

ACCOUNTING FOR MAJOR DEVELOPMENT COSTS INCURRED IN
DEVELOPMENT OF NEW OIL RESERVES

by

Dale N. Lyon
B.S., Kansas State University, Manhattan, 1960

A MASTER'S REPORT

submitted in partial fulfillment of the
requirements for the degree

MASTER OF SCIENCE

College of Commerce
KANSAS STATE UNIVERSITY
Manhattan, Kansas

1964

Approved by:

A handwritten signature in dark ink, appearing to read "W. Clark", is written over a horizontal line.

Major Professor

LD
2668
R4
1964
L 991
C 2.

INDEX

INTRODUCTION	1
EXPLORATION AGREEMENTS AND ACQUISITION OF LAND	4
ACCOUNTING FOR EXPLORATION COSTS	9
INTANGIBLE DRILLING COSTS	14
SUMMARY	19
CONCLUSION	26
ACKNOWLEDGMENT	28
REFERENCES	29

INTRODUCTION

This paper will discuss the different accounting procedures in use to account for the major development costs incurred by an oil producer in the exploration and development of new oil reserves.

The areas of the oil industry covered are the exploration and development costs, leasehold costs, and the intangible drilling costs. More specifically they are the geological and geophysical survey costs, the costs of leasing or buying the land upon which the well is drilled, the intangible drilling costs and any other costs incurred up to the point the well is completed, and the Christmas tree is installed.

The area which seems to cause considerable disagreement among accountants for these costs is whether to expense the costs or to capitalize them. Even among those who believe the costs should be capitalized there is disagreement as to what amounts should be capitalized.

An understanding of the alternative methods of accounting for the major costs incurred in the exploration and developing of new petroleum producing wells is essential to the understanding of financial statements published by businesses in the petroleum industry. Even though there are many alternative accounting procedures available to them, it is not necessary for the reporting companies to state in their financial statements what accounting methods they have used. It is extremely difficult to comprehend how an interested

third party can derive accurate and useful information from statements if he does not know what principles were used to obtain the reported figures. The matter becomes even more complex if the person is interested in a comparative analysis of statements of two or more oil companies.

"The most spectacular example of the flexibility of modern accounting is provided by the disparate handling of the oil industry. At present there are several alternative procedures, all 'generally accepted', that may be followed in accounting for the intangible costs of drilling productive wells---at least, in accounting to stockholders."¹

"It is common knowledge among oil company people and public accountants alike that deviations in accounting treatments occur between different organizations in the oil and gas producing industry. While most of these variations are concerned with the subject of capitalization versus expensing, there are lesser departures in accounting treatments affecting depreciation, depletion, inventories, overhead allocation, oil payments, finding costs of oil and gas, free-well agreements, and a host of other items peculiar to the oil business. It seems safe to say, therefore, that uniformity in accounting policies and practices is not a characteristic of the oil producing business in this country."²

-
1. T. A. Wise, "The Auditors Have Arrived," Fortune, December 1960, p. 148.
 2. C. Aubrey Smith and Horace Brock, Accounting for Oil and Gas Producers, p. 70.

The problem involved in this discussion is the widely varying amounts in the "Profit & Loss Statement" and the "Balance Sheet" obtained by the different methods. These figures are then relied upon by stockholders and other interested persons. To emphasize these discrepancies it is shown how each of the accounting methods discussed effect the operating statements. This will be done by showing financial statements of fictitious companies, all of which have the same income and have spent identical amounts in exploring for and drilling for oil. Each fictitious company will account for the costs under discussion in a different, but accepted, way. In this manner any difference in reported results can be attributed directly to the difference in accounting for the particular item being discussed.

EXPLORATION AGREEMENTS AND ACQUISITION OF LAND

The process of developing an oil well or a new oil field begins when the company becomes interested in a certain area of land. At first the company is interested in a large general area, but after performing exploratory work, it will divide the general area into separate smaller sections known as "Areas of interest." These "areas" constitute the land the company normally will try to buy or lease.

When the company buys the land it owns the mineral rights and also the surface of the land. It may do any exploratory work it desires and drill any wells it wishes so long as it conforms to government regulations. In a purchase of land the company has no alternative but to capitalize the cost. On the other hand, if it does not wish to purchase, or cannot purchase the land, there are numerous types of agreements, contracts and leases the company may use. The cost of these agreements, other than the lease, may be capitalized or expensed according to the whims of the company.

When the company has decided upon the general area it wishes to examine, it must first obtain permission from the land owners to explore the section to see what particular parts are suitable for drilling purposes---the "areas of interest."

It is possible that the company could negotiate a right-to-explore-only contract with the land owner. This contract gives the

company the right to conduct exploratory activities, but contains no provision for rights to lease acreage or to drill. In other words, the company has no agreement with the land owner to lease all or any part of the land. The land owner may enter into negotiation with other parties who may be interested in the land. The cost to the oil companies for this type of contract is generally very small, because the land owner benefits by leasing the land to the company if the company's preliminary work provides sufficient evidence to warrant further exploratory activities.

In wildcat areas where oil companies are starting to lease the available land, an interested oil company will try to purchase rights to explore-with-option-to-acquire acreage on specified property. This type of contract allows the company to do exploration work on the land and then to lease the areas it is interested in at a price per acre that was specified in the original "right-to-explore" agreement. This type of contract is more expensive for the oil company than the right-to-explore-only contract, because the land owner must agree to lease to the oil company the land it wishes at the agreed price. The land owner will charge more per acre for this agreement to compensate himself for loss of freedom to negotiate for a higher lease payment per acre, in case favorable exploratory results enhance the desirability of the land.

The lease between the landowner and the company is for a certain number of years, called the primary term, and as long thereafter as oil or gas is produced, called a secondary term. The owner is paid a cash bonus called a leasehold bonus and computed at an

agreed upon dollar amount per acre, for signing the lease. If the company has not started to drill a well within a specified time, generally one year, the company must pay the owner a certain sum of money per acre called a "delay rental." A delay rental must be paid the owner each year until the company drills a well. If the company does not drill, or start to drill, a well within the primary term of the lease, the lease expires and a new lease must be negotiated.

In a survey of 61 companies, conducted by Horace R. Brock³ in 1953, all reporting companies would charge to expense the costs incurred in securing a "shooting-rights-only" or "option-to-acquire-acreage" agreement with the landowner if the exploration results conducted on the land produced only negative results. However, the confusion begins when favorable results are obtained, for there are three different methods advocated for the handling of any costs incurred in the original exploration agreements. These three methods are:

1. Charge all costs to expense.
2. Capitalize those costs pertaining to acres leased, and expense those costs pertaining to acreage not taken.
3. Capitalize the entire option cost to any acreage selected, even though only a small portion is selected.

The companies that expense all the costs compare the payments for the agreements with normal and recurring geological and geophysical costs which they feel should be expensed. Another reason is to keep leaseholds as low as possible.

3. Horace R. Brock, "Petroleum Accounting," Journal of Accountancy, December 1956, 102:58.

The theory behind capitalizing the portion applicable to the "areas of interest" is that costs should remain attached to the acreage to which they apply, and costs applying to the acres not leased are considered the same as acreage leased and later abandoned. The reasoning then follows that the costs should be charged to a current expense account much the same as surrendered acres are charged to a surrendered lease expense account.

The majority who capitalize the full cost do so because they feel the payments for the exploration agreements were made to allow the company to explore large tracts in search of a few promising smaller areas, and therefore, the entire cost should apply to any acreage selected. The exploration agreements allow the operator to explore without the expense of leasing all the land. If the land had been leased, the leasehold bonus would have been capitalized so they argue that the costs of the agreements are in reality a part of the leasehold bonus and should be capitalized.

There seems to be full agreement that the cost of the leasehold bonus represents the costs of an acquired asset and as such should be capitalized. The method of accounting for the costs of any "delay rentals" paid is not fully agreed upon. The majority want to expense those costs but others prefer to capitalize them. The reason advocated for expensing the costs is that payment of delay rentals are a normal procedure and as such should be expensed. Those who favor capitalization say that delay rentals are a part of the investment just as is the original leasehold bonus. Many times the operator leases land and intends to hold it and pay delay rentals on

it until he is ready to develop the property. The company believes the total cost to be less this way than waiting and leasing the land when it is ready to develop it, therefore, the cost of the delay rentals should be capitalized. "This is a similar situation to the acquisition of a tract of real estate adjoining a city, holding this property for a time, paying taxes on it, and then developing it and subdividing it, and selling it as city lots. The fact that the oil industry involves an asset that is consumed in its use (a wasting asset or a disappearing natural resource) does not alter the accounting principals involved."⁴

4. Leo C. Haynes, "Accounting for Leasehold Costs in the Petroleum Industry," Journal of Accountancy, April 1942, 73:334

ACCOUNTING FOR EXPLORATION COSTS

There are three accepted theories of accounting for geological and geophysical costs:

1. Expense all exploration costs.
2. Expense all exploration costs that do not result in development of specific oil and gas reserves and capitalize all the costs that do result in the development of specific reserves.
3. Capitalize all exploration costs.

The second alternative is the most widely used, the third is rarely used, and about one third of the oil producers use the first method. When negative results are obtained, it seems that most companies charge the cost of the exploration to expense.

Mr. Horace Brock⁵ noted in survey taken in 1953 that smaller companies seek to maintain financial accounting records nearly identical to tax records. Because of this, smaller companies capitalize many items which are expensed by the larger producers. Also the larger producers place greater emphasis on conservative financial statements while some of the smaller ones desire to emphasize "growth" figures.

There are also mechanical reasons involved that influence larger producers to expense more items than smaller producers. The fewer transactions of the smaller operators involve less detailed work in allocation of costs and maintaining detailed records than that of the major producers with thousands of items to account for.

5. Brock, op. cit., p. 56.

Also many of the payments of relatively small size may be considered material by the smaller companies, while they would not be considered so by the larger companies.

Those who support the theory of expensing all exploration costs claim that a large portion of such costs are fixed and do not vary with the volume of exploratory work performed. They claim the costs are fixed because they keep a standard sized exploration crew employed at all times. No one is hired when there is more work to be done and no one is discharged when the work is slow. On the grounds that only the incremental costs should be capitalized, only a small part of the geological and geophysical costs would be charged to the asset account and it would be costly and time consuming to determine just what portion of the costs was incremental and should be capitalized. Therefore, many expensive man hours are saved by charging all the costs to expense rather than segregating them. Since the major portion of exploratory work is done on land not under lease, or on land upon which the lease has been dropped because the exploratory work proved it to be of no value, it would be of little use to capitalize the small amount of costs applicable to those tracts which were finally developed into oil producing properties.

It is accepted that current revenues and current expenses should be properly related, since exploration is undertaken to find new reserves of oil to replace those being exhausted, the costs are properly deductible in arriving at true current income. They feel that conservatism requires charging the costs to expense as they are incurred because of the doubtful worth of the properties to which they

apply. It is also feared that the capitalization of such costs could result in the payment of additional state taxes as many states levy taxes on the capitalized value of the firm.

If a fairly even rate of exploration work is carried on, there is little difference between expensing the costs or capitalizing them to be written off by amortization or when leases are surrendered.

The above argument is especially used when the company's own exploration crews do the work. The main parts of this argument become invalid if outside contractors are used, for it is then no problem to separate the various costs and assign them to the tracts of land to which they are applicable. The outside crews will be hired to do a certain job and the bill for their services will be submitted covering that work and the costs can then be assigned to the proper account. However, the following quote shows how companies segregate work performed by company employees and that by contractors.

"Because of the difficulty in allocating costs, most companies (approximately 76 per cent) expense all costs of their own exploration staffs even though they capitalize payments to outside exploration firms."⁶ This method of accounting for the costs does not seem to conform to the principle of consistency. In spite of this, the majority of oil companies follow the above practice.

The proponents of capitalizing costs of work leading to discovery or development of reserves say their theory is in accord with the generally accepted accounting principle that all expenditures

6. Smith, op. cit., p. 174.

leading directly to the acquisition of an asset should be capitalized as part of the cost of that asset. It is also in agreement with the accounting principle of properly matching costs and revenue. The capitalization of exploration costs leading to new reserves is in accord with this principle as the oil revenue and its related costs of finding and producing the oil would enter the income stream at the same time. If the costs were expensed they would enter the income stream far ahead of the revenue produced by the costs.

Consistency in accounting policy would require capitalization, for if undeveloped leases acquired as a result of the exploration work are capitalized, you should capitalize the costs of the exploration work on those leases to be consistent.

Capitalization of work leading to discovery and development of reserves is required for federal income tax purposes, so it is practical to capitalize them for statement purposes.

The people who favor capitalizing all costs use largely the same reasoning as proponents of capitalizing costs of work leading to discovery and development of specific reserves. The basic difference in the two viewpoints is the concept of the productive unit. Proponents of partial capitalization say the lease, pool or field is the proper unit, and hence charge the applicable unit for costs directly associated with discovery and development of oil and gas reserves.

Proponents of complete capitalization argue that the production or exploration program as a whole is the proper unit and all exploration activities are necessary for the discovery of any new

reserves; and unfavorable results must be expected as part of the over-all program. Under this method all expenditures would be grouped in one asset account and then amortized as a means of matching current expenses and revenues.

INTANGIBLE DRILLING COSTS

The tax regulations define intangibles as any cost incurred which in itself has no salvage value and which is incident to and necessary for the drilling of wells and the preparation of wells for the production of oil and gas. These expenditures expressly include "labor, fuel, repairs, hauling, supplies, etc." that are used:

1. "In the drilling, shooting and cleaning of wells.
2. In such clearing of ground, draining, road making, surveying, and geological works as are necessary in preparation for the drilling of wells.
3. In the construction of such derricks, tanks, pipelines, and other physical structures as are necessary for the drilling of wells and the preparation of wells for the production of oil or gas."

The cost of installing equipment necessary for the drilling of wells and the cost of installing equipment in the well in order to prepare the well for production are regarded as intangibles. The well is regarded as complete when the casing and a "Christmas tree" have been installed.

An example of the variances in financial statements caused by using different methods to account for intangible drilling costs can be dramatically shown by taking three assumed oil companies. Assume each has made \$200,000 income and has drilled one well with intangible drilling costs of \$100,000. All other costs are equal except the accounting procedure for intangible drilling costs. The

7. Clark W. Breeding and A. Gordon Burton, Taxation of Oil and Gas Income, p. 158.

reported net income, after taxes, for the three firms will be:

Company A-\$48,000; Company B-\$148,000; and Company C will report a figure of \$96,000.

The three different accounting methods used are all acceptable.

They are:

1. "Charge intangible drilling costs to expense in the year incurred.
2. Capitalize recoverable intangible drilling costs (gross) and credit the related income-tax reduction to a reserve, both the cost and the reserve being amortized over the productive life of the properties.
3. Capitalize recoverable intangible drilling costs (gross) and amortize to expense over the productive life of the properties."⁸

Applying the above methods to the companies in the example we find that Company A charges all intangible drilling costs against income immediately, this leaves \$100,000 as taxable income. After paying the 52 percent corporate income tax, the company would show a net profit of \$48,000; the same amount as shown on its tax return. Company B does not charge any intangible costs against income at the time the well is drilled. The intangible costs are capitalized and are shown as new assets of the period and not as expenses. Thus, the complete amount of tax, \$52,000, is paid and so reports a net profit of \$148,000. Company C also capitalizes the intangible drilling costs, but suggests in its published reports that it pays taxes on the full amount or a total of \$104,000 income tax, leaving a net income figure of \$96,000. Actually, it only paid \$52,000 in

8. Arthur Andersen & Co., Accounting and Reporting Problems of the Accounting Profession, p. 103.

tax, taking the other \$52,000, the amount of taxes saved because the intangible costs of \$100,000 were expensed for income tax purposes, as a reduction of the \$100,000 cost of developing the well. The net asset then appears on the balance sheet at \$148,000; this is charged against income, after taxes, over the useful life of the well.

Those favoring expensing the intangible drilling costs advance the following arguments.

1. "It is more conservative to charge off the costs currently as incurred.
2. Such costs do not represent assets having value.
3. The capitalization of such costs could result in the payment of additional state taxes.
4. Established companies with continuous exploration programs would have charges of about the same amount for such costs in any one year, whether they are deferred and amortized or charged to expense as incurred.
5. Capitalization of these costs for accounting purposes might lead to compulsory capitalization for income-tax purposes."⁹

Those who favor capitalization of the intangible drilling costs say "it is generally regarded that all costs incurred in the development of a productive asset should be capitalized as part of its total cost. On this basis there appears to be no more theoretical support for expensing the intangible costs incurred in drilling and equipping a producing oil well than for following an identical procedure in the construction of a factory or an office building."¹⁰

9. Ibid., p. 109.

10. Brock, op. cit., p. 200.

These same individuals contend that if historical cost accounting is used, the cost of productive wells should be capitalized and amortized against production from those wells. If intangible drilling costs are expensed in the year incurred, the costs of the wells thus developed will be charged against revenues produced by other properties. The revenues from the wells developed this year will be produced in future years. There will be no proper matching of revenue and expenses. Capitalization of intangible drilling costs will give a more accurate investment-profit ratio, for omitting these costs would result in an understatement of investment actually employed in productive assets.

Those who favor capitalizing the intangible drilling costs and crediting the related income-tax reduction to a reserve contend: "The matching of related costs and revenues logically requires that the portion of all costs, including exploration costs, applicable to the oil and gas currently produced be charged to expense in the period of production. The remainder of such exploration costs should not be charged to expense as incurred, but should be capitalized, net of the current income-tax benefit, and charged to operations as a part of the total cost in the future periods in which the discovered oil and gas is produced."¹¹

Expensing the intangible drilling costs ignores the real capital nature of those costs, and results in financial statements that do not show the total cost of the oil and gas reserves or of the current production from those reserves.

11. Andersen, op. cit., p. 108.

If the costs are expensed as incurred, profits are reduced or losses are shown in the early exploratory years, because a substantial portion of the costs then being charged off relates not to the income of the current period but to the income to be derived from future production of oil and gas.

"The opportunity of management to control such expenditures carries with it an equal opportunity to control the reported net income for the enterprise. For instance, an oil-producing company that expenses intangible drilling costs and shows a satisfactory income from its regular producing operations, can "drill up" all its regular income by the simple expedient of drilling more than the usual number of new wells."¹²

12. Howard F. Stettler, Auditing Principles, p. 409.

SUMMARY

The three principal development costs have been explored, and the reasons behind each accounting technique explained. It seems that an example showing the effects of the different accounting techniques on the financial statements will help to exemplify the main problem under discussion, namely, the distorted and non-comparable financial statements.

For the example three fictitious companies are used; Company A, Company B and Company C. Assume that each has a gross yearly income of \$500,000 and pays income tax at the 52% rate. All other statistics of the companies are equal except each will account for the costs of developing a new well by different methods.

The companies had shooting-rights-only agreements with the landowners of 20,000 acres. The agreement cost \$1.00 per acre or \$20,000 total. A preliminary survey was performed at a cost of \$5.00 per acre for a total cost of \$100,000.

The preliminary survey revealed two different areas of interest of 720 acres each. Both of these were leased for \$7.00 per acre (total cost \$10,800) and a detailed survey was conducted on each lease for a cost of \$20.00 per acre, total cost of \$28,000. One well was drilled with intangible drilling costs of \$100,000. expected life is ten years.

The following chart is a listing of the individual costs used in the example

Exploration costs:	per acre	total acres	total cost
Exploration agreement	\$ 1.00	20,000	\$ 20,000
Preliminary survey	5.00	20,000	100,000
Lease	7.00	1,440	10,080
Detailed survey	20.00	1,440	28,800
Intangible drilling costs			<u>100,000</u>
			<u>\$258,000</u>

Company "A"

1. Exploration agreements: Expense costs of exploratory agreements in the current year.
2. Exploration costs: Expense all preliminary and detailed survey costs in the current year and capitalize leasehold bonus payments.
3. Intangible drilling costs: Expense all intangible drilling costs in the current year.

Current year Profit and Loss Statement:

Gross Income:		\$500,000
Deduct development expenses:		
Exploration agreement	\$ 20,000	
Preliminary survey	100,000	
Detailed survey	28,800	
Intangible drilling costs	<u>100,000</u>	<u>248,800</u>
Income before taxes		<u>\$251,200</u>
Deduct 52% income tax		<u>130,624</u>
Income after tax		<u>\$120,576</u>

Second and following years Profit and Loss Statement:

Gross Income:		\$500,000
Deduct expenses:		
Amortization of leasehold		<u>1,008</u>
Income before taxes		<u>\$498,992</u>
Less 52% income tax		<u>259,476</u>
Income after tax		<u>\$239,516</u>

Current year Balance Sheet accounts:

Lease	\$10,080
-------	----------

Second year Balance Sheet accounts		
Lease	\$10,080	
Reserve for amortization		\$1,008
Third year Balance Sheet accounts		
Lease	\$10,080	
Reserve for amortization		\$2,016

Company "B"

1. Exploration agreements: Segregate the costs, capitalize those pertaining to acreage leased and expense those costs pertaining to acreage not taken.
2. Exploration costs: Expense all exploration costs that do not result in development of specific oil and gas reserves and capitalize all the costs that do result in the development of specific reserves.
3. Intangible drilling costs: Capitalize recoverable intangible drilling costs (gross) and credit the related income-tax reduction to a reserve, both the cost and the reserve being amortized over the productive life of the properties.

In the example the reserve was not set up, rather the asset was capitalized at a figure net of income-tax reduction.

	to be capitalized	to be expensed
Exploration agreement		
1440 acres at \$1.00 per acre	\$ 1,440	\$ 18,560
Preliminary survey		
1440 acres at \$5.00 per acre	7,200	92,800
Lease		
1440 acres at \$7.00 per acre	10,080	
Detailed survey		
1440 acres at \$20.00 per acre	<u>28,800</u>	
	\$47,520	<u>\$111,360</u>
Intangible drilling costs	\$48,000	
These costs are capitalized		
net of income-tax reduction		
Intangible drilling costs	\$100,000	
income tax saving	<u>52,000</u>	
net capitalizable value	\$ 48,000	

Current year Profit and Loss Statement:

Gross Income:		\$500,000
Deduct development expenses:		
Exploration agreement	\$18,560	
Preliminary survey	<u>92,800</u>	<u>111,360</u>
Income before taxes		\$388,640
Less 52% income tax		<u>202,093</u>
Income after taxes		<u>\$186,547</u>

Second and following years Profit and Loss Statement:

Gross Income:		\$500,000
Deduct expenses:		
Amortization of leasehold costs		<u>4,752</u>
Income before taxes		\$495,248
Less 52% income tax		<u>257,529</u>
Income after taxes		<u>\$247,719</u>
Less amortized intangible costs		<u>4,800</u>
Adjusted net income		<u>\$232,919</u>

Current year Balance Sheet accounts	
leaseholds	\$37,440
intangible costs	48,000

Second year Balance Sheet accounts	
leaseholds	\$37,440
Reserve for amortization	
Intangible costs	48,000
Reserve for amortization	4,800

Third year Balance Sheet accounts	
leaseholds	\$37,440
Reserve for amortization	
Intangible costs	48,000
Reserve for amortization	9,600

Company "C"

1. Exploration agreement: Capitalize the entire option cost to any acreage selected, even though only a small portion is selected.
2. Exploration costs: Capitalize all exploration costs.
3. Intangible drilling costs: Capitalize recoverable intangible drilling costs (gross) and amortize to expense over the productive life of the properties.

Current year Profit and Loss Statement:

Gross Income:	\$500,000
Deduct exploration expenses:	
All expenses capitalized	<u> </u>
Income before taxes	<u>\$500,000</u>
Less 52% income tax	<u>260,000</u>
Income after taxes	<u>\$240,000</u>

Second and following years Profit and Loss Statement:

Gross Income:	\$500,000
Deduct expenses:	
Amortization of Leasehold	<u>25,600</u>
Income before tax	<u>\$474,400</u>
Less 52% income tax	<u>246,688</u>
Income after tax	<u>\$227,712</u>

Current year Balance Sheet accounts:

Leaseholds	\$156,000
Intangible drilling costs	100,000

Second year Balance Sheet accounts

Leaseholds	\$156,000	
Reserve for amortization		\$15,600
Intangible drilling costs	100,000	
Reserve for amortization		10,000

Third year Balance Sheet accounts

Leaseholds	\$156,000	
Reserve for amortization		\$31,200
Intangible drilling costs	100,000	
Reserve for amortization		20,000

Comparison of Financial Statement Figures

	"A"	"B"	"C"
Report Net Profit:			
Current Year	\$120,576	\$186,547	\$240,000
Second Year	239,516	232,919	227,712
Third Year	239,516	232,919	227,712

Balance Sheet accounts: Net.

Current Year			
Leaseholds	\$ 10,080	\$ 37,440	\$156,000
Intangible costs		48,000	100,000
Second Year			
Leaseholds	\$ 9,072	\$ 33,696	\$140,400
Intangible costs		43,200	90,000
Third Year			
Leaseholds	\$ 8,064	\$ 29,952	\$124,800
Intangible costs		38,400	80,000

It would seem that Company A, which expensed all the costs, shows an absurdly low income in the current year and too high an income in the following years. This is caused by improperly matching of costs and revenues. The large amount of expenditures which were charged against the current year's income produced no revenue in the current year, rather, all the revenue will be produced in future years when there are no costs left to be charged against it. Therefore, in those years too large of an income will be shown. This seems to be incompatible with the principle of matching costs and revenues.

The accounting methods used by Company B also show a depressed net income in the current year, but the figure obtained still gives a more accurate current earnings figure than expensing all the costs. Even when the costs applicable to the areas placed under lease are capitalized; it seems that, similar to expensing all costs, it is still inconsistent with the accounting principle of matching costs and revenues.

It has been said by some that for a cost to be an expense it must have been incurred for the purpose of producing revenue. If it was not incurred to produce revenue it must have been incurred in the production of an asset, and should be capitalized. Using this reasoning, it does not appear likely that an oil company would be trying to produce current revenue by exploring ground to find a site suitable for drilling a well. It would seem they were incurring these costs for the purpose of producing an asset which in turn would yield future revenue.

Looking at the exploration agreement and survey costs from this viewpoint it is apparent they should be capitalized rather than expensed. There are those who say all the costs should not be capitalized for there will be insufficient production to offset all the capitalized cost. This theory seems tantamount to saying, we had an operating loss this year so let's charge some of the current expenses to retained earnings so it will appear that we made a profit. If the cost of an asset is greater than the revenues produced by that asset it seems the "Profit and Loss Statement" is where this deficit should logically be shown. The facts should not be obscured by charging part of the costs off against unrelated revenues.

There would seem to be little difference in capitalizing the gross intangible drilling costs for amortization over the life of the well, or capitalizing them net of any tax savings. This would be a matter of company choice, but the method used should be disclosed by footnote so third parties will be aware of the method used.

CONCLUSION

Capitalizing all development costs and amortizing them over the life of the asset, either by straight line or unit of production, produces the most accurate financial statements. The following arguments are cited in favor of full capitalization:

1. It is generally regarded that all costs incurred in the development of a productive asset should be capitalized as part of its total cost.
2. Capitalization is in harmony with historical cost accounting.
3. Capitalization of these costs provides a proper matching of costs and revenues. Expensing all or a portion of the costs in the year incurred does not provide a proper matching of the costs and revenues.
4. Total costs for exploration agreements should be capitalized. Exploration agreements are used to explore large tracts of land with out the cost of leasing. If the land had been leased rather than being secured by an exploration agreement, the cost of the lease would have been capitalized. In reality it would seem that the costs of the agreements are a part of the leasehold bonus and should be capitalized.
5. Capitalization of development costs gives a more accurate investment-profit ratio. Omitting these costs would result in an understatement of investment actually employed in productive assets.
6. Expensing the exploration and development costs ignores the real capital nature of those costs, and results in financial statements that do not show the total cost of the oil and gas reserves or of the current production from those reserves.

Delay rentals are paid to delay the time when the operator must drill a well or lose the lease. As many operators lease land

with the expectations of paying the necessary delay rentals until some future date when a well will be drilled, it would be better to capitalize the costs of the delay rentals rather than expensing them in the current period. If the company waited until they were ready to lease the land, the cost of the lease would more than likely be greater than the combined cost of the earlier lease and the delay rentals. Also, it is difficult to visualize how a delay rental can be conceived to be a current expense charged against revenue produced from wells drilled in prior years. It is more a cost incurred to develop an asset which will produce future revenues and as such should be capitalized.

There are many who would disagree with the author's conclusions and recommendations, in fact the majority believe delay rentals should be expensed rather than capitalized.

"A few companies are now capitalizing a substantial portion of the exploration costs."¹³ This quote written in 1962 indicates that there is a swing toward capitalization, for in the 61 companies surveyed by Mr. Brook in 1953 there were no companies capitalizing all costs at that time.

13. Andersen, op. cit., p. 107.

ACKNOWLEDGMENT

I wish to express my deepest appreciation and gratitude to Professor W. J. Clark, C.P.A. for his encouragement and aid which rendered this report possible.

REFERENCES

- Arthur Anderson & Co. Accounting and Reporting Problems of the Accounting Profession, Second Edition, 1962.
- Breeding, Clark W., and A. Gordon Burton. Taxation of Oil and Gas Income. New York: Prentice Hall, 1954.
- Brock, Horace R. "Petroleum Accounting." The Journal of Accountancy, December 1956, 102:53-67.
- Brock, Horace R. and C. Aubrey Smith. Accounting for Oil and Gas Producers. Englewood Cliffs, N. J.: Prentice-Hall, 1959.
- Ford, Presley S. "Accounting for Intangible Drilling and Development Costs of Oil and Gas Wells." Selected Papers 1955, Haskins and Sells. 1956.
- Haynes, Leo C. "Accounting for Leasehold Costs in the Petroleum Industry." The Journal of Accountancy, April 1942, 73:327-339.
- Lenhart, Norman J., and Philip C. Derfliese. Montgomery's Auditing. New York: The Ronald Press Company, 1957.
- Robb, Thomas C. "Geological and Geophysical Exploration." The Arthur Young Journal, October 1959, 7:12-26.
- Robb, Thomas C. "The Exploration Department of an Integrated Oil Company." The Arthur Young Journal, July 1960, 8:20-32.
- Stettler, Howard F. Auditing Principals. Englewood Cliffs, N. J.: Prentice-Hall, 1961.

ACCOUNTING FOR MAJOR DEVELOPMENT COSTS INCURRED IN
DEVELOPMENT OF NEW OIL RESERVES

by

Dale N. Lyon

B.S., Kansas State University, Manhattan, 1960

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the
requirements for the degree

MASTER OF SCIENCE

College of Commerce

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1964

ABSTRACT

The oil industry is well known for its lack of uniform accounting principals. Because the nature of the petroleum industry is producing a wasting asset with high development cost, many accountants believe the oil producers should be allowed greater leeway in their accounting methods.

Three generally accepted accounting methods for accounting for the major development cost in developing new oil reserves have developed.

1. Expense all costs in the current year.
2. Capitalize those costs applicable to the acres leased, and expense those costs applicable to acres not leased. This is not applicable to intangible drilling costs.
3. Capitalize all costs. Intangible drilling costs may be capitalized gross or be capitalized net of income tax savings arriving from the costs being expensed for tax purposes.

This paper discusses the three major development costs, exploration agreements, exploration costs and intangible drilling costs; and the application of the above accounting methods to those costs.

When examples are used, they show that expensing all the costs in the current year causes an abnormally large decrease in the current year's income. Income of future years is abnormally high because the costs applicable to the revenue being produced have already been charged to expense in prior years. This method violates the accounting principal of matching costs and revenues.

Capitalizing the costs that are applicable to the areas developed and expensing the remainder is unsatisfactory for the same reasons discussed above. The costs that were incurred in exploring many acres to find the few acres suitable for development were not incurred to produce current revenue. They were incurred to develop an asset that will produce revenue in the future and so are capital expenditures and should be capitalized.

The intangible drilling costs should also be capitalized for the same reasons. It would seem to make little difference if they are capitalized gross or net of income tax saving. The method used should be stated in the statements.

All the costs incurred in the development of new reserves should be capitalized and amortized over the life of the asset by straight line method or by unit of production, in this instance per barrel of crude oil produced. This provides a proper matching of costs and revenues and the financial statements of the current and future years are not distorted as they are by use of the other accounting methods.

The adoption of a uniform accounting system would give third party users of the financial statements more useful information and would allow them to compare different oil producers financial statements. This is nearly impossible under the present system because of the many different accounting systems used.

Dale N. Lyon