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General Accounting Office

Offshore Lease Sale 59 Affected By Differing Views On Oil And Gas Potential

The Department of the Interior's higher than normal rejection rate of bids for offshore lease sale tracts in mid-Atlantic Sale 59 could have been caused by many factors. The most likely explanation is that Interior viewed the quantity of potential oil and gas resources located in the sale area more optimistically than industry did. These differing views also led to a wide disparity between Interior's budgetary revenue estimate for the sale and what industry offered for the sale tracts. Other factors considered by Interior and industry in determining tract values, such as exploration and development costs, may have contributed to the tract value differences, but not significantly.

The Interior Department recently announced a new bid acceptance approach which will rely more on competition and marketplace values to determine the acceptability of high bids, rather than its own independently developed minimum tract values. Interior will independently evaluate and value only selected tracts under this new approach. Had this system, planned for implementation in April 1983, been used in Sale 59, it is likely that a number of rejected bids would have been accepted and more tracts leased.

GAO/RCED-83-9
MARCH 24, 1983

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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

RESOURCES, COMMUNITY,
AND ECONOMIC DEVELOPMENT
DIVISION

B-210178

The Honorable Carroll Hubbard
Chairman, Subcommittee on the Panama
Canal and Outer Continental Shelf
Committee on Merchant Marine and
Fisheries
House of Representatives

Dear Mr. Chairman:

This report, prepared at your request, discusses and comments on the factors that may have caused the high bid rejection rate and the low bonus revenues in Outer Continental Shelf (OCS) Lease Sale 59. Although not included in your request, the report also discusses the sale results in terms of Interior's proposed new OCS bid acceptance process. If the proposed new process had been used in Sale 59, a number of rejected bids would probably have been accepted and more tracts leased. The report should be of assistance in the Congress' review of the offshore oil and gas leasing program.

Unless the report is publicly announced by you, we plan no further distribution until 30 days from the date of the report. At that time, copies will be sent to the Director, Office of Management and Budget; the Secretary of the Interior; other House and Senate committees and subcommittees having oversight and appropriation responsibilities for the offshore leasing and development program; and other interested parties.

Sincerely yours,

J. Dexter Peach
Director

REPORT BY THE U.S.
GENERAL ACCOUNTING OFFICE

OFFSHORE LEASE SALE 59 AFFECTED BY DIFFERING VIEWS ON OIL AND GAS POTENTIAL

D I G E S T

Nearly half the high bids submitted on tracts in mid-Atlantic Outer Continental Shelf (OCS) Lease Sale 59 were rejected by the Department of the Interior as being less than the fair market value for the oil and gas resources believed to be contained on the tracts. This rejection rate is unprecedented when compared to past leasing experience in which Interior has rejected only about 10 percent of industry's high bids.

The sale was also disappointing because the total high bids for the sale tracts were far less than what Interior had anticipated--about $425 million as compared with Interior's estimate, for budgetary purposes, of $3.6 billion.

The Chairman, Subcommittee on the Panama Canal and Outer Continental Shelf, House Committee on Merchant Marine and Fisheries, asked GAO to review the sale and comment on factors that may have contributed to the poor sale results.

Sale 59--considered the first truly deepwater offshore lease sale in U.S. waters--was Interior's third mid-Atlantic offshore lease sale. No commercial oil or gas discoveries have been made in the areas leased in the prior two sales. (See p. 2.)

DIFFERING ESTIMATES OF OIL AND GAS POTENTIAL RESULTED IN TRACT VALUE DIFFERENCES

Although available evidence is not sufficient to determine with certainty what accounted for the differing tract value estimates in the sale--and thus the high bid-rejection rate--GAO believes the major cause was that Interior's estimate of the quantity of oil and gas potential in the sale area exceeded that of industry's. Other factors could have contributed to the differences between Interior's and industry's estimates of tract values, but they could not account for the large differences. (See pp. 13 and 28.)

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Tear Sheet

Nearly all the tracts identified by Interior as being of most interest to industry were offered in the sale. According to Interior's evaluation, the tracts industry bid on contained about 80 percent of the resources in the area. Interior and industry approached the sale using the same tract-value estimating techniques that were used in the past. Also, both used comparable data in their tract evaluation models with one important exception--their estimates of the quantity of oil and gas contained in the sale area. (See pp. 4, 13, and 37.)

At this time there is no way of knowing which estimate of the Sale 59 area's oil and gas resources is more correct--only exploration and drilling results will answer this question. (See p. 41.)

COMPETITION INCREASED IN SALE 59

Competition in the sale--that is, the number of participating companies, the percentage of tracts receiving bids, the average number of bids per tract, and the average dollar amount bid per acre--was comparable to or better than the prior mid-Atlantic sale, although not nearly as good as the first mid-Atlantic sale. Interior rejected no bids because of insufficient competition. Thus, the lack of competition was not a factor in the bid-rejection rate in the sale. (See p. 4.)

COMPETITION MORE INTENSE ON ALTERNATIVE BIDDING SYSTEM TRACTS

Alternative bidding systems were mandated under the OCS Lands Act Amendments of 1978 as a means of reducing the up-front dollar amounts required to obtain a lease and increasing competition in OCS lease sales. About one-third of the tracts offered in Sale 59 were offered under an alternative to the traditional bidding system.

Competition was greater on the alternative bidding system tracts. For example, about 49 percent of the alternative system tracts (41 tracts) were bid on, with about 2.7 bids per tract and an average high tract bid of about $5.9 million. By comparison, 34 percent of the traditional system tracts (57 tracts) were bid on with about

2.3 bids per tract and an average high bid per tract of about $3.2 million. Also, a greater percentage of high bids on alternative bidding system tracts were accepted in comparison to the traditional bidding system tracts. Thus, GAO believes that the alternative bidding system that was used did not affect the high bid-rejection rate. (See pp. 28 to 30.)

OTHER FACTORS OF CONCERN TO THE SUBCOMMITTEE

The 10-year lease terms, industry capabilities in deep water, and environmental concerns affected the tract values calculated by both Interior and industry. However, these concerns were reflected in a comparable manner; thus they do not appear to have led to wide disparity in the perceived values nor the bid-rejection rate in the sale. (See p. 28.)

IMPLICATIONS FOR INTERIOR'S NEW BID ACCEPTANCE APPROACH

In presenting its accelerated leasing program to the Congress in May 1982, Interior also proposed a new approach for evaluating and accepting bids for offshore tracts. Under the new approach only selected tracts--rather than all sale tracts--will be evaluated in detail using the traditional evaluation techniques used for Sale 59. Interior, under its traditional procedures, independently developed values for each tract based on extensive economic, geological, and engineering analyses prior to the sale. Under the new approach Interior plans to rely more on competition and the marketplace than on its own detailed evaluation of each tract for determining the minimum acceptable bid. Decisions about which tracts to evaluate will be made after the bids are received, based on predetermined criteria such as the number of bids on a tract, and other marketplace factors.

Because only selected tracts will be evaluated using past evaluation techniques, GAO believes it likely that had the new approach been used in Sale 59, a number of the rejected bids would have been accepted and more tracts leased. Although the new approach should allow Interior to offer more land for leasing, by eliminating the time previously required to make presale tract evaluations, GAO notes that it also may lessen the assurance that the Government will receive bids

as high or higher than in the past. This is particularly likely at a time when a great deal more land is being offered for lease and the outlook and market demand for oil and gas are uncertain. (See pp. 10 to 12 and 41 to 43.)

AGENCY COMMENTS

Interior, in commenting on a draft of this report and in subsequent discussions to clarify its comments, raised two major points regarding GAO's findings.

--The information presented in the report is insufficient to support GAO's conclusion that the differing resource estimates were the reason for the tract value differences.

--The statement in the draft report that the percentage of the tracts (60 to 70 percent) that may be leased under its new bid acceptance process without any evaluation is incorrect.

As indicated in the report, GAO was unable to obtain and verify the detailed data and assumptions industry used in planning for Sale 59. Thus, detailed comparisons of industry's planning parameters for the sale with those of Interior's are not possible. However, GAO's analysis of the key factors that affected the calculation of tract values showed that only one factor--the estimate of potential oil and gas resources--was viewed differently by Interior and industry. GAO emphasizes that this is the most likely reason for the differing tract values. Interior officials, in meeting with GAO subsequent to receipt of their written comments, said they agreed. (See p. 43.)

Concerning Interior's second point, GAO acknowledges that all tracts receiving bids will receive some form of evaluation under the proposed new bid acceptance process. But, under the new process, the majority of the tracts would not receive detailed evaluations using past evaluation techniques. The report has been revised to clarify this. (See p. 44.)

Interior did not comment on GAO's proposal in its draft report that it take appropriate steps to

analyze the effects of using its new bid acceptance process to help assure its reliability and enhance its public acceptance. Since then, however, Interior has tested several bid acceptance proposals and has publicly discussed its plans for implementation on a limited basis.

On February 22, 1983, the Secretary approved a new bid acceptance process to be implemented beginning with Sale 76 scheduled for April 26, 1983. The announcement came too late for a detailed evaluation and presentation of the process in this report. GAO's preliminary examination, however, indicated that it closely follows the conceptual approach proposed by the Department in earlier policy statements and thus may be subject to the same concerns noted in this report.

Contents

ABBREVIATIONS

BLM	Bureau of Land Management
Btu	British thermal unit
COST	Continental Offshore Stratigraphic Test
DMROV	discounted mean range of value
GAO	General Accounting Office
MMS	Minerals Management Service
MROV	mean range of value
OCS	Outer Continental Shelf

CHAPTER 1

INTRODUCTION

The Department of the Interior rejected nearly half of the high bids submitted for tracts offered in the December 8, 1981, mid-Atlantic Outer Continental Shelf (OCS) lease Sale 59 because the bids were viewed as being less than the fair market value for the tracts. Historically, Interior has rejected the high bids received on about 10 percent of the tracts receiving bids in prior lease sales. Thus, Sale 59 represents a radical departure from past leasing experience.

In addition, the total high bonus bids for the sale were far less than what Interior had estimated. For budgetary purposes, Interior estimated that bonus revenue from the sale would be about $3.6 billion--industry high bids, however, totaled only about $425 million, or about 12 percent of what was anticipated.

OBJECTIVES, SCOPE, AND METHODOLOGY

On February 23, 1982, the Chairman, Subcommittee on the Panama Canal and Outer Continental Shelf, House Committee on Merchant Marine and Fisheries, requested that we review and testify on mid-Atlantic lease Sale 59 at the subcommittee's April 22, 1982, hearings. The request was subsequently modified to include a report to the chairman at a later date. The request was modified because the immediacy of the proposed hearing would not allow enough time for a thorough review of the sale.

The objective of the request was to determine the factors that were involved in rejecting such a high percentage of the sale bids. Specifically, we were asked to determine if the following factors had a significant impact on the sale and the bid rejection rate:

--Industry competition.

--Fair market value and resource evaluation.

--Ten-year lease terms.

--Industry's capabilities to explore and develop deepwater leases.

--Environmental concerns.

Interior is the Federal agency responsible for leasing and managing offshore lands. In conducting our review, we interviewed

officials at Interior's Minerals Management Service (MMS) 1/ and Bureau of Land Management (BLM). 2/ MMS and BLM were responsible for tract evaluation and leasing, respectively, in Sale 59. We also interviewed industry officials of five companies--Continental Oil Company, Exxon Company U.S.A., Shell Oil Company, Sohio Petroleum Company, and Tenneco, Inc.--participating in Sale 59. These companies were judgmentally selected because of their continued participation in OCS lease sales over the past years. We examined Sale 59 records at BLM and at MMS' Atlantic OCS Office and reviewed budgetary estimate calculations at Interior. We also reviewed (1) the post-sale tract evaluation analyses done by MMS' Atlantic OCS Office, (2) an MMS peer review group's report of MMS' tract evaluations, and (3) summary information obtained by MMS from a number of companies regarding industry bidding assumptions used in the sale.

Company officials we interviewed were willing to discuss the sale, and the data and assumptions they used in planning for the sale, in general terms. However, for proprietary reasons they were unwilling to provide us with specific information needed to make a detailed analysis of how their bids were developed. Thus, we were not able to make precise comparisons between the information Interior used in planning for the sale and the information used by industry. Consequently, our analyses of industry's sale planning assumptions are based on industry data we were able to obtain from MMS and the information industry was willing to share with us. Because we were unable to obtain certain specific information from company officials, we can not attest to the accuracy and completeness of all of the industry data we used. However, based on the data we reviewed and compared, we were able to satisfy ourselves of the reasonableness of the conclusions reached in this report.

Our review was performed in accordance with generally accepted government audit standards.

SALE 59

Sale 59 is essentially the first truly deepwater OCS sale in U.S. waters, although about 140 of the 285 tracts offered in the August 1981 South Atlantic Sale 56 were deepwater tracts. Sale 59 was the third OCS sale in the Baltimore Canyon off the U.S. mid-Atlantic coast. The first sale (Sale 40) was held on August 17,

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1/The Secretary of the Interior established MMS on January 19, 1982. MMS is responsible for activities previously handled by the Conservation Division of the U.S. Geological Survey. We refer to MMS in this report for Geological Survey activities relating to Sale 59.

2/On May 10, 1982, BLM's OCS functions were also transferred to MMS. For this report, we refer to those activities performed by BLM in Sale 59 as BLM actions rather than MMS actions.

1976, and the second sale (Sale 49) on February 28, 1979. Sale 59 was located east of the prior two sale areas lying in average water depths of 90 to 2,375 meters (295 to 7,792 feet), and ranging from 64 to 113 statute miles offshore of the States of Delaware, Maryland, New Jersey, New York, and Virginia. Most of the sale area lies to the east of those tracts previously leased in Sales 40 and 49.

MMS estimated a potential for 962 million barrels of oil and 7.6 trillion cubic feet of gas in the sale area. However, exploration to date has not been encouraging. Industry exploration of sale areas 40 and 49 resulted in 23 dry holes and 5 exploratory wells with natural gas. To date, none of the gas wells has been declared commercial, indicating that any wells drilled in deeper waters would be even more speculative since the development costs will be higher even if oil and gas are found.

CHAPTER 2

COMPETITION IN OCS SALE 59 WAS GENERALLY IN LINE WITH PRIOR MID-ATLANTIC SALES

Competition does not appear to have been a factor in the high bid-rejection rate in Sale 59. Almost all of the tracts industry expressed strong interest in were offered in the sale. Various indicators of competition--that is, the number of participating companies, the percentage of tracts receiving bids, the average number of bids per tract, and the average dollar amount bid per acre--show that the sale was comparable to or better than the prior mid-Atlantic lease sale of 1979, although not nearly as good as the initial mid-Atlantic sale in 1976. Interior rejected no high bids in Sale 59 because of insufficient competition.

In Sale 59, 62 percent of the tracts bid on received two bids or less, and 57 percent of the high bids on these tracts were rejected. This is significant when viewed in terms of Interior's proposed new bid acceptance process. If the proposed new bid acceptance process had been used for Sale 59, a number of the rejected tracts would probably have been accepted.

TRACTS RECEIVING HIGHEST INTEREST BY INDUSTRY WERE INCLUDED IN THE SALE

The initial Call for Nominations and Comments for Sale 59 was published in the Federal Register on July 12, 1979, 2-1/2 years prior to the sale. The call area was later revised on September 5, 1979, to include 92 additional tracts in deeper waters. The final call area consisted of 3,513 tracts covering 20 million acres.

Fourteen companies nominated a total of 785 tracts for the sale, amounting to 4,314,465 acres, or about 22 percent of the call area. According to a BLM official, BLM separated the tract nominations into groups of high, medium, and low industry interest as follows:

--Seven to 10 nominations indicated high interest.

--Four to 6 nominations indicated medium interest.

--One to 3 nominations indicated low interest.

As shown in table 1, 84 (or 11 percent) of the 785 nominated tracts were categorized as high-interest tracts, and 134 (or 17 percent) were viewed as having medium industry interest. Nearly three-fourths of the 785 tracts received three or fewer nominations and were considered to be of lower industry interest. Map 1 shows the location of the tracts by interest level. (See p. 6.)

About 32 percent of the tracts nominated by industry were offered for lease in the sale. However, the tracts industry collectively believed were the most promising were made available for leasing. All of the high-interest tracts and about 98 percent of the medium-interest tracts were included in the sale.

Table 1

Tracts Nominated, Offered, and Bid on by Interest Level

	Tracts nominated		Tracts included in sale		Tracts bid on	
Interest level	No.	Percent of nominations	No.	Percent included	No.	Percent included
High	84	11	84	100	54	64
Medium	134	17	131	98	41	31
Low	567	72	38	7	3	8
Total	a/785		253		98	

a/Out of 3,513 tracts offered for nomination.

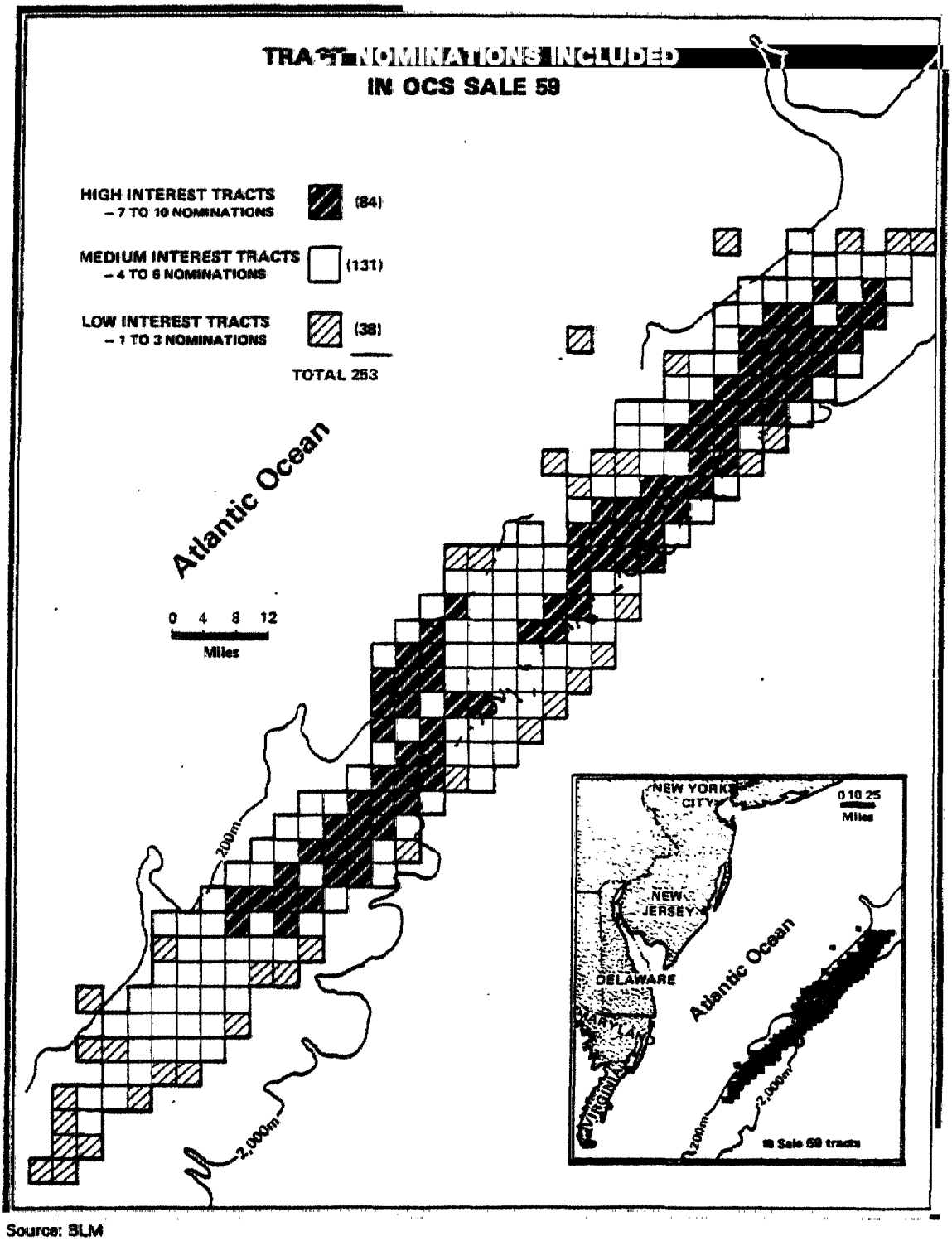
Source: Based on BLM and GAO data.

BIDDING IN SALE 59

Of the 253 tracts offered in Sale 59, 98 received bids--about 39 percent of the tracts offered. Map 2 shows the tracts that were bid on in the sale. (See p. 7.) As discussed in chapter 5, the tracts bid on contained, according to Interior estimates, about 80 percent of the potential resources estimated for the sale area. However, Interior and industry appear to have differed on the distribution of the resources among the tracts and, furthermore, disagreed on the total amount of resources in the sale area. As a result, Interior rejected 49 percent of the high bids submitted for Sale 59 because the bids were viewed as being less than the fair market value for those tracts. Historically, Interior has rejected the high bids received on about 10 percent of the tracts receiving bids in prior lease sales. Thus, Sale 59 represents a radical departure from past leasing experience.

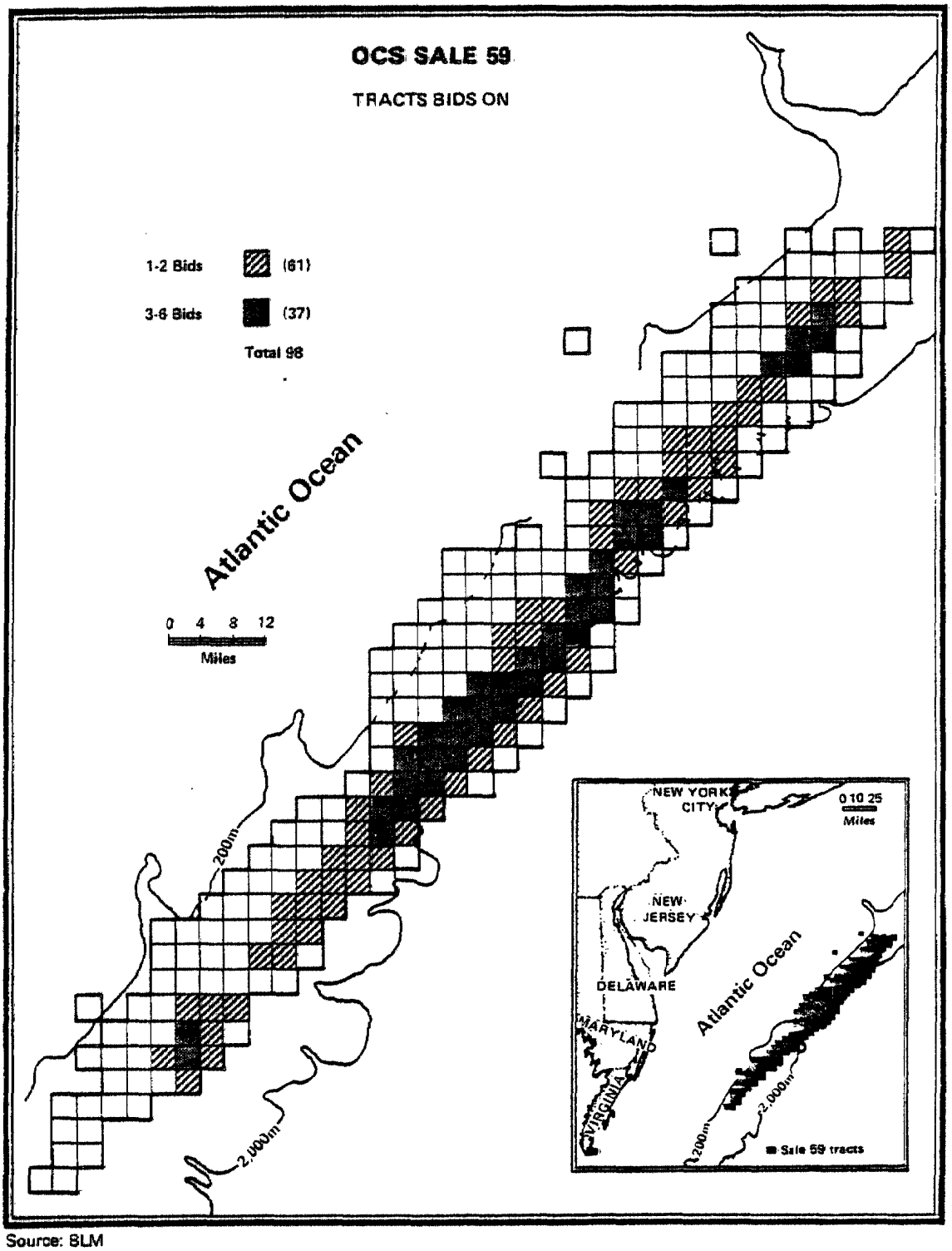
Sixty-two percent of the tracts bid on received either one or two bids, or an average of 1.36 bids per tract. The remaining 38 percent, however, had a high level of competition--157 bids or 4.24 bids per tract. As shown in map 2, industry interest focused on a long string of tracts (about 140 miles) running along the continental slope (where the continental shelf slopes off to the deep Atlantic Ocean floor). The highest interest was in the centermost tracts in the sale area.

MAP 1



Source: BLM

MAP 2



Source: BLM

It is significant to note that only about 22 percent of the call area was nominated by industry for leasing; Interior offered about 7 percent of the area for lease; and in the actual sale only about 3 percent of the call area received bids. These percentages are especially noteworthy when compared with Interior's current plan to increase leasing by offering entire OCS planning areas for lease. Because industry was not interested in the entire area and, furthermore, bid on only about 39 percent of the tracts offered for lease, this suggests that the areawide approach may not achieve significantly increased leasing if industry is unwilling to invest more money for OCS leasing.

Twenty companies participated in Sale 59. Eleven of the 14 companies that initially nominated tracts for the sale actually participated in the sale--3 companies that nominated tracts did not participate. Three of the 20 companies participating in the sale bid alone exclusively. The remaining 17 companies sometimes bid alone and sometimes bid with a partner or partners.

COMPARISON OF SALE 59 WITH PRIOR MID-ATLANTIC SALES

As noted earlier, Sale 59 was the third mid-Atlantic OCS lease sale. Sale 40, the initial sale held in August 1976, has been the most successful sale to date by comparison as judged by the statistics in table 2. Sale 49, the second sale held in February 1979, although seemingly of higher interest than Sale 40 as evidenced by the fact that over 70 percent of the call area was nominated, proved to be much less successful than Sale 40. Sale 59 was not nearly as successful as Sale 40 but showed a marked improvement over Sale 49. Table 2 shows these and other sale statistics for the three sales.

Table 2

Mid-Atlantic Sales Statistics

	Sale 40	Sale 49	Sale 59
Date of Sale	8/17/76	2/28/79	12/08/81
Tracts in call area (note a)	1,151	2,637	3,513
Nominations	557	1,885	785
Percentage of call area nominated	48	71	22
Tracts offered	154	109	253
Tracts receiving bids	101	44	98
Percentage of tracts bid on	66	40	39
Total number of bids	410	74	240
Average number of bids per tract	4.06	1.68	2.40
Tracts receiving only one bid	28	24	39
Percentage of one-bid tracts	28	55	40
Total high bids (in millions)	$1,135.80	$ 41.70	$424.90
Average high bid per acre	$2,130.33	$180.16	$761.61
Number of high bid rejections	8	5	48
Bid rejections percentage	7.9	11.4	49
Companies bidding	60	16	20

a/Call areas for sales in the same OCS region are not mutually exclusive. Consequently, double counting of tracts and acreages offered may occur in sales subsequent to the initial sale.

Source: Based on BLM and GAO data.

Sale 59 was essentially a reconsideration of the unleased acreage offered in the two prior mid-Atlantic sales plus additional deepwater acreage to the east of the prior sale areas. The call area for Sale 59 consisted of over 3,500 tracts--three times as many tracts as Sale 40 and about one-third more than considered in Sale 49. About 40 percent more tracts were nominated for lease in Sale 59 than in the highly successful Sale 40. However, the tract nominations for Sale 59 were far less than the nominations for Sale 49--1,885 tracts were nominated for Sale 49 while only 785 tracts were nominated for Sale 59.

Industry participation and interest patterns are quite different for the three sales. Sale 40 had the highest interest and participation as shown by the number of companies bidding, the total number of bids, and the average number of bids per tract. Sale 49 was not a high-interest sale, using these same indicators, and probably resulted from the poor exploratory drilling record of the first sale area. But Sale 59 shows increased industry interest in the region as the offerings go into deeper waters. Even though the number of companies bidding in Sale 59 is almost the same as in Sale 49, the total number of bids increased almost 3 times, the average number of bids per tract increased by almost one full bid, and the average high bid per acre was 4 times greater than that for Sale 49. Based on the above indicators of industry interest and competition, it does not appear that these factors had an adverse impact on the high number of rejections in Sale 59. Furthermore, as shown in chapter 3, Interior rejected no high bids because of insufficient competition.

SALE RESULT IMPLICATIONS FOR NEW PROPOSED BID ACCEPTANCE PROCEDURES

Under Interior's traditional bid acceptance process the Department, based on its own extensive economic, geological and engineering analyses, determines the amount of money it will accept for each tract--that is, the minimum acceptable bid--prior to the sale. Company bids offered for each sale tract on the sale date are then compared with Interior's previously determined tract values. The high tract bids meeting or exceeding Interior's tract values are accepted and leases are then awarded to the winning companies.

Under its proposed bid acceptance approach, submitted to Congress on May 11, 1982 as part of its 5-year OCS leasing program proposal, Interior will discontinue the practice of establishing minimum acceptable bids for each tract prior to a sale. Instead, it will rely more on marketplace factors, such as competition as evidenced by the number of bids placed on a tract, to determine whether high tract bids should be accepted. Interior will screen all tracts receiving bids and, based on presale screening criteria, determine which tracts will require a detailed

evaluation. Leases will be awarded immediately for tracts meeting the presale screening criteria. This approach is being taken so that Interior can offer more land for lease (the time needed for conducting presale tract evaluations limits the number of tracts that can be offered for lease), and make more efficient use of its tract evaluation staff, that is, Interior staff would concentrate only on tracts receiving bids.

Interior's criteria for selecting tracts for detailed evaluation had not been formalized at the close of our review. 1/ Based on information contained in Interior's May 11, 1982, 5-year leasing program proposal to the Congress, and our discussions with Interior officials, it appears that marketplace factors, specifically the degree of competition, will have a strong influence on the selection of tracts for detailed evaluation under past evaluation techniques. One of several initial marketplace criteria considered was the number of bids received on a tract, that is, if a tract received a certain number of bids (showing adequate market competition for a tract) the high bid for the tract would be accepted without further evaluation. Under this approach, tracts receiving few bids would be prime candidates for detailed evaluation using past evaluation techniques. Based on Interior's proposal, it appears that 30 to 40 percent of the tracts receiving bids in a sale will be selected for a detailed evaluation.

In Sale 59, 62 percent of the tracts bid on received two bids or less--57 percent of these bids were rejected. If the new bid acceptance procedures had been used in Sale 59, a number of these rejected one- and two-bid tracts would probably have been accepted, assuming that Interior would only be evaluating 30 to 40 percent of the tracts receiving bids. Interior could modify its selection criteria to pick up more of these tracts for detailed evaluation in these situations. But this would require more time and a delay in awarding leases which could affect both industry's and Interior's plans for follow-on sales--which under Interior's accelerated program will be averaging eight sales per year over the 5 years of

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1/On February 22, 1983, the Secretary approved a new bid acceptance process to be implemented, beginning with Sale 76, scheduled for April 26, 1983. The announcement came too late for a detailed evaluation and presentation of the process in this report. Our preliminary examination of the new process, however, indicated that it closely follows the conceptual approach proposed by the Department in prior policy statements. Thus, our discussion and concerns on the approach as presented in this report, in our opinion, remain valid.

the plan. As we indicated in a past report, 1/ timely evaluation and issuance of leases is critical to the success of Interior's leasing program because of the short time interval between sales.

1/"Pitfalls in Interior's New Accelerated Offshore Leasing Program Require Attention" (EMD-82-26, Dec. 18, 1981).

CHAPTER 3

TRACT VALUE DIFFERENCES APPEAR TO BE ATTRIBUTABLE TO DIFFERING HYDROCARBON ESTIMATES

A number of factors could have caused the differences between Interior's and industry's tract values in Sale 59. However, it appears that the most significant factor leading to the differences was the respective geological analyses which determined the estimated quantity of potential hydrocarbon resources in the sale area. Other factors--such as risk and development costs--which reportedly were suspected as responsible for the tract value differences were probably not major causes for the sale's high bid-rejection rate. These and other factors no doubt affected the final tract values calculated by Interior and industry. However, it seems that Interior and industry used comparable data in developing their respective tract values, with one important exception--the estimated quantity and location of potential hydrocarbons in the sale area.

Overall, it appears that Interior had a more optimistic view of the hydrocarbon potential of Sale 59 than industry, particularly in the northern portion of the sale area. Until exploration occurs, the correct interpretation of tract values will not be known.

SALE 59 TRACT VALUE DIFFERENCES

MMS' total estimated value for the tracts bid on in Sale 59 was $1.98 billion, while the industry high bids totaled $424,927,000, only about 21 percent of MMS' value. 1/ Also, of the 98 tracts bid on in the sale, MMS valued 21 at the minimum bid of $25 per acre. A minimum bid is normally assigned to a tract when Interior believes the tract contains no resources or when the resources contained on a tract are not economically developable.

The disparity between MMS and industry tract values is graphically illustrated by comparing the location of MMS' top-valued tracts and the 15 tracts receiving the highest bids from industry. Map 3 shows that MMS placed the highest tract values on the northern portion of the sale area, while map 4 shows that industry bid the most in the central portion of the sale area. The northern area had the highest number of rejected bids (see map 5), of the 48 rejected bids, 31, or 65 percent, were in this area.

Our analysis of MMS' 15 highest top-valued tracts with the 15 tracts receiving the highest bids from industry showed that only 3 tracts (tracts 43, 79, and 80) were viewed by both Interior

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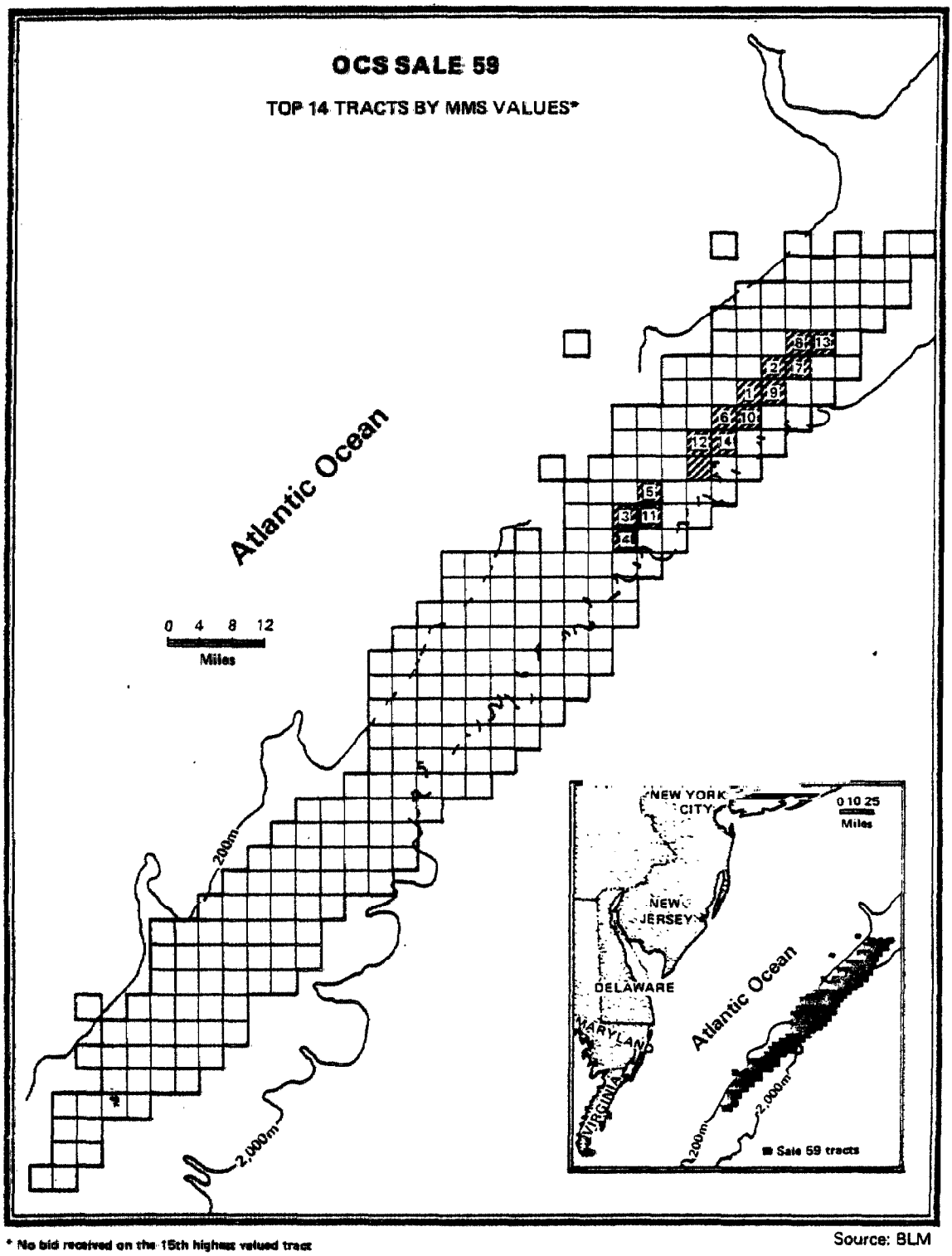
1/As discussed in chapter 5, Interior, for budgetary purposes, estimated that the sale would yield about $3.6 billion.

and industry as having a large quantity of economically developable resources. The top-ranked MMS tract was ranked 15th by industry, while industry's top-valued tract was ranked 32nd by MMS.

MMS' top 15 tracts

Even though MMS and industry did not agree on which specific tracts in the sale area have the greatest economically producible hydrocarbon potential, 14 of MMS' 15 top-valued tracts received bids. Industry did not bid on MMS' 15th ranked tract. As shown in table 3, however, the total value of the 14 top MMS tracts was about $1.2 billion--over 20 times greater than the $56.9 million total high bonus bids received. The value of the 15th highest-valued MMS tract is classified and, therefore, is not presented in this report. All of the high bids on MMS' top 14 tracts were rejected.

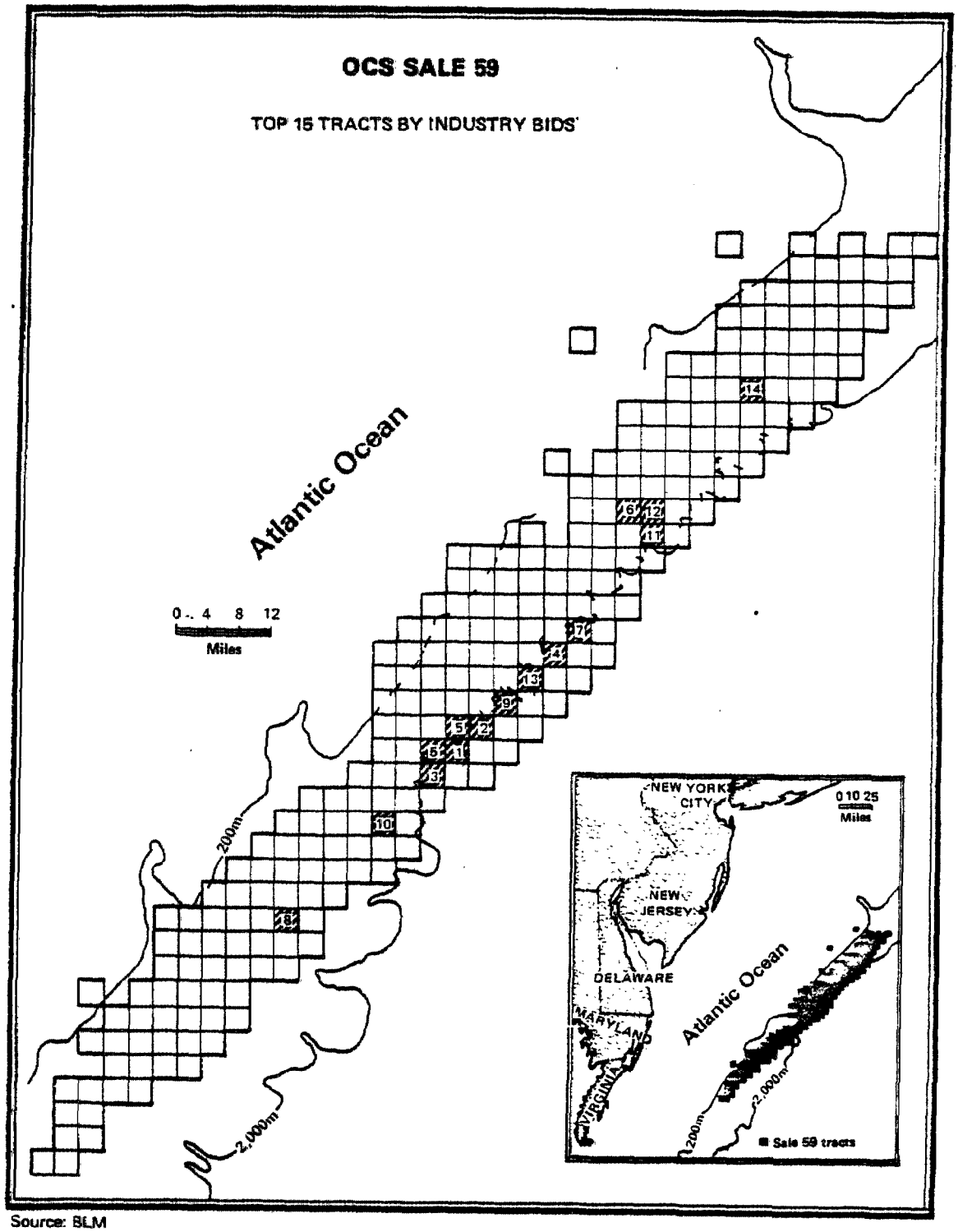
MAP 3



* No bid received on the 15th highest valued tract

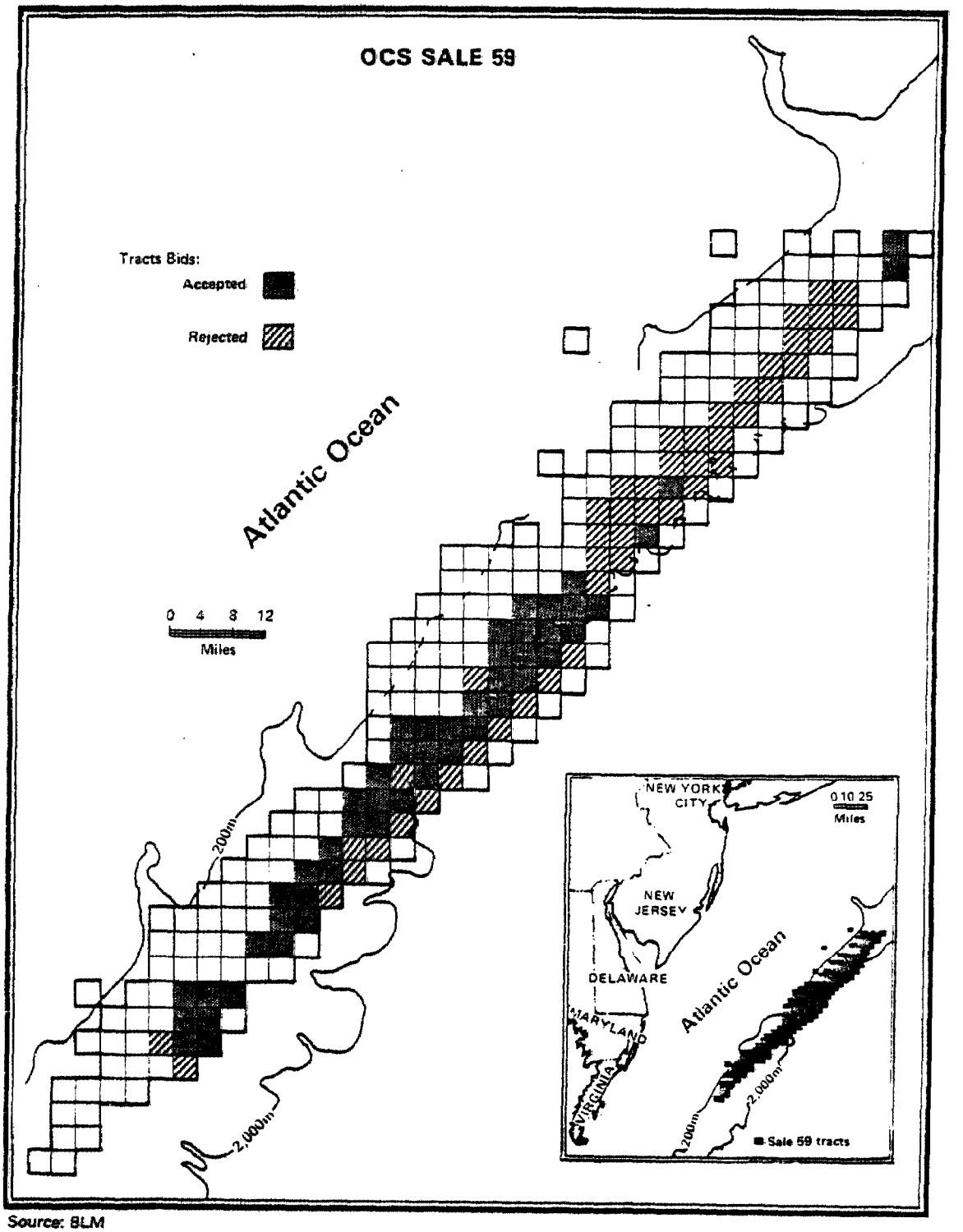
Source: BLM

MAP 4



Source: BLM

MAP 5



Source: BLM

Table 3

MMS' 15 Top Tracts

Rank	Tract No.	MMS value	High-bonus bid
1	43	$114,889,968	$10,388,000
2	36	105,194,976	2,067,000
3	79	101,024,048	15,190,000
4	86	98,792,832	4,525,000
5	73	94,242,752	2,009,000
6	51	87,649,216	284,000
7	37	83,935,856	842,000
8	29	81,186,240	7,717,000
9	44	77,642,416	572,000
10	52	76,441,376	152,000
11	80	75,115,184	11,345,000
12	58	70,063,248	203,000
13	30	65,572,464	1,375,000
14	59	55,047,776	203,000
15		(a)	(a)
Total		$1,186,798,352	$56,872,000

a/No bid received.

Source: Based on BLM and MMS data.

Industry's 15 top tracts

Table 4 shows industry's 15 top-valued tracts in comparison to MMS' tract values. The total value placed on these tracts by industry was $241 million whereas MMS' value for the same tracts was $446,355,767, or almost twice that of industry.

Table 4

Industry's 15 Top Tracts

Rank	Tract No.	Bonus bid	MMS value
1	161	$41,467,000	$ 14,706,512
2	155	22,183,000	10,958,647
3	167	17,793,000	11,771,393
4	131	16,477,000	9,837,558
a/5	154	15,482,000	16,534,498
a/5	160	15,482,000	14,626,625
6	79	b/15,190,000	101,024,048
7	122	14,377,000	8,980,581
8	207	c/13,433,000	142,848
9	148	12,678,000	11,399,120
10	180	12,324,000	7,855,730
11	87	11,648,000	39,793,360
12	80	b/11,345,000	75,115,184
13	140	10,733,000	8,719,695
14	43	b/10,388,000	114,889,968
Total		$241,000,000	$446,355,767

a/Tie.

b/Rejected bids.

c/MMS valued at less than the minimum bid.

The totals for the 15 tracts are misleading because only 5 of the 15 tracts had bids lower than MMS' values--10 of the 15 tracts received bids higher than MMS' valuation. Three of these five tracts--79, 80, and 43--had large MMS values in comparison to the

bids, which distorts an overall comparison between industry's total bids and MMS tract values. For example, MMS valued tract 43 at $114.9 million, whereas industry's high bid for the tract was $10.4 million. Of the approximate $200-million difference between MMS' and industry's total values in table 4, $100 million is attributable to this one tract.

Another tract--87--had a much higher MMS value than the high bid. The bid on this tract was not rejected because the high bid was higher than the average of all six bids received on the tract and MMS' value. That is, MMS' value was totaled with all the high bids received on the tract and divided by seven (MMS value plus six bids) to arrive at an average bid. Since the average bid was lower than the highest bid offered, the high bid was accepted. The bid on tract 154 was accepted because it was greater than the discounted MMS value. The discounted value of a tract is what MMS believes the tract will be worth if it is leased at the next planned sale in the same area. The procedures used in evaluating and accepting the bids on tracts 87 and 154 are standard procedures MMS used in its bid evaluation and acceptance process.

MMS' DEVELOPMENT OF TRACT VALUES AND EXPLANATION OF DIFFERENCES

MMS' Atlantic OCS Office developed tract values for the Sale 59 tracts using essentially the same methodology as in previous Atlantic sales, with adjustments for the deep water. The major input factors developed for the tract evaluation computer model for each sale include

--structure resource estimate parameters obtained from mapping and other sources such as seismic data, Continental Offshore Stratigraphic Test (COST) wells in the area, and lease well data; 1/

--exploration, development, and operating costs;

--engineering designs for production for each structure;

--risk factors;

--the market price of oil and gas; and

--the bidding systems.

1/A Continental Offshore Stratigraphic Test well is drilled in an area thought to contain no oil or gas. Such wells provide core samples and cuttings for more precise stratigraphic, paleontologic, geochemical, geophysical, structural, and geologic evaluations in a sale area. Eleven companies participated in drilling the B-3 COST well in the northern portion of Sale 59. The well data was shared among the participating companies and provided to MMS.

In developing the original resource estimate parameters for each structure in the sale, MMS reduced the fill-up rates of the structures from the rates used in Sale 56, the prior South Atlantic sale. A fill-up rate is described as a percentage of a hydrocarbon trap (a potential reservoir) that contains oil and gas resources. A range of probabilities from the least likely to the maximum fill-up rate, with a most probable rate somewhere in between, is put into MMS' tract evaluation computer model for each hydrocarbon trap. By using a lower range of fill-up rates, MMS reduced the potential resource estimate for Sale 59 over what it would have been if the older standard had been used. MMS officials told us that they changed the fill-up rates because they seriously doubted that enough hydrocarbons could have been generated to fill the very large traps in the Sale 59 area.

The exploration, development, and operating costs are derived by MMS officials from information obtained from industry through site visits to oil companies involved in OCS leasing. MMS uses industry's cost data in its tract evaluation model. These costs, for example, include the cost of an exploration well, installing a platform at a certain water depth, or laying a pipeline. For Sale 59, current data on costs were obtained from the oil companies and utilized by MMS in developing tract values for the sale.

The engineering design for production for each structure is developed using detailed geologic interpretations developed by MMS. This is a specific plan for developing and producing hydrocarbons from a structure. Factors used in the design include industry engineering designs for similar hydrocarbon structures, water depth, and the kinds of production systems industry anticipates using in the future. Thus, the number of wells, platforms, and so forth is a combination of past experience and industry's projected methodology and Government regulations.

The risk factor used by MMS is called a geologic uncertainty factor which reflects the probability of success in finding hydrocarbons in an area. In Sale 59, the range of geologic risk factors used was similar to those used in Sale 56. A slight reduction to these factors was used for some structures in Sale 59 which were considered less risky than in Sale 56. A lower risk factor normally results in higher tract values.

The economic parameters of oil and gas prices are adjusted for each sale by MMS headquarters and given to the region for use in the tract evaluation model. These prices are used to calculate the expected revenues from a lease over its life. For Sale 59, these prices were based on September 1981 oil import prices adjusted to reflect expected increases due to inflation, average transportation costs, and the differing quality of the expected hydrocarbons in the sale area.

The bidding systems to be used in a sale are determined by MMS headquarters officials. The type of bidding system used is an input to the tract evaluation model which influences the amount of

bonus money expected for a sale tract. Bidding systems which provide for low royalty payments, should production occur, usually yield higher bonus revenues than systems with higher royalty rates.

All of the stated factors are input data for the MMS computer model. A large number of different scenarios (random possible outcomes such as finding or not finding hydrocarbons, etc.) are calculated using different variables. The values are then averaged using a complex methodology to determine the estimated structure value. The model next generates an after-tax net present value for the structure using the appropriate bidding system. This value is then adjusted by the assigned risk value to arrive at the risked expected net present worth or the mean range of values (MROV) for the structure, which is then apportioned to the tracts on the structure. This value represents what MMS believes is the upper limit of the fair market value for a tract and the maximum amount a bidder would pay to acquire a lease. MROV is then discounted to the time of the next expected sale in the area. The number resulting from the discount calculation is called the discounted mean range of value (DMROV), which represents the expected value of the tracts in the sale area if leased in the next follow-on sale.

At present, there has been no official explanation by Interior of why such large differences occurred between MMS tract values and industry bids. Different post-sale evaluations of the sale have been performed by MMS, however. One of the initial evaluations was done by an MMS review team formed on February 5, 1982, to "carefully and thoroughly examine all aspects of the entire Sale No. 59 evaluation process." The team was composed of peer MMS officials not involved in planning for the sale. On February 25, 1982, the review team submitted a report of the team's findings to the Minerals Manager of the Atlantic OCS Region. After examining all aspects of the evaluation efforts, the team concluded that

--"* * * the geophysical and geological interpretation appeared good to excellent. The parameter values derived from these interpretations were well within the range of probabilities."

--"* * * the overall development-production plan perceived by the engineers was a logical one."

--"* * * the values developed for many of the engineering and economic parameters, however, appeared to be inconsistent with the perceived plan (development-production plan). The collective effect of these inconsistencies, in our opinion, led to high values for many of the tracts on the prospects." [1/]

1/Engineering and economic parameters are referred to in this report as (1) engineering design for production for a structure (see p. 24) and (2) exploration, development, and operating costs (see p. 23).

The team went on to note that:

"* * * Inherent in any economic evaluation of oil and gas prospects is a meager amount of information containing large degrees of uncertainty. The usual uncertainty in geologic data is further compounded in Sale 59 by the great probability of attaining commercial production in 3,000 to 6,000 feet of water. Cost of achieving this technological success remains unknown at this time. Therefore, we are not suggesting that our conclusions are right and the evaluations performed by your people are wrong."

Because of these uncertainties, the team recommended that the rejected tracts not be reoffered in Interior's July 1982 reoffering sale but held for Atlantic Sale 76, scheduled for April 1983. The team believed that the delayed reoffering would provide time for some drilling on the leased Sale 59 tracts. The delay would allow time to add to the area's general geological knowledge, which they believed is greatly needed for a better evaluation.

Because of one comment made by the review team, namely, that portions of engineering and economic parameters for Sale 59 appeared to be inconsistent, MMS reanalyzed these parameters for a large northern structure in Sale 59. MMS officials told us that when the review team's recommendations were put into the computer and the tracts reevaluated, the tract values did not change enough to significantly affect the number of high bids accepted on these tracts. In this follow-on analysis, MMS more than doubled the development and platform costs, increased operating costs by about 25 percent, doubled the number of production systems (platforms), decreased the oil and gas production rates, decreased the well spacing, and reduced the oil and gas recovery rates. The overall values of the reevaluated tracts were reduced by almost 31.5 percent, but all tracts were not equally affected. The range of percentage reductions was between 16 and 85 percent, with most tract value changes in the lower range. Another post-sale evaluation we reviewed assumed higher risk values for the sale. The result of this evaluation did not significantly affect the number of high bids accepted.

MMS believes that it was on the right track in evaluating Sale 59 based on the results of Sale 56 held in August 1981, 4 months prior to Sale 59. This conclusion was based on industry's bidding for a block of Sale 56 tracts in about 4,500 feet of water. In that sale, the total high bids for those blocks equaled MMS' estimated value for the estimated economically recoverable resources of the entire sale area. Also, MMS valued the deepwater tracts in Sale 56 generally lower than industry high bids for those tracts. Since MMS and industry viewed the Sale 59 tracts as more prospectively valuable than those in Sale 56, MMS evaluated Sale 59 tracts in much the same way as the similar block of deepwater tracts in Sale 56.

INDUSTRY'S DEVELOPMENT OF TRACT VALUES AND EXPLANATION OF DIFFERENCES

We spoke to officials of five oil companies that had participated in Sale 59. Industry officials were willing to discuss their bidding assumptions and data used in Sale 59 only in general terms, but were reluctant or unwilling to provide us with any of their proprietary or detailed information on how they prepared their evaluations. In addition to these discussions, we also reviewed records and held discussions with MMS officials regarding MMS' cost-finding trips to industry. From the records and discussions, we obtained some specific industry data. The following comments regarding industry's bidding in the sale are based on information obtained, but not verified, from the above sources.

Industry's tract evaluation methodology for Sale 59 was essentially the same as in past OCS sales. One company, however, indicated that it uses several different models, based on the area to be leased. Most companies contacted indicated that it increased the risk factors and development costs in its model for Sale 59 because of the deepwater tracts which brought down the price the company was willing to pay for a lease.

One company indicated that it used a low charge rate for structures in the sale. (The charge rate of a structure is the amount of pressure which pushes the hydrocarbons through the structure to the well.) The rationale for this was based on the company's geologic interpretations for the sale area.

Several companies questioned the validity of the model MMS used in determining the tract values. They also strongly disagreed with MMS' tract values in the northern portion of the sale area. Even though none of the companies said it knew what values MMS assigned to the variables for determining the Sale 59 tract values, they believed that

--MMS' risk factors were too low,

--MMS' geological interpretation was in error, and

--MMS did not properly assess the costs of production.

One official did note that "Nobody is ever right in frontier areas," even though he believed that MMS' tract values were obviously wrong.

Most industry officials were convinced that MMS had incorrectly interpreted the resource potential in Sale 59, especially in the northern area. One official cited the northern area as having the worst problems of the entire sale area for drilling. He cited possible unstable slide areas, possible problems with bottom stability, and a number of small sharp canyons. However, he also indicated that because the area is several million years old, the bottom may already be solidified. We were told that most companies discounted the value of these tracts because of possible production problems and differences in estimated resource potential.

Another factor which apparently affected industry's tract valuations was the projected time delay until production for the area. Since industry does not have production technology fully developed for deep water, it discounted the value of the tracts by the cost of money over time, and then adjusted for taxes to account for a longer expected time period to bring the tracts into production.

Every company we visited was in the process of analyzing what had happened and reevaluating its own bids as well as all the others. Most companies contacted felt that competition was met in this sale and that the high bids should have been accepted for this reason alone, that is, the tract bid differences were unimportant because the top bid constitutes fair market value when there is adequate competition. One industry official was concerned about Interior's system of publishing all the bids on each tract as opposed to just the high or accepted bids. This practice allows all parties to know the thinking of all other participants, which industry strongly opposes.

OBSERVATIONS ON TRACT VALUE DIFFERENCES

Numerous factors could have caused the differences in MMS' and industry's tract value estimates for Sale 59. Although we did not obtain the specific data companies used in developing Sale 59 bids, we did review and discuss summary data obtained by MMS from companies bidding in the sale regarding industry's overall assumptions and quantification of a number of factors that would affect the calculation of tract values. As a result of this review, an examination of MMS' tract value calculations for the sale, and interviews with both industry and MMS officials, it appears that MMS and industry were using comparable assumptions and data in planning for Sale 59, except for the hydrocarbon estimates. The modeling parameters we examined (such as risk, costs, engineering designs for production of each structure, etc.) seem to have been very similarly developed and used by both MMS and industry. We believe that the differences in the modeling parameters we examined would not account for the differences in tract value estimates. We believe that the main difference in tract values is the geological analyses which determine the estimated hydrocarbon resources of the sale area. Overall, it appears that MMS had a more optimistic view of the hydrocarbon potential of Sale 59 than industry, particularly in the northern portion of the sale area. Even though we cannot conclusively say that this is the major cause for the tract value differences, we were able to satisfy ourselves of the reasonableness of this conclusion.

MMS officials were able to determine after the sale that one of the oil companies probably used a lower fill-up rate than MMS for the northern tracts. 1/ However, according to an MMS official, recomputation of tract values for a large northern structure in the

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1/Previously, we noted that MMS used a lower fill-up rate for Sale 59 than it used in Sale 56.

sale area, using one-half of the rates originally used in Sale 59, did not account for the differences between MMS' and industry's tract values for the structure.

Historically, geologists have not been able to agree on the amount of potential hydrocarbons that may be found in any one prospective area. Hydrocarbon interpretations are based on professional judgments which are in turn based on available geological and geophysical data. MMS had more raw geological data than any one company for this sale, and its review team felt that MMS' geological interpretations were good to excellent. However, this does not necessarily mean that MMS' interpretations are correct. On the other hand, based on our review of MMS' geological analyses and on the MMS review team's report, it cannot be concluded that MMS' geological interpretation is any better or worse than industry's. Only exploration results will prove who made the correct interpretation.

Differences could also exist between industry and MMS on the oil and natural gas prices used in modeling to develop tract values. MMS' model projects the future oil and gas selling prices for the entire life of a hydrocarbon reservoir based on present prices. Thus, any error in the price inputs for the sale date will affect MMS' estimated tract values. The oil and gas prices used in MMS' planning for Sale 59 were developed in October 1981 by adjusting September 18, 1981, crude oil import prices to reflect (1) anticipated inflation, (2) the differing quality of oil in the sale area, and (3) the average transportation costs of imported crude oil. Natural gas prices were developed by converting the adjusted crude oil price to British thermal unit (Btu) equivalents of gas. In calculating the above adjustments, MMS anticipated that inflation would raise the base import price of crude oil. However, inflation did not occur for oil imports as anticipated but rather the price fell 6 cents per barrel by the time of the sale. Thus, the oil and gas prices used in the model were higher than the market prices at the time of the sale.

We do not know what oil and gas prices industry used in modeling for Sale 59. However, if they used the market price as of the sale date, we do not believe that the difference in this price and the higher price used by MMS would account for the large tract value differences because the difference between the two prices is less than 3 percent. Thus, we are reasonably convinced that the oil and gas prices used by MMS did not significantly contribute to the tract value differences and the high bid-rejection rate.

Other factors which reportedly were suspected as responsible for the tract value differences, such as risk and development costs, do not seem to be major causes for the high bid-rejection rate. Although these factors affected the calculation of tract values by Interior and industry, it appears that MMS and industry used comparable data for these factors in modeling for tract values. This

would rule out these factors as the major causes of the differences. Other factors which might have resulted in lowering industry's bids, and thus led to the high rejection rate by Interior, are discussed in chapter 4. However, these factors do not appear to be significant contributors to the tract value differences.

CHAPTER 4

OTHER FACTORS WHICH COULD HAVE AFFECTED TRACT VALUES

A number of factors other than those previously addressed in this report could have affected industry's bidding in Sale 59--for example (1) the alternative bidding systems used in the sale, (2) the use of the 10-year lease term, (3) environmental considerations, (4) industry's capabilities in deep water (and thus its willingness to bid high bonuses in the sale), (5) company bidding practices, and (6) the timing of Sale 59. It appears that these concerns were reflected by Interior and industry in a comparable way in planning for the sale. These factors, however, do not appear to have been significant causes for Interior's decision to reject bids in Sale 59.

ALTERNATIVE BIDDING SYSTEMS USED

The OCS Lands Act, as amended, requires that not less than 20 percent and not more than 60 percent of the area offered for lease each year be offered under a bidding system other than the traditional cash bonus, fixed royalty system. This requirement for alternative bidding systems was mandated as a means to increase competition in OCS lease sales. Three bidding systems were used in Sale 59--bonus bidding with a fixed 30-percent net profit share, bonus bidding with a 16-2/3 percent royalty, and bonus bidding with a 12-1/2 percent royalty. As shown in table 5 (see p. 29) 83 tracts were offered under the bonus-bid net profit share bidding system, and 166 tracts were offered under the bonus-bid 12-1/2 percent royalty bidding system. Four tracts were offered under the 16-2/3 percent royalty system. However, these tracts received no bids, thus they are not included in table 5.

The cash bonus, net profit share bidding system differs from the cash bonus percentage royalty system in that the Federal Government receives a fixed share of the companies' net profits, should production occur from the tract, instead of a fixed royalty. This system is intended to reduce the initial cash bonus for a lease in return for an increased share in later hydrocarbon discoveries. Two of the major reasons the net profit sharing system is utilized is to encourage competition and to increase small company participation in OCS leasing. As shown in table 5, however, the cash bonus bids per tract in Sale 59 were higher under the bonus-bid profit sharing system than under the bonus-bid royalty system.

Table 5

OCS Sale 59 Bids by Bidding System

	Bonus bid with net profit share	Bonus bid with 12-1/2 percent royalty
Tracts offered	83	166
Tracts receiving bids	41	57
Percent receiving bids	49	34
Average number of bids per tract	2.7	2.3
Number of high bids accepted	27	23
Number of high bids rejected	14	34
Average bid per tract of high bids	$5,934,902	$3,185,945
Average bid per tract of accepted high bids	$8,497,444	$4,023,913
Average bid per tract of rejected high bids	$9,928,571	$2,619,000
Total high bids	$243,331,000	$181,596,000
Total of all bids received	$319,725,000	$259,227,000
High tract bid	$41,467,000	$15,190,000
Number of companies bidding	19	20

Source: Based on BLM and GAO data.

In this sale, the particular bidding systems used do not appear to have made a difference in company participation in the sale. Nineteen companies bid for tracts under the net profit share system, while all 20 companies bid under the percentage royalty system. The average number of bids per tract was 2.7 for the net profit share system and 2.3 for the percentage royalty system.

The total of the high bids in Sale 59 under the net profit sharing system was $243,331,000 and $181,596,000 under the royalty rate system. The highest bid tract in the sale--number 161 at

$41,467,000--was under the net profit share system. The total of all bids under both systems, that is, both the high bid and all other bids for each tract, was $319,725,000 for the net profit share system and $259,227,000 for the percentage royalty system.

It is significant to note that higher bonuses were received on the bonus-bid net profit share tracts than on the bonus-bid fixed royalty tracts in Sale 59. The bonus-bid, net profit share bidding system theoretically should result in lower bonuses than the bonus-bid fixed royalty system in that the potential lessee probably will have a larger monetary obligation to the Government for any discovered resources under the net profit share system than under the fixed royalty system.

We also noted more of the 12-1/2 percent royalty tracts were rejected than tracts under the net profit sharing system--the latter system theoretically requires a higher return to the Government should production occur. Our analysis shows that the 12-1/2 percent royalty tracts were located in the northern and southern portions of the sale area where the greatest geological interpretation differences probably occurred.

Based on the above analyses, it does not appear that the use of alternative bidding systems had a negative impact on the bid rejection rate. In fact, tracts offered under the alternative system tended to fair better in the sale than tracts offered under a fixed royalty arrangement. In past reports, we have commented on the use and impact of the alternative bidding systems mandated by the OCS Lands Act Amendments of 1978. 1/ In our review of the South Atlantic Georgia Embayment Sale 43, we found that the alternative bidding system used in that sale attracted a significant amount of bidders and seemed to have worked well. Yet in our review of Southern California Sale 48, we found that smaller oil companies tended to avoid tracts offered under alternative bidding systems--which is the opposite effect hoped for under the alternative bidding approach. Sale 59 points out another inconsistency between bidding results where the alternative bidding system tracts received higher bonus bids than the fixed royalty bonus system tracts. We have underway a comprehensive review of the use and impact of the alternative bidding systems on several aspects of Interior's leasing program. This review, which will cover all lease sales in which alternative bidding systems have been employed, should be completed in early 1983.

1/See "Georgia Embayment--Illustrating Again the Need for More Data Before Selecting and Leasing Outer Continental Shelf Lands" (EMD-79-22, Mar. 19, 1979) and "Some Issues Affecting Southern California Outer Continental Shelf Oil and Gas Lease Sale 48" (EMD-80-47, May 5, 1980).

TEN-YEAR LEASE TERM USED IN SALE 59

The OCS Lands Act (section 8(b)), as amended, allows a lease term of up to 10 years if the Secretary of the Interior finds, "that such longer period is necessary to encourage exploration and development in areas because of unusually deep water or other unusually adverse conditions." A total of 234 tracts was offered under a 10-year lease term in Sale 59. Only 19 tracts were offered with a 5-year initial lease term--none of which received any bids.

The length of the primary lease is important in Sale 59 because of the very deep water tracts that were offered. Specifically, Interior believed that a 10-year lease term was necessary because the technology for production at water depths of 6,000 feet does not exist at the present time. This 10-year term would allow industry to drill exploratory wells and do delineation drilling, which was projected to take 5 years, and hopefully begin production on some tracts by the 10th year.

Other reasons cited by Interior for allowing the 10-year lease terms were that:

--There is a tight market for offshore exploratory rigs, with the number of rigs able to drill in Sale 59 depths being very small. It also takes 3 years leadtime to construct a deepwater drillship.

--Any successful exploratory wells will have to be followed by a greater than normal number of delineation wells in order to justify the extremely high development costs. Preliminary analysis suggests that an average of seven to eight such wells may be needed as opposed to the normal four to five. Also, each delineation well takes 4 to 5 months to drill once a ship is on site.

--There is no existing infrastructure or facilities such as pipelines, and production techniques will have to be developed. These time-consuming projects will take longer than a 5-year lease term.

--The predictability of a longer lease term is necessary to assure industry that they will be allowed enough time to do the job right.

--The possibility exists that if the lease term is not long enough, industry will lessen its risk by lowering bids to take this into account especially when hundred-million-dollar investments are concerned.

For Sale 59, 18 companies and one State made recommendations before the sale for a 10-year lease term.

We believe that the 10-year lease term probably influenced industry's bidding, but we found no evidence to suggest that the longer lease term contributed to the tract value differences or the high rejection rate.

ENVIRONMENTAL CONCERNS

On October 11, 1979, the Manager of the New York BLM office and the Geological Survey's Assistant Conservation Manager were briefed on the major environmental and technical issues raised in response to the notice of the Call for Nominations and Comments for Sale 59. Ten private organizations, 2 States, several Federal agencies, and a number of private individuals submitted comments on the proposed sale, and 14 oil companies nominated tracts.

Most of the comments received pertained to the distances from shore that OCS activities would take place. Most of the comments were not in favor of leasing near the shoreline, reflecting concerns over nearshore drilling. Various minimum distances from the shoreline were proposed, ranging from 25 miles to 50 miles. Other comments reflected concern about the impact of OCS activities on shipping, fishing, shellfish, and tourism, and the risk of an oil spill. Comments were also received which expressed reservations about offering tracts at depths greater than 200 meters, 1,000 meters, and 2,000 meters. In addition, one group pointed out the need for identification of tracts prone to seafloor slumping 1/ or instability, and also pointed out that eight areas were being proposed as sanctuaries under the Marine Sanctuary Program.

At a following meeting on November 14, 1979, Interior's Mid-Atlantic Technical Working Group reviewed the initial comments and some additional environmental information. The potential biological impacts and the technical limits of deepwater exploration and development were of particular concern at this meeting, including possible geological hazards. However, it was concluded that there were no technical or environmental constraints to the selection of any tracts nominated for the sale. No tracts were eliminated from the sale due to environmental impacts or geological hazards. The final environmental impact statement for Sale 59 supports this decision by concluding that most potential environmental impacts appear to be minimal.

Biological concerns

The Mid-Atlantic Technical Working Group discussed in detail all the concerns which had surfaced regarding possible biological impacts of hydrocarbon drilling for the sale area. These concerns included: disposal of drill muds, cuttings, and formation waters; plankton, Benthos (organisms which live on or in the bottom of

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1/Slumping is similar to earth slides on dry land.

bodies of water), and lobster productivity; impacts on coral populations; impacts on three species of endangered marine turtles and two species on the threatened list, six species of endangered whales, and one endangered anadromous fish (ocean-living fish which breed in rivers); impacts on breeding pelagic (ocean living) birds; impacts on adjacent coastal areas; effects on commercial fishing; and impacts on OCS, such as ocean dumping, unexploded munitions sites, undersea telephone cables, navigation lanes and shipping routes, and military uses. The working group decided that each of these concerns would either not be creating insurmountable problems or else would create negligible impacts.

Interior also obtained formal biological opinions from the U.S. Fish and Wildlife Service and the National Marine Fisheries Service which concluded that exploration activities were not likely to jeopardize the continued existence of any endangered or threatened species.

Interior developed stipulations to cover conflicting uses of the sale area. The stipulations covered concerns for biologically sensitive areas, transportation, drill muds and cutting disposal, geological hazards, and undetonated explosives detection.

Geological hazards

Geological considerations were also discussed by the the Mid-Atlantic Technical Working Group. These concerns included extensive erosion near the shelf break area and the possible presence of buried stream channels and gas seeps. Also, parts of the slope were considered to be prone to slumping.

A controversy arose, however, regarding the evidence of slumping. The question was whether the slumping dates to an early geologic age or the recent past. Preliminary data gathered by the U.S. Geological Survey indicate that it is unlikely that an entire 9-square-mile tract would be slump prone. Also, one agency presented a paper which stated that these slumps were at least 5,500 years old--this fact lessens the likelihood that the possible slump areas are a problem. MMS officials indicated that there was at least one place on each tract where drilling can take place. Also, the working group believed that unitized production facilities could be installed so as to greatly reduce any risk associated with these possible geological hazards.

Interior identified 62 tracts with possible geological hazards and 7 tracts with possible undetonated explosives. Any possible hazards were covered by setting stipulations on these tracts. Thirty-nine of these tracts were in the northern portion of the sale area, and most of the remaining tracts were in the southern portions. MMS officials noted that the increased costs to industry associated with these stipulations are insignificant compared with total exploration expenditures.

It is entirely possible that industry discounted the northern tracts more than MMS did because of the possible geological hazards.

For example, only one of indusry's 15 top-valued tracts had possible slumping, while 8 of MMS' 14 top-valued tracts had slumping and shallow fault possibilities. Also, in the northern area of the sale, none of the high bids on tracts with geological hazards was accepted. One industry official believed that the geologic conditions in the northern area would increase drilling problems. The sea bottom problems he saw caused him to view these tracts as less attractive. Another company which was a high bidder on many tracts in the north, however, said that it viewed the northern structure as the most prospective area of the sale. The common theme of most of our discussions with industry was "if we believe there are paying quantities of oil or gas under a tract, we will bid for it."

INDUSTRY CAPABILITIES IN DEEP WATER

A number of States expressed concern during the Call for Nominations and Comments period over whether industry was able to drill in deepwater areas. During this period, industry capability existed to do exploratory drilling in water depths of 6,000 feet and for production in 1,000 feet of water. The B-3 COST well drilled in 2,700 feet of water in the sale area was cited as an example. An open point was the capability to extend development technology subsequent to successful exploration. Working group officials believed that adequate incentives will induce the required investment in technological development.

The main reason for the lack of operational deepwater production facilities to date appears to be the disappointing results of deepwater exploratory drilling. Economic incentives have been nonexistent. Likewise, industry's estimate of the cost to explore and produce in deep water is not precise. Differing views of these costs could have contributed to the differences in MMS' and industry's tract evaluations. However, as noted earlier in the report, MMS used industry's projected exploration and production costs in arriving at its tract values.

Deep water exploration drilling is being done by industry. The deepest water drilled in to date for an exploratory well is 4,876 feet. This record was set in 1979 by Texaco Canada Resources, Ltd., at a site off Newfoundland. As of December 1981, there were only six drill ships in the world capable of operating in water depths greater than 3,000 feet, and only four capable of drilling in 6,000 feet of water.

The real potential problem in deep water is that there are no proven production systems for such depths. The deepest installed production platform lies in 1,025 feet of water in the Gulf of Mexico. It is a conventional, fixed-bottom, steel-support platform. However, industry has proposed, designed, and tested several concepts for deepwater production. Structures which have been tested in shallow waters include Exxon's guyed tower and Fluor Subsea Services' tension leg platform. Subsea production systems have also been tested.

Further testing of deepwater production technology is continuing. For example, Continental Oil Company is installing a tension leg platform in the North Sea to be operational in 1984. Also, a submerged tension leg platform is being developed for a four-well field in the Mediterranean under 2,300 feet of water. The latter concept utilizes existing production technology and places the platform 300 feet below sea level, eliminating most of the problems associated with stress on the drilling platform caused by currents and storms.

Pipeline laying capability exists for deep waters. The current world water depth record was set in 1980. Italy's Saipem, a dynamically positioned semisubmersible, installed a 20-inch gas pipeline in 2,000 feet of water in the Sicilian Strait. Several methods are projected to be feasible to even greater depths.

Questions were also raised by the Mid-Atlantic Technical Working Group about industry's ability to contain and clean up oilspills should they occur. Current technology limits cleanup operations to seas with wave heights of no more than 5 to 8 feet. The mid-Atlantic experiences wave heights greater than 5 feet between 30 and 40 percent of the time in winter and 10 percent of the time during the rest of the year. However, any oilspills in the proposed lease area have a minimal chance of contacting nearshore or onshore vulnerable resources since the probable trajectory is seaward, away from U.S. shores. If the Interior-preferred alternative of pipeline transportation of any oil found in the sale area is chosen, according to Interior, the probability that one or more oilspills will occur and contact land within 3 days is 0.07. For contacts within 30 days, the probability increases to 0.13. The risk to land using the pipeline alternative would be localized around the pipeline landfall, north of the Delaware Bay.

Since MMS and industry used essentially the same development costs and time frames in developing tract value estimates (see ch. 3), industry capabilities in deep water were probably not a significant factor in Interior's decision to reject such a high percentage of bids. Industry capabilities in deep water were probably more important in establishing the 10-year lease term.

OTHER FACTORS WHICH COULD HAVE AFFECTED TRACT VALUE DIFFERENCES

In the past, we have reported that industry bidding may not always be a reliable indicator of the oil and gas potential in a sale area. We were, however, usually referring to industry bids which were higher than MMS' values. In this sale, we have the opposite situation where MMS values were higher. Industry management takes additional factors into account in developing tract bids such as profits, cash flow, and worldwide oil and gas supplies. Thus, the final bids by industry reflect not only the perceived value of a tract but individual company economics and strategies. We were unable to obtain specific information from industry on how its bids were developed, thus we do not know how much the tract value differences were affected by company bidding practices.

Another factor which may help explain tract value differences is the timing of Sale 59. Sale 59 was held only 4 months after another sale with deepwater tracts in the Atlantic. We cannot substantiate how much of an effect this had, if any, on Sale 59; but it is probable that the close timing of the two Atlantic sales had an impact on the amount of capital industry was willing to commit to this OCS area. In this connection, Interior's new 5-year OCS leasing schedule may have an impact on industry bids in the future. This schedule anticipates more frequent leasing in deep-water and frontier areas. Unless industry is prepared to allocate more capital to OCS leasing, there may be fewer bids in future sales and/or less dollars bid for tracts offered for lease. Thus, it is possible that Interior's new 5-year leasing schedule could affect future sale revenues.

Both of these factors could have contributed to the tract value differences. However, we believe that it is unlikely these factors were significant contributors to the differences based on the evidence we reviewed.

CHAPTER 5

BONUS ESTIMATE BASED ON OPTIMISTIC VIEW OF HYDROCARBON POTENTIAL IN AREA

One and one-half months prior to Sale 59, Interior, for budgetary purposes, revised its estimates of the bonus receipts expected from the sale from $168 million to $3.6 billion. The difference in the estimates resulted from a revision in Interior's methodology for projecting bonus revenues. Under the new methodology, Interior's budget analyst used MMS' estimate of the hydrocarbon potential of the Sale 59 area and assumed that 100 percent of the economically recoverable hydrocarbons would be bid on. Previous budget estimates were based on past leasing experience in a sale area rather than on the projected hydrocarbon potential.

The sale results show that industry placed bids on tracts which, according to MMS data, contained 80 percent of the resources in the sale area. This indicates that industry and MMS were in close agreement on the general location of the potential resources in the sale area. But, as discussed in chapter 3, there was disagreement over the distribution of the resources among the sale tracts bid on and the total amount of potential resources in the sale area. MMS' higher estimate of the total amount of potential resources in the sale area resulted in the sale revenue estimates being far above industry's bidding.

BUDGET ESTIMATES CALCULATED UNDER PREVIOUS METHODOLOGY

Prior to October 1981 Interior estimated future-year lease sale bonuses by extending previous leasing experience from prior sales in a leasing area to the sales to be held in the area in the following budget year. For the Carter administration's budget for fiscal year 1982, Interior estimated that bonus receipts for Sale 59 would be $390 million. This was arrived at by assuming that (1) 1,080,000 acres would be offered in the sale, (2) 454,000 acres, or 42 percent of the offered acreage, would be leased, and (3) the average bonus per acre would be $1,132. The total of bonus receipts using these assumptions was $514 million. Subsequently, 76 percent of that total, or $390 million, was arrived at by assuming a reduction in the bonuses resulting from the use of alternative bidding systems. The Office of Management and Budget further adjusted Interior's bonus estimate for Sale 59 down to $160 million. This was arrived at by assuming that only 33 percent of the acreage would be leased and the average dollar amount per acre received would be $600. This differing assumption was based on prior leasing experience in the Atlantic.

In early 1981 Interior recalculated the bonus estimate for Sale 59 for the Reagan administration's fiscal year 1982 budget. The assumptions were that (1) 1,130,000 acres would be offered, (2) 33 percent of the acreage, or 376,000 acres, would be leased,

and (3) the average bonus would be $600 per acre. This calculation equals $224 million, which was reduced by 25 percent for alternative bidding systems to $168 million. This last bonus estimate was used until the new methodology was developed at Interior for the fiscal year 1983 budget.

BUDGET ESTIMATE UNDER NEW METHODOLOGY

In October 1981, Interior developed a new methodology for estimating OCS revenues. This new method--needed because of the new accelerated leasing program--utilizes the estimated hydrocarbon resource potential for the total planning area of a sale in making bonus estimates. The resource's market value is adjusted by discount factors for various economic and market risks and uncertainties.

At the time the new methodology was implemented, Interior had a number of sales for which planning was already in progress under the prior tract nomination approach, that is, the leasing process used by the previous administration. Sale 59 was one such sale; only the tracts that had been previously nominated for lease would be candidates for the sale--not the entire sale planning area as will be the case under Interior's planned program. The bonus estimates were recalculated for these sales, using the new methodology, to bring conformity to the budget estimates.

Under the new methodology, Interior estimated that the Sale 59 area contained 1.386 billion barrels of oil equivalent--that is, oil plus gas converted to the equivalent barrels of oil. Interior also calculated that the MROV (the maximum amount a bidder would pay to acquire a lease or the upper limit of the fair market value calculated by MMS) per barrel was $4.62. The value of these two estimates multiplied together ($6.4 billion) was then adjusted by a bid multiplier and a reserve multiplier to arrive at the anticipated bonus receipts, as of October 1981, of $3.588 billion. This estimate was further adjusted to reflect inflation at the time of the sale--in this case December 8, 1981--for a total anticipated bonus of $3.634 billion. Shown below is Interior's calculation for the Sale 59 bonus estimate made in October 1981.

Equivalent barrels	MROV per barrel	Bid multiplier	Reserve multiplier	Sale bonuses Oct. 1981	Sale bonuses Dec. 1981
(billion)				(billion)	
1.386	$4.62	0.5718	0.9800	$3.588	$3.634

The bid multiplier factor was used by Interior to account for the effects of competition and risk aversion in predicting bonus receipts. Interior assumes that under the new leasing program, competition will be less than under the prior program because more acreage will be offered. Risk aversion represents the uncertainties

of finding hydrocarbons. For Sale 59, Interior set the bid multiplier at 0.5718, which is the product of the adjustment for competition (0.6353) and risk aversion (0.90). Interior used the reserve multiplier factor to account for rejected bids. For Sale 59, Interior assumed that 98 percent of the reserves receiving bids would be accepted. Thus, the reserve multiplier was 0.98.

Under the new bonus-estimating model, it was assumed that 100 percent of the resources in the sale areas, defined under the prior tract nomination system, would be bid on if the sale was to be held prior to calendar year 1983. This contrasts with the assumption that sales held under the prior nomination system in calendar year 1983 and beyond would result in bids on only 75 percent of the resources in the sale area. Also, for nomination sales prior to calendar year 1983, as noted above, it was assumed that 98 percent of the high-tract bids would be accepted. But for calendar year 1983 and after, both under the traditional and areawide process, it was assumed that only 85 percent of the bids would be accepted.

Thus for Sale 59, it was assumed that 100 percent of the resources would be bid on and 98 percent of the bids would be accepted. If the sale would have been scheduled for calendar year 1983, the projected bonus would have been based on only 75 percent of the resources being bid on and acceptance of only 85 percent of the bids.

Our analysis of Sale 59 shows that 80 percent of the expected resources were, in fact, bid on, which indicates that industry and MMS were in close agreement on the general location of the potential resources as shown by the tracts bid on (see map 2.). According to MMS evaluations, 142 of the 253 tracts in the sale area contained economically recoverable resources. Of these tracts, 77 (54 percent) were bid on. Our analysis of MMS Sale 59 data shows that these 77 tracts, according to MMS data, contained about 80 percent of the total value of hydrocarbons in the sale area. But even though Interior and industry were in close agreement on the general location of the resources, Interior's estimates of the quantity of resources present in the area, as discussed in chapter 3, exceeded those of industry.

In addition to Interior's higher estimate of the resource quantity, two other factors inflated Interior's budget estimate. First, Interior's budget analyst used 8-month-old MMS hydrocarbon estimates in the October 1981 recalculation of bonus revenues. By utilizing the old data for Sale 59, Interior's projected bonuses for sale revenue-estimating purposes ($3.6 billion) was substantially greater than the final tract values calculated by MMS ($2.4 billion) for use in its bid acceptance process. Second, Interior's assumptions regarding the amount of resources that would receive bids (100 percent) and the bid-acceptance rate (98 percent) seems to have been overly optimistic. If Interior had used the 1983 and after nomination-type sales assumptions (that is, only 75 percent of the resources will be bid on, with 15 percent of

the bids being rejected) for Sale 59, the resulting bonus estimate would have been much lower. However, even if the assumptions for nomination-type sales in 1983 and beyond, and more current oil and gas estimates had been used, Interior's budgetary estimate would still have exceeded industry's bidding because of the differing views of the resource potential in the sale area.

CHAPTER 6

OBSERVATIONS, CONCLUSIONS, AND AGENCY COMMENTS

OBSERVATIONS AND CONCLUSIONS

Sale 59

Differing quantitative assumptions regarding a number of tract evaluation factors, such as risks, industry capabilities, development and production costs, oil and gas prices, and environmental risks, could have contributed to the differences in MMS' and industry's tract values for OCS Sale 59. For proprietary reasons, industry was unwilling to provide us with specific information needed to make a detailed analysis of how their bids were developed. Therefore, we cannot attest to the accuracy, preciseness, nor completeness of the data and assumptions industry used in planning for the sale. Thus, we are unable to make direct comparisons between Interior's and industry's detailed sale planning parameters. However, using unverified industry data we obtained through interviews with industry officials--and industry data obtained by Interior in its follow-up analysis of the Sale 59 bidding results--we were able to make comparisons of what we believe to be the more important sale planning factors which could have caused significant differences in the tract values.

Our analysis of the available information indicated that both Interior and industry used the same basic tract evaluation procedures used in past sales and used comparable data in developing their tract values--with the exception of the potential hydrocarbon estimates. Our analysis further indicated that Interior and industry were in basic agreement on the general location of the resources in the sale area, but not in agreement on the quantity of hydrocarbons or the distribution of the hydrocarbons among the sale tracts. It appears that Interior foresaw more oil and gas resources in the area than did industry. This difference in the total amount of potential resources is the most likely reason for Interior's higher tract values. In addition, Interior changed its methodology used to estimate Sale 59 revenues for budgetary purposes prior to Sale 59. The assumptions used resulted in significantly overestimated bonus receipts for the sale. However, even if more appropriate assumptions had been used, the bonus estimate would still have exceeded industry's bidding because of the differing views of hydrocarbon potential. Only through future exploration and drilling can Interior's or industry's estimates of the potential resources be validated for Sale 59.

New bid acceptance procedure implications

Interior's new accelerated leasing program presented to the Congress in May 1982 provided for a new approach for evaluating and accepting bids on offshore tracts. If this new approach had been used for Sale 59, it is likely that a greater percentage of

bids would have been accepted and more tracts leased. This raises the question of Interior's ability under the new bid acceptance process to assure that the Government receives revenues of an equal or better return from offshore leasing than it would under its traditional procedures--the procedures used in Sale 59--particularly at a time when a great deal more land is being offered for lease, and the outlook and market demand for oil and gas is uncertain.

The OCS Lands Act Amendments of 1978 establish a number of policies and procedures for OCS leasing, including expeditious development of OCS resources and assurance that fair market value is received for leased land and hydrocarbon production. Interior tries to balance these and other goals in developing and managing the OCS leasing program. As discussed in chapter 3, Interior in the past has relied on its own detailed tract-by-tract evaluations as the basis for evaluating and accepting industry high bids to ensure the receipt of fair market value. Under this system, Interior independently developed values for each tract based on extensive economic, geological, and engineering analyses prior to the sale.

Interior's proposed new approach provides for detailed post-sale evaluations of only a selection of tracts receiving bids based on presale screening criteria, such as the number of bids on a tract. If a tract passes the screening process, it is accepted without the detailed evaluations used in the past, that is, Interior will not independently calculate a minimum acceptable bid for the tract using its traditional detailed evaluation techniques. Under Interior's plan, competition and other marketplace factors, such as the availability of geological and geophysical information available to all bidders, will have a strong influence in determining which tracts are selected for detailed evaluation. This new approach will allow for a majority of the tracts to be accepted with only limited analysis.

Interior's two major reasons for changing the bid acceptance approach are to allow more land to be offered for lease, thus expediting energy development, and to eliminate the inefficiency and costs of evaluating tracts not receiving bids in a sale. In the past, Interior could only offer limited acreage for lease because of its inability to evaluate all potentially leasable acreage prior to a sale. This limitation, and the fact that industry usually bids on less than half the tracts offered, frustrated Interior's efforts to place more land under lease.

Interior's proposed new bid acceptance approach will allow for more land to be placed under lease. However, Interior may be lessening the assurance that the Government will receive revenues as high or higher than in the past from the offshore leasing program. Too much reliance on the marketplace value of a tract for the bid screening process may not give the Government revenues equal to what Interior would have determined as appropriate under its current bid acceptance process. In addition, as illustrated by Sale 59, the new

approach could result in Interior accepting industry's assessment of the resource potential in a sale area, rather than developing its own independent assessment, and thus relying on the marketplace values associated with those assessments to determine the acceptability of the bids. Many of the tract bids rejected in Sale 59 may not have received detailed evaluations and thus may have been accepted under the new process. Furthermore, under the new process it is possible that a substantial number of sale tracts selected for detailed evaluations could be rejected, while similar bids on those tracts not selected for evaluation are accepted. In such instances, a question of public confidence in the ability of the new process to assure that the Government receives fair market value for lands leased may emerge. This could severely affect prospects for the success of the new leasing program.

AGENCY COMMENTS

Interior raised two major points regarding our draft report. The first point focused on Interior's belief that we had inadequate support in the report for our conclusion that differences in the hydrocarbon resource estimates caused the differences in tract values and thus resulted in the high bid-rejection rate. Interior's second point was that we had incorrectly stated that the Department's proposed new bid acceptance process would result in 60 to 70 percent of the tracts receiving bids being leased without any evaluation.

We met with the Interior officials, who had prepared Interior's detailed comments on the draft report, to clarify and further discuss their comments on each of the above points. On the first issue, Interior officials stated that our report did not present an appropriately detailed comparative analysis of Interior's and industry's sale planning data and assumptions to draw the conclusion that the resource estimates were the causal factor for the differences in tract values. We explained that we had not provided detailed model comparisons between Interior's and industry's data in the report because we could not verify the accuracy, preciseness, and completeness of the industry data we obtained. Yet, we did review, based on the information we were able to obtain, all major factors which could have affected the calculation of tract values, such as risk, oil and gas resource estimates, and costs of development and production. (Throughout this review, no one at Interior disputed that the factors we analyzed were the major factors.) Our analysis of these factors, presented in detail in the report, showed that only one factor developed by Interior--the estimate of potential oil and gas resources--appeared to be significantly different from industry's. We believe that sufficient information and analysis of these factors is presented in the report to support our conclusion that Interior's estimate of oil and gas resources was the probable cause of tract value differences between Interior and industry. Also, we explained that we believed it improper to present Interior's sale planning data in the report alone. Industry's knowledge of this information, in our view, is not in the Government's best interest and could could affect company bidding in future sales in the Atlantic. We also pointed out that we had presented our conclusions

to MMS' regional sale evaluation officials prior to sending our draft report to Interior for comment, and that they had agreed with our conclusion. As a result of our follow-on meeting, Interior officials agreed with our conclusion that a difference in the potential oil and gas resource estimates was the most likely reason for the tract value differences.

Interior also took issue with our statement in the draft report that 60 to 70 percent of the tracts may be leased under its new proposed bid acceptance procedures without any evaluation. We recognize that under Interior's proposed procedures submitted to the Congress in May 1982, all tracts will be given some form of evaluation. Our point was that the sampled tracts, that is, tracts not passing the initial screening tests, will be the only tracts receiving detailed evaluations using the past evaluation techniques. We have clarified this point in the final report by using the term "detailed evaluations."

In our draft report, we proposed that Interior take appropriate steps to analyze the effects of using its new bid acceptance process to help assure its reliability and public acceptance. We suggested that the Secretary include this analysis as a part of the required annual leasing program review, when significant changes are made to the program, or as a supplement to the annual report on OCS activities to the Congress. We also proposed that the bid acceptance process be subject to widespread public review prior to its implementation to assure its successful use.

Interior did not respond to this proposal in its comments on our draft report but has taken positive action in response to most of our suggestions. For example, Interior has prepared a report on the results of several bid acceptance processes which it has shadow-tested. Also, Interior presented a seminar on fair market value (how the bid screening process would be used to achieve fair market value) at the OCS Advisory Board meeting held on December 13-14, 1982.

On February 22, 1983, the Secretary approved a new bid acceptance process to be implemented beginning with Sale 76, scheduled for April 26, 1983. Interior has no plans to solicit formal comments on its bid acceptance process prior to its implementation--which we had suggested should be done to enhance public confidence in the new system. Interior maintains that public comment has already been solicited on its new approach in that the Department invited public comments on several bid acceptance proposals through a Federal Register notice on February 5, 1982. The announcement came too late for a detailed evaluation and presentation of the process in this report. Our preliminary examination of the new process, however, indicated that it closely follows the conceptual approach proposed by the Department in prior policy statements. Thus, our discussion and concerns on the new approach, in our opinion, remain valid.

Interior suggested a number of technical changes to the report to improve its accuracy which we have, for the most part, incorporated in this report. The full text of Interior's comments, along with our annotated responses, is included in appendix II.

APPENDIX I

U.S. House of Representatives
Committee on
Merchant Marine and Fisheries
Room 1334, Longworth House Office Building
Washington, D.C. 20515

February 23, 1982

Honorable Charles A. Bowsher
Comptroller General
U.S. General Accounting Office
411 G Street, NW
Washington, DC 20548

Dear Mr. Comptroller General:

The Subcommittee on Panama Canal/Outer Continental Shelf (OCS) will convene its eighth in a series of legislative and oversight hearings on OCS-related issues on Tuesday, March 16, 1982. You or your designated representative are invited to testify at the oversight hearing, which will be held at 10:00 a.m. in room 1334 Longworth House Office Building, Washington, D.C.

The focus of this hearing will be twofold. First, to follow up on our January 21, 1982, field hearing in Houston, Texas, the subcommittee would like your views and comments on the December 18, 1981, report of the General Accounting Office, entitled "Pitfalls in Interior's New Accelerated Offshore Leasing Program Require Attention." Among other things, we request your comments on the following, with respect to the referenced report and the five-year leasing program:

**the implementation of environmental impact statement preparation and fair market value determinations under the new streamlining procedures;

**the Department of the Interior's funding and staffing capabilities to implement the proposed program;

**the ability of State and local governments to participate in OCS decision-making, and environmental impacts;

**the use of alternative bidding systems;

**the impact and advisability of awarding 10-year leases; and

**industry's ability to respond to the program and potential energy supply considerations (impact of the program in terms of increased amount of land leased).

Second, the subcommittee is requesting your comments on the Mid-Atlantic lease sale #59 held on December 8, 1981. The sale resulted in the Interior Department accepting high bids totaling $321,981,000 for fifty tracts. However, forty-eight high bids totaling $102,946,000 were rejected by Interior as being insufficient. All fifty leases, lying in between 3,000 and 7,000 feet of water carry 10-year lease terms. Among other things, the subcommittee would like your comments on the following:

**the competition factors involved in the sale;

**the fair market value considerations, resource evaluation, and any other factors involved in rejecting such a high percentage of the bids;

**the use of 10-year lease terms;

**the industry's capabilities to explore and develop such leases; and

**environmental considerations.

Pursuant to Rule III, Clause (A), of the committee rules, you are asked to have 75 copies of your written statement delivered to the committee at least 24 hours prior to the beginning of the hearing. Ten of those copies are to be delivered to the committee at least 48 hours prior to the hearing. A copy of Rule III, Clause (A), outlining additional instructions is attached.

Copies of your testimony should be delivered to room 542, House Annex II, U.S. House of Representatives, Washington, D.C. 20515, no later than 10:00 a.m. on Monday, March 15, 1982. For further information, please contact Janie Lawson at (202)226-3508.

The members of the subcommittee and I would like to express in advance our appreciation to you for taking time out of your schedule to appear before us. We look forward to your testimony.

With best wishes for you, I am

Sincerely yours,

CARROLL HUBBARD
Chairman
Subcommittee on Panama Canal/
Outer Continental Shelf

CH/jl
Attachment

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

OCT 27 1982

Honorable Charles A. Bowsher
Comptroller General of the
United States
General Accounting Office
Washington, D.C. 20548

Dear Mr. Bowsher:

Thank you for the opportunity to review the report entitled "Differing Views on Oil and Gas Potential Apparent Reason for Lesser Amount of Leasing and Revenues in Offshore Lease Sale 59." The Department of the Interior's comments on the report are included in the enclosure.

Sincerely,

Donald Paul Hodel

UNDER SECRETARY

Enclosure

COMMENTS ON GENERAL ACCOUNTING OFFICE DRAFT REPORT ENTITLED "DIFFERING VIEWS ON OIL AND GAS POTENTIAL APPARENT REASON FOR LESSER AMOUNT OF LEASING AND REVENUES IN OFFSHORE LEASE SALE 59"

INTERIOR COMMENT

"The Department believes that the GAO in preparing this report used a simplified approach to the evaluation of Outer Continental Shelf (OCS) oil and gas tracts offered for lease. The result is that the report does not accurately reflect the relationships among potential economically recoverable resources, costs, revenues (production profiles), and expected net present worths. Also, the report contains inadequate justification for the GAO to conclude that the differences in tract value estimates between Industry and the Department were due to differences in the estimates of the quantity of oil and gas present in the sale area."

[GAO comment: Based on a meeting with Interior officials (who had prepared Interior's detailed comments on the draft report) to discuss and clarify Interior's comments, Interior officials explained that their meaning of a "simplified approach" involved our use of the term "resource estimate" and the lack of detailed model factor comparisons in the draft report. We explained that our meaning of resource estimate in the draft report included both economically and noneconomically recoverable hydrocarbons. We have used the terms "potential resources" or "potential hydrocarbons" in the final report to clarify any ambiguity. Interior officials agreed with this definition and said that it satisfied their concerns. However, we explained that we have not provided detailed comparisons between Interior's and industry's sale planning data and assumptions in the report because we could not verify the accuracy, preciseness, and completeness of the industry data we obtained. Yet, we did review all the major factors, based on the information we were able to obtain which could have affected the calculation of tract values. And throughout this review, no

[See GAO note on p. 64.]

one at Interior has disputed that the factors we analyzed are the major factors. Our analysis of these factors shows that only one factor developed by Interior--the estimate of potential oil and gas resources--appears to be significantly different from industry's. We believe that sufficient information and analyses of these factors is presented in the report to support our conclusion that the reason for the differing tract values was the differing resource estimates of Interior and industry. We have discussed major factors in the report (that is, risk, cost, engineering design for production of a structure, etc.) in general terms based on the industry information we obtained in interviews with Industry officials and from MMS' files. We believe that our conclusion is the most likely explanation of the differences and is appropriately presented in this report. Also, we believe that it is improper to present Interior's detailed sale planning data in the report alone since industry's knowledge of this information, in our view, is not in the Government's best interest and could affect company bidding in future OCS lease sales.

At the meeting with senior Interior officials and staff, Interior agreed with our conclusion. They stated that they reviewed their presale evaluations and could find no other factors that could account for such major dollar differences.]

INTERIOR COMMENT

"Specific page by page comments on the report follow:

"pp. iii-iv- It is not true that under the Department's new evaluation system, 60-70 percent of tracts will be leased without any evaluation. As indicated in our submission to Congress on the 5-Year Program, all tracts will be subjected to an initial screen using selective criteria intended to eliminate tracts which would clearly be acceptable, even if they were evaluated. In addition, the Department is presently testing a second screen ("Comparative Evaluation") which would incorporate both an independent Government

assessment of pertinent resource and cost data as well as market information. This would achieve further efficiencies in the application of scarce evaluation resources (budget and personnel).

"Tracts which cannot be accepted following these initial screens will receive the conventional detailed Monte Carlo evaluation. While we have stated that about 35 percent would be a fair guideline for tracts reaching the third phase of evaluation, clearly the results of the first two screens may yield a greater or lesser percentage.

"Because of a change in the bid adequacy rules, it is true that more tracts would have been leased in Sale No. 59 using the new bid acceptance procedures. By using a new method for calculating the average evaluation of tract (the geometric mean instead of the arithmetic mean), nine more bids would have been accepted."

[GAO comment: We did not intend to imply that 60 to 70 percent of the tracts receiving bids will be leased without any evaluation whatsoever. Under the proposed new process all tracts will receive some form of evaluation. Our report has been clarified to reflect this. The degree of evaluation will vary between tracts however, with only selected tracts, based on a presale screening criteria, receiving detailed evaluations using the evaluation techniques that have been used in the past, that is, tract values independently developed by Interior based on extensive economic, geological, and engineering analyses. In the draft report, we presented the initial screening process as it was planned at the time of our review. This is the process that was submitted to the Congress on May 11, 1982, with Interior's proposed 5-year OCS leasing program. According to Interior, this plan may not be the final plan selected for use in the new program--several bid acceptance schemes are being reviewed. However, regardless of the the plan, Interior officials told us that they

will not be doing detailed evaluations for all tracts to assure receipt of fair market value as was done in the past. 1/

Interior also commented that by using the geometric mean, nine more tracts would have been accepted in Sale 59. We do not question Interior's specific numbers for Sale 59, which are based on a geometric mean rather than an arithmetic mean for calculating average tract bids. Since Interior used a detailed tract-by-tract evaluation in Sale 59, the use of a different method to calculate average tract bids would have a lesser effect on the number of tracts accepted, that is, the nine tracts cited. However, under its new procedures, only those tracts not meeting the acceptance criteria will receive a detailed evaluation and thus be subject to the geometric mean calculation. Tracts not subject to detailed evaluations using past techniques would be leased. This could be a far larger number of tracts than the nine hypothetically derived for Sale 59.

It is possible that the new process can assure receipt of fair market value and achieve efficient use of Interior's scarce resources. However, we believe that Interior may be lessening the assurance that the Government will receive revenues as high or higher than in the past from the offshore leasing program. Too much reliance on the marketplace value of a tract for the bid screening process may not give the Government revenues equal to what Interior would have determined as appropriate under its current bid acceptance process. In addition, as illustrated by Sale 59, the new approach could result in Interior's accepting industry's assessment of the resource potential in a sale area, rather than developing its own independent assessment, and thus relying on the marketplace values associated with those assessments to determine the acceptability of the bids.]

1/On February 22, 1983, the Secretary approved a new bid acceptance process to be implemented beginning with Sale 76, scheduled for April 26, 1983. The Secretary's announcement came too late for a detailed evaluation and presentation of the process in this report. Our preliminary examination of the new process, however, indicated that it closely follows the conceptual approach proposal by the Department in prior policy statements. Thus, our discussion and concerns on the prior proposal, as presented in this report, in our opinion, remain valid.

INTERIOR COMMENT

"p. 1 - Interior has historically rejected the high bids received on about 10 percent of the tracts receiving bids (2 percent of the total dollar value of the high bids) and not 10 percent of the high bids offered."

[GAO comment: Appropriate language has been added on page 1.]

INTERIOR COMMENT

"p. 2 - Sale No. 56 had 140 deep water tracts."

[GAO comment: Appropriate language has been added on page 2.]

INTERIOR COMMENT

"p. 8 - The statement concerning areawide sales v. increased leasing does not accurately describe the new program. The purpose of areawide sales is to allow industry to decide where to explore without being constrained by the Government's interpretation of area with hydrocarbon potential. If a company has a different interpretation of the area, they'll be free to pursue their ideas because the larger areas will be offered."

[GAO comment: We believe that even if industry is given more latitude to select the tracts offered for lease, it does not follow that industry will lease more land than it would under the prior tract nomination process.]

INTERIOR COMMENT

"p. 8 - The original call area was not offered to be bid on."

[GAO comment: (See previous GAO comment.) We do not intend the reader to believe that the original call area was offered to be bid on. We have made appropriate language changes to clarify this point.]

INTERIOR COMMENT

"p. 8 - Sale No. 59 was not nearly as successful as Sale No. 40 but showed a marked improvement over Sale No. 49. The term 'successful' should be defined."

[GAO comment: Appropriate language has been added on page 8.]

INTERIOR COMMENT

"pp. 10-12 - See earlier discussion (p. 50) regarding fair market value. p. 13 - See first comment regarding lack of supportive data for conclusion."

[GAO comment: See previous comment.]

INTERIOR COMMENT

"p. 13 - Hydrocarbon potential, in and of itself, is not translatable to tract value. Costs, technology, risk, and projected cash flow analysis (expenditures and revenues) are critical in determining expected net present worth. A tract with much higher resource potential may be worth less than another low potential tract because of the timing and amount of expected costs and receipts of revenues from production.

"Industry and Minerals Management Service (MMS) did not agree on which specific tracts had the greatest expected net present worth."

[GAO comment: We agree with the first paragraph above; however, in the draft report we were referring to potential or probable resources, not the economically recoverable resources. We have made appropriate changes for clarity.

While we agree with the second paragraph, we believe that the disagreement between industry and MMS is caused by differences in the estimated quantity and location of potential hydrocarbons.]

INTERIOR COMMENT

"p. 20 - The term 'discounted value of a tract' should read 'delayed value of a tract' if the tract is leased in the next sale which could be more than one year later."

[GAO comment: We have clarified the report regarding the timing of the discounting.]

INTERIOR COMMENT

"p. 20 - The major input factors indicated need revision. Suggest using the following:

-- all parameters needed to determine the volume of hydrocarbons, i.e., prospective area, pay thickness, porosity, water saturation, etc.

-- exploration, development, and operating costs

-- number and depth of exploratory, delineation, and development wells, number and type of production systems

--geologic risk

-- the market price of oil and gas and future expectations

-- bidding systems imposed."

[GAO comment: We have added appropriate language on page 20.]

INTERIOR COMMENT

"p. 20 - Structure resource estimates are not an input. Estimates of economically recoverable resources are an output. These estimates are based upon mapping, using geophysical data and geologic data derived from wells (both COST wells and lease wells) and analogs in producing areas."

[GAO comment: Appropriate language has been added on page 20.]

INTERIOR COMMENT

"The term 'fill-up rate' is incorrect. It should be the 'amount of fill-up' defined as the percent of the vertical closure (from crest to spill point) estimated to contain hydrocarbons. A range of probabilities for various fill-up percentages (i.e., a minimum, maximum, and most probable amount of fill-up) are determined and used to input a range of potential productive acres into the resource economic evaluation model for each hydrocarbon trap. By using a lower most likely and maximum fill-up percentage, MMS reduced the potential resource estimate for Sale No. 59 from what it would have been if it had used the older standard.

The reason given for the change in fill-up was because of the number of very large traps interpreted and the serious doubt that enough hydrocarbon would have been generated to fill the traps."

[GAO comment: Appropriate language has been added on page 21. We have elected to use rate in place of percentage as this was the commonly used terminology both industry and agency officials used during our review.]

INTERIOR COMMENT

"p. 21 - The exploration, delineation, and development scenarios represent an analysis of what a prudent operator would be expected to do given industry practices in the past and Government regulations. Production profiles are determined by the amount of hydrocarbons found, anticipated production rates and number of wells, and market prices (revenues) versus development and operating costs (recognizing such factors as drainage pattern,

"water depth, and possible instability of the substrata), taxes, and royalties (expenditures). Since industry's production experience does not include operation in water depths comparable to the Sale No. 59 area, selection of a production system is very speculative.

"The risk factors input by MMS into the evaluation model are geologic risk. More precisely, it is the probability of geologic success--the probability that the prospect being evaluated will contain hydrocarbons regardless of the quantity found. The probability of economic success--defined as the probability that the prospect being evaluated contains commercial quantities of oil and/or gas--is an output.

"The statement that Sale No. 59 risk factors were used in Sale No. 56 is not exactly accurate. The risk assessment used by MMS for input reflected their uncertainty of their total tract evaluation input. In Sale No. 59, the range of risk input was similar to that used for Sale No. 56. In general, input developed for the most prospective traps interpreted was considered less risky than the input used for evaluating the most prospective traps in Sale No. 56."

[GAO comment: Appropriate language changes have been made on pages 21 and 22 to reflect the differences between model input and output factors. We have clarified the report on our point that the factors used in Sale 59 were similar to those used in Sale 56 but slightly reduced.]

INTERIOR COMMENT

"p. 21 - It is incorrect to state that oil and gas prices were based on a 3-month historical average price. The oil price"

"is estimated on what similar crude would cost if imported to meet energy demands. To flatly state that there was a 20 percent increase in the gas and a 4 percent increase in the oil prices over prices used in Sale No. 56 is misleading. The different price of oil was based on different quality crudes for each sale. In addition, OPEC [Organization of Petroleum Exporting Countries] had increased, not decreased, the market price of oil from $32 to $34 per barrel in this period. Since gas prices are based on the oil price, without any adjustments for API (gravity) [1/] and sulphur content, it is possible for the gas price to be higher especially when there is a $2 increase in the price of oil by OPEC."

[GAO comment: Appropriate language changes have been made on page 21 to more accurately describe how the oil and gas prices used in the model were developed. Also, the reference to the oil and gas price percentage increases used by MMS in the Sale 59 model has been deleted. However, oil and gas prices used in the model (see p. 26) did not reflect the actual average prices paid for imported crude at the time of the sale, which were lower than Sale 56. The actual average crude import price was actually 6 cents less.]

INTERIOR COMMENT

"The MMS resource economic evaluation model uses a Monte Carlo technique to provide a range of possible resource economic values (net present worth values) for the prospect with the probability of each value occurring being a direct consequence of the data uncertainty."

1/An arbitrary scale adopted by the American Petroleum Institute to show the specific gravity of oils.

"The program also calculates a delayed MROV (DMROV) which is what the expected net present worth would be today if a tract was not leased until a later date. The length of delay period is determined by the next available sale in the same area. Thus, the term 'discounted by one year' should read 'delayed until the next proposed sale.'"

[GAO comment: Appropriate language changes have been made on page 22. See earlier GAO comment regarding the use of delayed versus discounted.]

INTERIOR COMMENT

"P. 21 - This discussion of bidding system is out of place. It implies that tract value is adjusted by the imposed bidding system after the values are discounted. The program handles the bidding system (royalty or profit share payments) being used during the cash flow analysis. No adjustments are made after determination of the MROV."

[GAO comment: Appropriate language changes have been made on page 21.]

INTERIOR COMMENT

"p. 23 - Should read 'August 1982' rather than 'July 1982.'"

[GAO comment: Sale 76 is now scheduled for April 1983. We have used this latest sale date in the report.]

INTERIOR COMMENT

"p. 23 - Suggest the following change: MMS more than doubled the development costs, increased operating costs by about 25 percent, decreased well spacing, increased number of production systems (platforms), decreased oil and gas production rates, and reduced the oil and gas recovery factors."

"However, the changes did not reduce the tract values to industry's high bid values."

[GAO comment: Appropriate language changes have been made on page 23.]

INTERIOR COMMENT

"p. 23 - Suggest the following change:

Here MMS tract values were generally lower than industry high bids, so industry later believed that the evaluation input developed for Sale No. 59 was reasonable since it did not represent a radical change from Sale No. 56 deep water tract evaluation input. The Sale No. 59 area was considered by industry and MMS to be more prospective than the Sale No. 56 area."

[GAO comment: Appropriate language changes have been made on page 23.]

INTERIOR COMMENT

"p. 24 - The term 'charge rate' should be 'formation pressure.'"

[GAO comment: An industry official used the term "charge rate," which we have explained in the report.]

INTERIOR COMMENT

"p. 24 - The GAO comments, 'MMS had incorrectly interpreted the resource potential in Sale No. 59,' yet everything in the next two paragraphs (unstable bottoms, canyons, possible production problems, and timing of production) discusses higher than normal costs and the reduced present value of production. The MMS evaluations also account for delays in production revenues and

"the lower present worths. These statements seem to suggest that MMS costs in these areas may have been too low, the delay to initial production--too short, and the rate of production--too high."

[GAO comment: The section in question refers to a comment from industry officials, not a GAO comment. The word "industry" has been added on page 24 to clarify this paragraph.]

INTERIOR COMMENT

"p. 24 - Change 'solidified' to 'stable.'"

[GAO comment: This change is not appropriate because the term was used by the industry officials who provided the comment to GAO.]

INTERIOR COMMENT

"p. 24 - Change to 'with a potential unstable bottom.'"

[GAO comment: See previous comment.]

INTERIOR COMMENT

"p. 25 - Tract value does not equate to the amount of recoverable hydrocarbons."

[GAO comment: The meaning of "recoverable hydrocarbons" was intended to read economically recoverable hydrocarbons. We have clarified our discussion of this point on page 25.]

INTERIOR COMMENT

"p. 25 - Changing the amount of fill-up in conjunction with 'minor' changes in costs, spacing, etc. does not prove that industry used a lesser amount of fill-up. These and other factors, specifically the exploration, development, and production scenarios, interact in a very complicated manner. High bids can be matched in any number of ways."

[GAO comment: This point was discussed with Interior officials who apparently were not aware of certain reevaluations done by other Interior groups. This point was dropped by Interior officials in a subsequent meeting with Interior to discuss their comments in detail.]

INTERIOR COMMENT

"An MMS official was able to determine postsale that one company may have used a lower hydrocarbon fill-up percentage than MMS in their evaluation. We are not aware of a postsale evaluation test using reduced fill-up percentages."

[GAO comment: See previous response]

INTERIOR COMMENT

"p. 26 - The oil prices were derived from the average U.S. price of imports weighted by volume. This price was adjusted upwards due to a $2 price increase announced by OPEC at its October 29, 1981, meeting. It was then adjusted for crude quality and transportation costs. Since none of the gas from Sale No. 59 is expected to be produced before decontrol, the starting landed price for gas was simply the Btu equivalent landed price of oil unadjusted for sulphur content and API gravity. The prices are tied to imports because OCS products must compete with foreign oil and gas. Imports are the next best substitute for OCS oil and gas."

[GAO comment: See previous GAO comment on oil and gas prices used in the model. (See p. 58.) In addition, we do not agree that gas prices should be tied to imported oil prices. Actual gas import prices or average gas purchase prices in the United States are more appropriate since these prices may or may not be tied to crude oil imports and reflect actual prices paid for natural gas in the United States.]

INTERIOR COMMENT

"[no page number] - We are not aware of an analysis by an MMS official using lower prices that indicated a 40 percent decrease in tract values."

[GAO comment: We have deleted the paragraph with the above quote in the final report because this analysis was not a formal agency analysis.]

INTERIOR COMMENT

"p. 28 - It is wrong to analyze the effects on bidding of the bonus bid-fixed profit share system without adjusting for expected underlying value."

[GAO comment: Our analyses of the bidding between bidding systems was a basic comparative analyses with no adjustments for value. Since the alternative system tracts faired the best, we did not expand our analysis any further.]

INTERIOR COMMENT

"p. 30 - Change 'Georgia Embayment' to 'Southeast Georgia Embayment.'"

[GAO comment: We have used South Atlantic Georgia Embayment to give the reader a more precise description of the location of the sale.]

INTERIOR COMMENT

"p. 33 - Suggest the following change:

'felt that unitization would decrease the number of production facilities and wells, therefore, greatly reducing the risks associated with operating in areas with potential geological hazards.'"

[GAO comment: We agree that the suggested change gives the reader more precise information. However, we have chosen to use the statement from the report prepared by the working group prior to Sale 59.]

INTERIOR COMMENT

"p. 33 - Suggest the following change:

Increased costs associated with these stipulations would be insignificant compared with total exploration expenditures."

[GAO comment: This change had been made prior to receiving Interior's comments, based on MMS officials recommendations.]

INTERIOR COMMENT

"p. 35, lines 3-9 - We question the validity of this statement."

[GAO comment: Interior objected to a statement concerning the theoretical and technical capabilities of a submerged tension leg platform being developed for production of oil and gas in extreme water depths. At a later discussion this point was dropped by Interior officials who claimed that the statement should not have been included in these comments.]

INTERIOR COMMENT

"p. 35 - If the surface waters move in a westerly to southwesterly direction, it would almost insure that spilled oil would move toward shore."

[GAO comment: Appropriate language changes have been made on page 35.]

GAO note: The page numbers cited by Interior in its comments have been changed to correspond with the page numbers in this report.

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