

MMS-VSD-EVB:93-0360  
Mail Stop 3920

Memorandum

To: Tom Fry, Director  
From: Associate Director for Royalty Management  
Subject: Transmittal of California Valuation Study

Our Valuation and Standards Division recently completed a study of the possibility of California crude oil undervaluation from 1986 forward. The objective was to determine whether oil postings were below market value for that period. Attachment 1 summarizes their analysis and conclusions, and Attachment 2 reviews their data sources.

The basic conclusions for 1986 to the present were that:

1. There is no clear or convincing evidence that oil posted prices were below market value or that they were invalid for royalty valuation purposes.
2. There is no clear or convincing evidence that the California oil market is noncompetitive.

While we found many instances where independent refiners and others paid prices above postings for the associated fields in specific circumstances, none of this information pointed to collusion or other anticompetitive behavior. Many of these cases may be attributed to short-term refinery needs causing premium prices to be paid for individual lots of oil. We found no tangible evidence equating price discrepancies in individual circumstances to undervaluation by the major integrated firms who post prices.

I look forward to your response.

bcc: RM Chron:93-0360  
RM Chron DC/LKWD (2)  
AD Chron  
VSD Chron (2)  
EVB Chron  
DAD-C Suspence  
LMS:RMP:VSD:EVB:DHUBBEARD:mkr:MS3920:275-  
7260:P:\USR\ECON\CALCOV.DIR  
Attachment:P:\ECON\CALIF3.A1  
Attachment:P:\ECON\CALIF4.A2  
Attachment:P:\ECON\CALBRIEF

ROYALTY MANAGEMENT PROGRAM  
INTERNAL WORKING DOCUMENT

Evaluation of Oil Posted Prices and Royalty value in California

Summary

The Royalty Management Program (RMP) has evaluated whether there is evidence that integrated oil companies in California posted oil prices below market value between 1986 and 1992, thus resulting in underpaid royalties. Our investigation found:

- / No convincing evidence that postings were below market value during the period in question, or that they were thus invalid for royalty purposes.
- / No convincing information for MMS to establish the California market as noncompetitive.

Background

In August 1993 MMS undertook a preliminary investigation of potential royalty underpayment by integrated oil companies operating in California. This issue was first addressed by MMS in 1988. The latest allegations of underpayment resurfaced after six of seven defendants named in lawsuits brought by the City of Long Beach, California (City), and the State of California (State) settled out of court, making payments and giving other considerations totaling about \$350 million. Our objective in conducting the latter study was to determine if there is reason to believe that Federal royalties have been underpaid because of artificially low posted prices in California.

Initially, we constructed estimates of potential undervaluation for all years between 1960 and 1992. These estimates were almost entirely based on documents and data provided by the legal counsel for the city and state. Although we were not able to substantiate the data then or later, the resulting potential underpaid royalty estimates led us to conclude that the matter needed further investigation.

### Earlier Investigation by MMS

In 1986, RMP staff investigated allegations of undervaluation of California crude by the integrated oil producers. At that time, RMP concluded that postings should continue to be the primary valuation basis. However, RMP's position could have been influenced by the timing of the investigation. This position was reached before the Ninth Circuit Court of Appeals reversed the District Court's decision that there was not enough evidence to go to trial and before five of six defendants in the Long Beach II.

Supply crises for individual purchasers can explain many of the sales we found at prices above postings. Even if their needs are not at crisis stage, independents may offer prices in excess of postings in order to assure continuous sources of supply.

For oil sold in the Elk Hills and Wilmington, investigation in 1991 after all of the firms but Exxon settled the State's and City's suits out of court. The RMP contacted DOJ about this investigation to see if anything could be learned from their findings. Ms. M.J. Moltenbrey, a trial attorney who worked on the case, informed us that DOJ felt that the "trail leading to the evidence was not fresh enough to pursue." She stressed that in weighing the possible cases to undertake, DOJ must evaluate each of its investigations and balance its resources against the chances of winning a case. The DOJ never took action against the companies involved in the Long Beach I and II trials.

### Conclusions

- / The MMS must reach the same conclusion it did in 1986: the evidence is insufficient to conclude that oil postings, at least over the period 1986 forward, don't reflect market value.
- / We found no convincing evidence that the integrated majors, or the California oil market in general, act noncompetitively.
- / We will continue our monitoring efforts in the future to verify that companies report royalty values at least at posted prices in California--and to look for evidence that postings are below market value.

ROYALTY MANAGEMENT PROGRAM  
INTERNAL WORKING DOCUMENT

## Review of Relevant Documents

We used a number of sources of information to investigate the allegations brought forth by the City of Long Beach (City) and the State of California (State). A review of the most significant sources of information is given below.

In addition to spot prices and sell-off data, we looked at evidence that was entered as testimony during the trials. The attorneys for the City and State (plaintiffs) hired economic consultants to provide analysis of the documents they had subpoenaed in the Long Beach I and II trials. For the first trial, the plaintiffs employed the services of the National Economic Research Associates (NERA). Innovation & Information Consultants Inc. (IICI), under the direction of Peter Ashton, prepared studies for the State and City for the Long Beach II trial.

## NERA Report

We received a copy of NERA's study, which was entered into evidence in the first trial and in the appeal. The study examines the California oil market for the period 1961-1977. The study concludes that there was significant undervaluation over this time period.

The NERA compared California posted prices to marginal refinery values for high and low gravity crudes for each of the major integrated firms' (defendants') refineries. The study also analyzed the linear programs used by these refineries to decide what crude to purchase as marginal stock to increase profits. After subtracting for refining costs, the additional value associated with heavy cruda vs. light crude showed that the heavy crude was more valuable as marginal refinery input because the economic gain associated with refining the heavy crude made it more profitable to refine than light crude.

The NERA analyzed the difference in marginal value for each of

---

Only a certain percentage of the major integrated firms' refinery input is not accounted for by internal supply, long-term contracts, or exchanges with other majors. The refiner bases its decision to purchase its additional needed input based on the profit it expects to make after running the crude through its refinery. This additional, or marginal, input has a value known as the marginal refinery value.

the years the trial encompassed. Documents referenced in the report reveal the integrated companies acted to avoid closing the gap between prices for high and low gravity crude oils. The fact that it continued to occur over 15-plus years suggested that collusive behavior existed. Company documents quoted within the report show that these firms shared crude acquisition plans with each other. They also exchanged oil among themselves and reimbursed one another for relative value differences at prices quite different from postings. The plaintiffs argued that if the defendants had acted competitively, the price for the heavy crude would have risen due to its demand as marginal feedstock and that the price disparity would have disappeared.

The scope of the study is impressive. The analysis relies heavily on information subpoenaed from each of the defendants in the trial. The NERA presents a strong case for at least tacit collusion by the defendants. The analysis is the most thorough of any of the documents we reviewed. However, the NERA report covers a period much earlier than the current study.

#### IICI Studies

The IICI performed an economic analysis by compiling information from the subpoenaed documents for the Long Beach II trial and for the remanded trial after the initial decision had been overturned. Mr. Peter Ashton of IICI is currently providing analysis for the appeal of the Exxon trial decision scheduled to be heard late in 1994. He claims that the market demonstrated widespread undervaluation for California production. He supplied us with four comparisons for the period 1981-1990 that he feels demonstrate this undervaluation.

#### Wilmington, Elk Hills & State Sell-off Premia

There was a consistent trend for independent refiners to offer auction premiums over and above the posted prices for oil in these areas.

#### Line 63 Spot vs. Buena Vista Delivered Price

Line 63, one of two pipelines transporting oil from the San

---

<sup>4</sup>Wilmington oil is produced from Wilmington Trend. It is the principal production involved in the Long Beach I & II trials. Part of the production comes from wells located in the City and part comes from State tidewaters just offshore. The Elk Hills Naval Petroleum Reserve is located in the San Joaquin Valley. Oil from all three areas is sold in sealed bid auctions. The bids are based on premiums to be paid above posted prices for associated fields.

Joaquin Valley to Los Angeles, became a common carrier in 1977. The Buena Vista field is located in the San Joaquin valley. Spot prices for commingled Line 63 oil in Los Angeles exceed the delivered price<sup>3</sup> for Buena Vista oil in Los Angeles. The higher spot prices might occur because part of the Line 63 oil is utilized to make up refinery feedstock deficiencies on short notice, whereas Buena Vista oil is generally marketed in contracts whose terms are unaffected by short-term refinery feedstock shortages.

#### Wilmington Posted Prices vs. THUMS Spot prices

The THUMS is a consortium of companies operating the State's offshore facilities in the Wilmington field. We compared Wilmington posted prices to THUMS spot prices. We found THUMS spot prices generally were higher. The THUMS spot prices represented a small fraction of the volume from the Wilmington field and can be considered the market margin.

#### Belridge Light (Lt.) vs. Louisiana Light Sweet (LLS) Posted Prices

Belridge Lt. is a relatively high-gravity California crude that leaves the San Joaquin Valley by pipeline. Production is transported north to San Francisco, south to Los Angeles, east to Bakersfield, and west to Morro Bay. Its postings were compared to LLS crude values. Though the gravity was the same, the price received for LLS was consistently several dollars higher per barrel from 1981 to 1991. Sulfur contents were similar.

None of these comparisons necessarily imply collusion or other improper behavior by the major integrated firms. The comparisons simply show some price disparities in specific circumstances, many of which may relate to short-term refinery needs.

#### Department of Energy Report

In 1987, Charles Shirkey and Robert Speir published an article in Petroleum Marketing Monthly raising the possibility of a trend in oil price undervaluation in California from 1980 to 1985. The study focuses on the years 1984-1985. It examines crude quality, Alaska North Slope oil in the California market, transport of

---

<sup>3</sup>The delivered price for Buena Vista crude is the field posted price plus the Line 63 pipeline tariff charge. Corrections have been made to offset the one degree gravity difference between Buena Vista oil (26 degrees API) and the average commingled mix (27 degrees API) transported over Line 63.

ROYALTY MANAGEMENT PROGRAM  
INTERNAL WORKING DOCUMENT

finished products, refinery margins, and operating costs. The paper concludes by emphasizing that even after accounting for the effects of these factors, California posted prices still are not explainable.

Chevron responded to the paper in 1987, saying that the competitive dynamics of the California market are not accounted for and that numerous omissions and inaccuracies riddle the study. Spair and Shirkey responded to Chevron's claims in another paper. This paper refutes point by point the claims made by Chevron. It analyzes the markets, effect of AHS crude, and refinery costs.

As a whole the Shirkey/Spair reports raise valid questions about the nature of the California oil market from 1980 to 1985. However, their suggestion that low posted prices may have resulted from anticompetitive behavior by major integrated companies is not based on any hard evidence tying collusive behavior to specific individuals--or, in fact, on any real evidence of anticompetitive behavior at all.

#### General Accounting Office (GAO) Study

The GAO published a report in September 1988, investigating whether posted prices in California were reflective of fair market value. The report does not assert that California postings are not representative of fair market value. It does concede that the posted prices seem to be lower than elsewhere, but suggests that the nature of the market may explain these differences. The GAO makes no recommendations.

#### Arthur Little Study

The Internal Revenue Service commissioned a study completed by Arthur D. Little Inc. in 1987. It examines the period 1980-1983 and concedes that the postings are low in relation to other markets because the major producers capture economic rent by controlling both posted prices and pipeline access. The study concludes that posted prices are valid because one-third of the transactions are between unaffiliated parties, and posted prices are used in these transactions.

#### Gunther Buerk Study

Gunther Buerk has acted as a consultant to the attorneys involved in the case for the City and State. He constructed pricing models based upon refinery netbacks. Mr. Buerk has drawn on his

ROYALTY MANAGEMENT PROGRAM  
INTERNAL WORKING DOCUMENT

experience working for Unocal from 1969-1984, where he served as Corporate Manager of Project Economics. He also directed the operations of several of their refineries. We cited his figures in our preliminary estimates.

**State Netback Model**

The State hired consultants to create a computer model to determine the net-back values for crude oil by factoring out the transportation and refining costs. When compared to posted prices upon which royalties are generally based, these net-back values are often considerably greater. The Royalty Management Program (RMP) examined the model in 1989. Our analysis questioned several assumptions made in this model. Specifically, the assumptions about refinery costs were too broad to allow the model to be used as a basis to calculate royalties. This model also suffers from its failure to encompass field-specific factors that affect value.

**Elk Hills Bonuses**

We collected bonus data for oil sold from the Naval Petroleum Reserve at Elk Hills. The data include prices received from 1986 to 1993. Virtually all of this oil was transported over line 63. This pipeline is operated as a common carrier. At least part of the premiums above postings for nearby fields can be explained by availability of the Elk Hills production to independent refiners who have limited sources of refinery feedstock. Also, the API gravities are greater for the Elk Hills crudes than for surrounding fields. Some additional value may be associated with its higher gravity because when it is mixed with low gravity crudes, pipeline companies can avoid the need to heat their lines.

**State and City Sell-offs**

The State and City have produced oil from the Wilmington trend since the 1920's. Mineral rights associated with the field are unitized and rest predominantly with the State. The City owns less than 10%. Individual private owners comprise 3% of the unit. The City acts as trustee for the State and has contracted with an operator to produce oil from Wilmington.

The State began a program in 1972 to market its offshore oil production. It based its contracts on posted prices and invited potential buyers to bid on a premium over the average of the posted prices in the field. Independents were the principal bidders.

We have data from the City listing the premiums paid over (under) the posted prices for the State/City sell-off oil over the period 1973-1989.

**Documents Describing the Three-Cut Exchange**

For the period 1961-1972, we have copies of court documents giving testimony on the so-called three-cut exchanges used in lieu of postings for inter-company transactions, with admissions by the defendants that the posted prices were not the true value of the oil. We have no evidence that similar documents exist for the period 1988 forward or that such transactions continued beyond the early 1970's.