along with information and analytical documents relevant to the study areas supplied by the MMS. On November 3, 1989, the National Academy of Sciences and the National Research Council provided the task force with reports on the adequacy of environmental information and hydrocarbon resource estimates for the areas offshore California and Florida.

The task force also held a series of meetings in Washington, D.C., to hear information from a variety of Federal agencies, in addition to the public meetings mentioned earlier. The President announced his decision on June 26, 1990.

President Bush directed the Department of the Interior to take a number of steps to insure that offshore natural gas and oil can continue to be produced in an environmentally responsible manner. To summarize the President's decisions:

- All sales pending off California and southwest Florida are cancelled. Future leasing will not occur before the year 2000 and the completion of studies recommended by the NAS.

- Eighty-seven tracts in the Pacific Ocean close to producing offshore areas may be considered for leasing, but only after further studies (recommended by the National Academy of Sciences) and not before January 1996. There will be no consideration of additional leasing offshore California and in the area off the southern tip of Florida before the year 2000. This means 99 percent of the Federal area off California will be off-limits to leasing consideration for the remainder of this century.

- MMS will begin a process (under OCSLA) that may lead to cancellation and buy-back of the existing leases off southwest Florida and will initiate discussions with the State of Florida regarding its participation in the buy-back.

- The National Oceanic and Atmospheric Administration recommendation for the Monterey Bay Sanctuary has been approved; natural gas and oil leasing is prohibited within the sanctuary.

- Restructuring of the Federal leasing program already is underway as directed by the President. The new 5-year Comprehensive Federal Offshore Natural Gas and Oil Resource Management Program for 1992-97 will be shaped to reflect all the principles set forward by the President.

- Air quality concerns and increased oil-spill response will be addressed aggressively.

In keeping with the principles cited by the President, Secretary of the Interior Manual Lujan took these additional steps:

- Sale 96 in the Georges Bank area off the New England Coast has been canceled. Environmental studies in that area will continue, but no lease offering will be conducted before the year 2000.

- Sale 132 off the coast of Washington and Oregon has been canceled. The body of studies recommended by the Pacific Northwest Area OCS State and Federal Task Force will be completed over the next 5 to 7 years—before any lease sale is considered off that coast.

OCS Advisory Board: Established in 1975, the OCS Advisory Board counsels and informs the Secretary, the Director of the MMS, and other officers of the Department of the Interior on the performance of discretionary functions derived from the OCSLA, including all aspects of leasing, exploration, development, and protection of the natural and mineral resources in Federal offshore waters. The board includes the members of the OCS Policy Committee, the six RTWG's, and the OCS Scientific Committee. The FY 1990 work of the committees is summarized in the next three subsections.

OCS Policy Committee: The OCS Policy Committee consists of one policy level member from each of the 23 coastal States and from Pennsylvania. Each is nominated by the respective State Governor for appointment by the Secretary, who also appoints up to 14 members from the public and private sectors to balance the background, constituency, points of view, and functions of the committee. In addition, the Secretary may appoint two ex-officio, at-large non-voting Federal members. The Department of the Interior Assistant Secretaries for Land and Minerals Management, for Fish and Wildlife, and for the National Park Service, or their representatives, plus the Director of the MMS, are also ex-officio non-voting participants in the committee's activities. The Policy Committee provides advice to the Secretary on the discretionary aspects of the OCS Lands Act, as amended, and focuses on issues of national concern.

During FY 1990, the committee met once to develop a report and provide recommendations regarding the development of the 5-year leasing program. The recommendations are being implemented by MMS. The committee also appointed a subcommittee to review the analyses of the Exxon *Valdez* oil spill and provide recommendations relevant to the Federal offshore natural gas and oil program.

RTWG's: The six RTWG's represent the North Atlantic, Mid-Atlantic, South Atlantic, Gulf of Mexico, Pacific, and Alaska OCS regions. They advise the Director of the MMS on technical matters of regional concern regarding Federal offshore prelease and postlease activities.

The Governors of the coastal States (except Hawaii and Pennsylvania) each nominate one member for appointment to the appropriate RTWG by the Secretary. In addition, the Secretary appoints other public and private sector representatives to the six committees. The U.S. Coast Guard, EPA, Department of Defense, NOAA, and FWS are nonvoting members. The Secretary also may appoint two ex-officio nonvoting Federal members to each RTWG Committee.

Each RTWG committee is co-chaired by a State representative and the appropriate Regional Director of the MMS. The Regional Director's staff provides support for the respective committees. The RTWG's maintain a balanced membership to assure that the Director of the MMS gets timely technical advice that is representative of significant, differing viewpoints within the States and regions. Total membership is approximately 120.

The RTWG committees regularly focus on technical items involving offshore prelease and postlease activities of regional interest. Transcripts/minutes of each of the six RTWG meetings held in FY 1990, the recommendations made, and copies of all studies and reports issued or approved in conjunction with the activities of the working group are available for public inspection at the appropriate OCS regional office. (See following section, "Regional Consultations and Related Activities," page 49, for more detailed descriptions of FY 1990 activities.)

OCS Scientific Committee: The OCS Scientific Committee advises the Director of the MMS on the feasibility, appropriateness, and scientific value of the Environmental Studies Program. The committee reviews the relevance of data produced by the program and recommends changes in its scope, direction, and emphasis. The Scientific Committee has 15 members who are appointed for 2-year terms by the Secretary. These appointments are based on each appointee's scientific competence and relevant technical skills. The Director of the MMS designates an executive officer and provides administrative support. Subdivided into topically oriented subcommittees and task forces, each of the committee's subgroups meets to discuss issues important to the program. During the past year, workshops were held on protected species, physical oceanography, and socioeconomics. Three plenary sessions were held in FY 1990.

Modeling Review Board: The initial meeting of the interim Modeling Review Board (MRB) was held in FY 1989. The first meeting addressed a review of statements of work for circulation modeling in the Gulf of Mexico and off the Pacific coast. A full board will be appointed in FY 1991. The MRB will provide expertise used to advise the agency on specific technical aspects of study efforts and to improve long-range plans for ocean circulation modeling considering funding constraints. The full MRB will consist of up to four members providing services over a 2-year term.

Endangered Species and Marine Mammals: During FY 1990, the MMS initiated or reinitiated nine formal consultations with the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (FWS) under Section 7 of the Endangered Species Act (ESA). In addition to a proposed Federal offshore mining program lease sale in Norton Sound, Alaska, these consultations addressed proposed natural gas and oil lease sales in the Beaufort and Chukchi Seas offshore Alaska and sales in the Western, Central, and Eastern Gulf of Mexico. The MMS also requested reviews of NMFS and FWS biological opinions for the proposed Beaufort Sea sale in light of revised resource estimates for the sale area.

In November 1986, the MMS began consultations with the NMFS on platform and structure removals in the Gulf of Mexico that require use of explosives and that could kill or injure endangered marine turtles at or near a removal site. By agreement, such consultations are expedited to produce biological opinions within 30 days rather than the maximum 135 days normally allowed by Federal regulations. The number of individual expedited consultations declined markedly in FY 1989 and remained low in FY 1990 because most proposed removals employing explosives fell within the purview of a July 1988 generic biological opinion. This opinion specified conditions of removal for categorical kinds, sizes, configurations, and placement of explosives, as well as timing requirements of multiple or sequential explosions, if any are proposed.

Of the 108 structure-removal proposals submitted to MMS in FY 1990, only 5 received expedited formal consultation; the remaining 103 were covered by the NMFS' July 1988 generic biological opinion or were accomplished by nonexplosive means. A single geophysical survey proposal employing explosives also received expedited consultation.

During FY 1990, the MMS formally advised the NMFS on numerous issues and draft documents dealing with the protection and conservation of marine species, some of which are protected by the ESA as well as the Marine Mammal Protection Act. These documents involved draft national recovery planning guidelines; draft national recovery plans for humpback whales and for northern right whales; the NMFS Scientific Research and Public Display Permitting Program; the incidental take of endangered and other marine species in general, in the Beaufort and Chukchi Seas, and in the Gulf of Mexico; draft conservation plans for North Pacific fur seals; and emergency interim regulations listing steller sea lions as threatened under the ESA. The MMS also advised the National Academy of Science on its report *Decline of Sea Turtles: Causes and Prevention;* the National Oceanic and Atmospheric Administration on its proposed Norfolk Canyon, Monterey Bay, and Stellwagen Bank National Marine Sanctuaries; and the NMFS on several regional and interregional fishery management plans.

The MMS management and staff also met both formally and informally to discuss offshore and endangered species/marine mammal topics with representatives of other Federal units, State and local governments, industry, and special interest groups. Noteworthy examples include meetings with the following:

- Alaska State and local government officials and representatives of the FWS, industry, and conservation groups—about toxic materials associated with the proposed Norton Sound Mining Program lease sale.

- MMS regional and headquarters personnel and California or headquarters officials of the NMFS, FWS, U.S. Coast Guard, and EPA—in workshops on the MMS Oil Spill Risk Analysis Program, its premises and practices, and related interpretational procedures and limitations.

- NMFS and academic marine mammal biologists and public display industry officials—on factors influencing scientific research and public display permitting practices and requirements.

Arctic Research and Policy Act: The MMS Staff from the Alaska OCS Region and headquarters, along with representatives from other Federal agencies, participated in updating and developing new documents summarizing accomplishments and planning future coordinated initiatives in the Arctic.

National Ocean Pollution Policy Board: The MMS Headquarters participated with other Federal agencies in the review of FY 1991 Federal pollution programs and the United Nations report on the state of the world's oceans. The MMS headquarters also participated in National Ocean Pollution Board subgroups dealing with habitat loss and ecosystem monitoring.

Coastal Zone Management: In FY 1990, the MMS continued to participate in the reviews conducted by the Department of Commerce (DOC) of federally approved State coastal management programs and their proposed amendments. These MMS reviews are designed to provide the DOC with information to assure that national interests in the exploration and development of hydrocarbons and nonenergy minerals on the Federal offshore are properly considered by, and balanced with, local interests in the State coastal management programs.

Regional Consultations and Related Activities

Sponsorship of regional Information Transfer Meetings (ITM) enables the MMS to disseminate the results of the studies it funds through the Environmental Studies Program. A Gulf of Mexico ITM was held in New Orleans, Louisiana, December 5-7, 1989; an Alaska OCS Region ITM was held January 30-February 1, 1990, in Anchorage, Alaska. In May 1990, the Pacific OCS Region held an ITM in Santa Barbara, California.

The ITM's purpose is to provide a forum to report on current work in progress, to present the results of studies completed by MMS contractors, and to serve as a forum for the exchange of technical information. An ITM may also include presentations by guest speakers from industry, academia, and other Federal and State agencies. The proceedings of each meeting are available from the respective MMS regional office.

The regional ITM requirement stems from a December 1982 resolution of the OCS Advisory Board's Policy Committee that recommended that the MMS conduct at least one technical ITM each year in each Federal offshore region. Originally, these meetings were included in RTWG schedules; however, the resolution was modified so that ITM's are now conducted on a basis of need. The Scientific Committee of the OCS Advisory Board also endorsed the ITM concept.

Alaska

During FY 1990 the Alaska Region consulted with the State and local governments on oil and gas leasing proposals in the Beaufort Sea (Sale 124), the Chukchi Sea (Sale 126), the Navarin Basin (Sale 107), and on a marine minerals sale in Norton Sound. Public hearings on the draft EIS's for these sales were held both in and outside Anchorage. For the Norton Sound sale, a special coordinating team consisting of Federal, State, and local representatives met to discuss the proposal. Ongoing consultation with the State continued on boundary issues. An Information Transfer meeting was held to present and discuss the results of environmental studies funded by MMS. These meetings are attended by the scientific community and academia, including State and local interests.

Atlantic

In December 1989, eight public hearings were conducted in four North Carolina locations to receive comments on the draft Environmental Report on Mobil's Manteo Prospect draft exploration plan. In January 1990, the Atlantic Region met with representatives of the Governor of North Carolina to discuss a process for preparing a Preliminary Final Environmental Report (PFER). During February and March 1990, several staff-to-staff technical meetings were held in North Carolina where MMS gathered data from state employees for inclusion in the PFER. Throughout April and May 1990, the Atlantic Region and North Carolina representatives worked closely on the PFER and the State's "alternative wording" was added to the document, where appropriate, prior to publication on June 1, 1990.

Gulf of Mexico

Two RTWG meetings were held in Louisiana and one meeting was held in Texas during FY 1990. At the December 1989 meeting in New Orleans, Louisiana, topics included Gulf of Mexico current activities, MMS inspection program, and the Amoco Cadiz spill. Topics for the April 1990 meeting in Jefferson, Louisiana, included a review of the draft regional studies plan for FY 1992, a presentation on the transportation of oil in the Gulf of Mexico, and election of a new co-chairman. At the third meeting in July 1990 in Corpus Christi, Texas, the agenda included a presentation on site clearance, an update on oil spill equipment, and a video presentation of "Anchors at the Flower Garden Banks." The 5-year Program and the President's decision concerning natural gas and oil development on the OCS was also presented.

The final EIS for Sales 123, 125, 131, 135, and 137 was distributed in September 1990. Sales are scheduled for in March, August, and November 1991.

Pacific

The Pacific RTWG met in March 1990. Topics included:

- The President's OCS Oil and Gas Leasing and Development Task Force findings and report to the President;
- Offshore air quality issues;
- The "Hard Bottom" Committee status as a subcommittee of the RTWG; and
- Pacific Northwest Task Force status report and Washington/Oregon studies needs.

The "Hard Bottom Committee" (Effects on Hard Substrate Communities from Exploration Activities) was formed in December 1989 and became a subcommittee of the Pacific RTWG the following March. The subcommittee was formed to work toward a consensus on how to mitigate impacts from exploratory operations in the vicinity of deepwater reef communities and to develop a clear process to enable the development and review of the mitigation for exploration plans. The subcommittee meetings are led by a professional facilitator. Technical personnel from MMS, Fish and Wildlife Service, Environmental Protection Agency, National Marine Fisheries Service, State Lands Commission, California Office of Environmental Affairs, California Department of Fish and Game, California Coastal Committee, County of Santa Barbara (also representing San Luis Obispo and Ventura Counties), Joint Oil/Fisheries Liaison Office, and oil and fishing industries were present. The subcommittee is scheduled to make recommendations to the RTWG in the Spring of 1991.

The Pacific Region holds periodic meetings and workshops with the three counties immediately affected by existing leases: Santa Barbara, Ventura, and San Luis Obispo. The purpose of these meetings is to discuss current projects and controversial issues.

The MMS and the State of Oregon have met and agreed to enter a joint reconnaissance project designed to research, identify, and resolve baseline point issues along the entire Oregon coastline.

A Pacific ITM was held in Santa Barbara in May 1990. The theme of the meeting was "Offshore Oil and Gas in Today's Society." The agenda included presentations from Federal, State, and local agencies and environmental groups.

OCS Information Program

The OCS Information Program (OCSIP) was established in 1978 as mandated in section 26 of the OCSLAA, which requires making available summary information on Federal offshore natural gas and oil activities to State and local planning officials. The program is maintained in the Office of the Deputy Associate Director for Offshore Operations, Herndon, Virginia. All of OCSIP's reports can be obtained from the Technical Publications Unit, Document Distribution Center, 381 Elden Street, Herndon, Virginia, 22070-4817.

The *OCS Regional Update* reports provide State, regional, and local planners with current information to use in anticipating and planning for onshore impacts of offshore natural gas and oil activities. Industry representatives, private citizens, and Federal officials also use these reports extensively. The reports summarize resources and reserve estimates; the magnitude and timing of exploration, development, and production activities; pipeline installations and transportation strategies; and the nature and location of onshore facilities. Relevant information is also given on Federal, State, and local studies and issues. The summary reports synthesize information gained during field interviews with Federal, State, and local government representatives and with the private sector. That information, in turn, is coupled with analyses of pertinent Government and industry studies and publications.

In addition to the regional updates, the OCSIP publishes several other Federal offshore reference reports: an *OCS Directory of Federal and State Agencies* involved in the Federal Offshore Oil and Gas Leasing Program; a map plate series depicting regional offshore natural gas and oil activities and coastal facilities related to these activities; and the *Federal Offshore Statistics: Leasing, Exploration, Production & Revenues* for each calendar year.

Scientific and Technical Publications Program

The offshore scientific and technical publications program was established in 1984 with the goal of creating a formal system for producing, editing, and disseminating the technical reports and investigations of MMS's offshore natural gas and oil program. In FY 1990, the Technical Publications Unit processed over 100 technical reports and professional presentations and established the Author Information Center. Graphic design standards developed by the program for Federal offshore technical publications cover all printed materials MMS-wide. The MMS won a prestigious Presidential Design Achievement Award from the National Endowment for the Arts for these graphic design formats. The Technical Publications Unit issues quarterly and annual catalogs of Federal offshore scientific and technical publications that are distributed to the public and to libraries throughout the country.

The Five-Year Comprehensive Federal Offshore Natural Gas and Oil Resource Management Program for 1992–97

The current 5-year OCS Oil and Gas Leasing Program was approved on July 2, 1987, and expires on July 1, 1992. The initiation of development of a new 5-year Federal offshore program (1992–97) was announced in a *Federal Register* notice on July 14, 1989. The notice requested general comments on the size, timing, and location of leasing activity. It also asked the coastal State Governors to identify and provide summaries of their State's relevant laws, goals, or policies and coastal zone management issues. Industry was asked to identify and rank offshore areas for potential natural gas and oil development. All affected parties were asked for their comments and suggestions for the new program.

The information received from the States, industry, and other commenters, along with the results of MMS's environmental studies, other available data, and the President's June 26, 1990, Federal offshore announcements will be used to develop a Draft Proposed Program (DPP).

Information obtained in the review will be used to develop a second proposal, the Proposed Program and an EIS. The Governors, local governments, Federal agencies, and the public will have 90 days to comment on the Proposed Program. Additional steps in the process include issuance of a Proposed Final Program, a 60-day Congressional and Presidential notification period, and approval of a Final Program.

Alaska Federal–State Boundary Project

The Alaska Federal-State Boundary Project consists of representatives from the MMS, the National Ocean Service, and the State of Alaska. In June and July 1990, Global Positioning System (GPS) stations and tidal benchmarks were established along the Beaufort Sea coast from the Colville River delta to Point Tangent. During August 1990, the Port Moller tide station was deactivated and all photogrammetric panels were removed from the south shore of Bristol Bay, bringing to a close the 6-year boundary survey effort in the North Aleutian Basin.

Federal Offshore Natural Gas and Oil Production Verification Program

The MMS has developed a production verification program to assure that volumes of natural gas and oil are reported accurately for royalty purposes. The Gulf of Mexico OCS Region began the nationwide program by assigning additional responsibilities to an existing organization unit.

The objectives of the verification program are to

- perform annual inspection of all (currently 392) onshore and offshore custody transfer liquid measurement locations for site security, verification of sales volumes, and compliance with regulations;
- perform onsite production verification and inspections as needed to respond to discrepancies noted in the records being reviewed;
- verify crude oil production by analyzing run tickets, meter proving reports, and system sales allocation reports on a continuous basis to detect underreported crude oil production; and
- conduct a pilot gas production verification project involving 48 high volume meters in the Gulf of Mexico OCS Region to determine whether a complete gas verification program is also needed.

Liquid Verification System (LVS): The MMS's Regional Office oil verification program, known as the Liquid Verification System (LVS), began in May 1989. After the system design was modified to accommodate the various formats used by industry for the data and calculations, the system now seems to be operating satisfactorily. Volume discrepancies detected and verified are now forwarded to MMS's Royalty Management Program each month.

Gas Verification System (GVS): The GVS is presently a pilot study to determine whether a system similar to LVS should be implemented for gas. The study involved 48 gas measurement locations (106 gas meters) for a 6-month period, October 1988 through March 1989. Volume comparisons will be made annually using gas volume statements. Gas volume calculations will be checked through a commercial computer software package. Operators were asked to submit the required data in April 1989, and all the information has been received.

In preparation for the start-up of GVS, the Pacific OCS Region is reviewing production measurement systems.

Receipts, Obligations, and Expenditures — FY 1990

Offshore Program Receipt	**Offshore Receipts**	
	Bonuses and Rents (Account 141820)[1]	$ 712,037,412
	Royalties (Account 142020)	2,292,048,222
	Interest on Escrow Release (Account 141493)	2,032,703
	Total Receipts	**$3,006,118,337**
	Escrow (Accounts 14X6704 & 14X6707)	
	Bonuses	$ -0-
	Rents	43,930
	Interest	79,106,019
	Royalties	-0-
	Total 6704 & 6707 Escrow	79,149,949
	Total Receipts & Escrow	**$3,085,268,286**
Offshore Program Obligations (estimated)	Salaries and Benefits	$ 52,615,052
	Travel and Per Diem	1,880,394
	Contractual Service	31,697,622
	Other	3,780,573
	Total Program Obligations	**$ 89,973,641**
Offshore Program Expenditures: Escrow Accounts	**Payment of OCS Section 8(g) & Section 7 (partial distribution) During FY 1990**	
	Federal share	$ -0-
	States' share	49,023,000
	Total Section 8(G) & Partial Section 7 Payments	**$ 49,023,000**
	Beaufort Sea Section 7 (undistributed) as of 09/30/90	
	Bonuses	$ 429,875,468
	Rents	2,021,059
	Interest Realized[2]	611,936,264
	Total Section 7 Balance	**$1,043,832,791**
	Interest Accrued (estimated) on Outstanding Investments	**$ 28,904,843**

[1] Includes transfers from Account 141820 of $843,765,1673 to the Land and Water Conservation Fund; and from Account 142020 of $150,000,000 to the Historic Preservation Funds, which also includes the release of escrow accounts.

[2] Interest Realized is the difference between the cost of purchased securities and cash received (face value) upon their redemption. Interest Accrued is an estimated amount computed under the assumption that outstanding securities will be redeemed at maturity. A premature redemption could result in either gain or loss, depending on the market value of the securities at that time; however, no premature redemptions are anticipated.

Recommendations to the Congress

Section 15(1)(D) of the OCSLA, as amended (43 U.S.C.1343(1)(D)), requires that the Secretary of the Interior submit to the President of the Senate and the Speaker of the House of Representatives as part of the *Annual Report on the OCS Oil and Gas Leasing and Production Program:*

> (D) recommendations to the Congress (i) for improvements in management, safety, and amount of production from leasing and operations in the Outer Continental Shelf, (ii) for resolution of jurisdictional conflicts or ambiguities.

The Department of the Interior has no recommendations at this time on these matters.

OCS Report
MMS 91-0041

Outer Continental Shelf

Oil & Gas Leasing/Production Program:

Annual Report, FY 1990

U.S.Department of the Interior
Minerals Management Service

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. Administration.