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Accounting for Oil Producers

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MAN has, through all the ages, in his constant search for hidden treasures, dug deeply into the earth. Petroleum, one of the most valuable of the treasures of the earth's storehouse, has been known to man since before recorded history. Its wonders are described in the most ancient legends. It has been said that the Arabs carried the liquid treasure from the famous springs of Hit on the River Euphrates to their imperial city, and with it lighted the lamp of Aladdin.

The accountant must apply the principles of accountancy in recording the values of many undertakings. To do this successfully, he must know the physical aspects of the operation. It is indeed a stupendous task which confronts the accountant to know something of the physical components of all the operations of our commercial world. He succeeds by applying general principles to particular problems. The production of crude petroleum is a mining operation, and as such comes under the established procedure for recording the accountability for wasting assets or values. It is recognized that, in particular, mining accounts must serve three purposes: Record development, which is really construction, record production, and costs of operation.

By applying, therefore, the principles, which we have learned by experience and training, governing the requirement of establishing a true cost to make, we find that the accounting requirements of an oil producer contain no profound and unknown theories of accountability, and that during development the accounts should be so drawn as to establish the equation: Material + Labor + Burden = Cost of Development.

The product comes from the well ready for delivery or sale. Thus the producer's accounts recording cost to operate are simple and will be so drawn as to establish costs of "lifting" and careful statistical records of oil produced and sold.

Before income and excess profits taxes became such an important factor to the business world, it was considered unnecessary to carefully detail the construction costs of the oil producer. He was content if he knew the unitemized cost of a lease or well, against which he figured that the production from the well would, in a certain period, "pay out" the investment, and this returned, the oil producer operated thereafter on "velvet." The producer's desire to establish comprehensive and accurate records, both as to development and production, and the necessity of compliance with the federal income tax law and regulations of the United States Bureau of Internal Revenue, have influenced the accounting methods of the oil producers. And notable improvements have been made in records, both accounting and geological, in recent years.

In many States especial laws are found in the statutes giving rights to mining corporations in the manner of payment for capital stock. The legal fiction allowing a prospector to value the "hole in the ground" for any desired sum necessary to make his company's capital stock full paid and non-assessable, although such value be immediately contradicted by the donation to the company of shares to be sold, in most cases, at a discount, has been used in the formation of corporations for the production of petroleum.

It is important that the auditor and accountant should fully set forth the exact particulars of method of capital stock issue and payment. The records and entries

necessary in the accounting for capital stock are the same in the company seeking oil as those of any other corporation.

Arbitrary values are placed upon leaseholds, the stock issued, and sold in whole or in part. The company is then ready to start to search for oil. The geologist from his experience and study of structures, approves the location of the lease which, in the larger producers, has been obtained by its "scouting department." This department of the "oil game" maintains men in the oil fields who watch the other fellow, and are in their turn watched by him. These men are the pioneers of the business, and are experts in practical oil geology.

Development is started (that is, the company or individuals start to drill a well or wells) on the leases obtained.

The accounting for such development can be classed with, and is very much like the accounting requirements of any construction enterprise. The influence of the accounting methods of the engineer and contractor can be plainly seen in most of the accepted forms of account books used by oil producers.

Land and lease titles are important. It is essential that legal examination of titles and drilling rights be made. Leases are generally described by number, name, and legal description. An acceptable form of lease record will contain an abstract of the chain of title, a record of assignments, details of consideration paid, and periodic rental requirements. The customary form also will provide for a record of change of ownership of the land or rentals. In this record an entry should be made of the date of the first well, its location, when drilling commenced, and date well was completed or abandoned. Party and royalty interests must be carefully defined in this record, and the record so kept that it is at all times available; for it is to the bookkeeper the final court, and to the auditor, when supported by original documents such as leases, abstracts of title, royalty, and party interests contracts, it becomes a valuable index of the producer's activities and responsibilities. Anyone familiar with the method used by trust companies in making an abstract of deed of trust will recognize that the lease record of the oil producer performs the same function for him as the abstract of trust does for the trust company.

Development of a lease should be regarded by the accountant as one of construction. The well is started; "spudded in," are the words used in the vernacular of the oil man. The prospector for oil literally builds a hole in the ground and must do a considerable amount of advance construction before he knows whether his effort will be successful. This construction may be divided into lease construction and well construction. Purchase orders in quadruplicate, and vendor's invoices in triplicate serve as initial papers for the support of vouchers which are chargeable to Warehouse or Supplies account. Record of equipment and supplies received in the field warehouse is endorsed on a copy of the purchase order. This copy is sent to the general office, together with a copy of vendor's invoice. Copies of the purchase order and vendor's invoice are retained by the field storekeeper and are the posting medium to a perpetual inventory record. The field record of stores and equipment on hand must be kept with care, and periodic physical inventories are necessary to verify such record. Notwithstanding that equipment and supplies should be issued only to the lease or location upon requisition, the speed and urgency of oil well construction and the customary disregard of accounting requirements by field men, make frequent check of stores imperative.

The cost of development is returnable by allowable deductions from revenue. Definitions of the Bureau of Internal

Revenue, as to what are allowable deductions, have influenced oil producers' classifications of accounts. No confusion can be allowed between accounts representing physical property costs, which are returnable through depreciation, and those accounts representing costs of development, such as validating and prospecting, drilling labor, teaming and freight, etc. Casing and tubing may be subject to either depreciation or depletion. Casing in the hole and its value can be returned through depletion, but if it is recovered from a "dry hole," its present value must be credited to the cost of the "dry hole."

Depletion of the well or lease is the most important allowable deduction from oil or gas well revenue. The oil producer constructs his accounts so that such accounts follow the Manual of the Oil and Gas Industry, issued by the Treasury Department. All expenditures for development are considered in most classifications of accounts for oil producers as capital expenditures.

The voucher, as in all mining operations, is the most important accounting document in the oil producer's system of accounting. It is used as the posting medium to all subsidiary records and serves as a "grouping sheet" for supplies, requisitions, invoices, pay rolls, and journal transfers and adjustments. Cash books and voucher registers follow, in most systems, the customary form for such books. The "log of the well," which should be a careful history of the drilling well, is a very important book, and proves an acceptable voucher to the auditor. Log books will record the kind of structure through which the drilling tools are going, the number of feet and size of casing used, and all incidents of drilling. The log is carefully consulted by all on the location, for it is by this careful record that the geologist and practical oil man see below the grass roots.

The form of ledger used by the oil producer to index lease and well costs is so drawn as to include on one page the entire accounting classification covering development of lease and well. Every column on the form of a lease or well record is a ledger account, and in many cases, a perpetual inventory of supplies and equipment. In this record, subdivided as to leases or farms, columns are provided to record: investment, labor, teaming and freight, drilling, tanks, rigs, engines, boilers, pumps, buildings, casing, pipe, tools, fuel, water, torpedoes (initial), depreciation, and in fact every cost of lease and well development. Classifications vary, but the accounts of all oil producers should exhibit lease costs divided into physical equipment and labor, supplies and expense. Some producers so keep the lease and well record as never to lose the identity and cost of the individual well; others, as soon as a well is "brought in," take its cost into the lease record, not as a unit, but redistribute same so that the lease record exhibits drilling costs for all wells on the lease. The lease, therefore, becomes the unit, not the well.

The identity of the well should never be lost in the production records of the producer. This sometimes occurs, however, because pumping, pipe line, or tank requirements make it impossible to gauge the individual well.

The production record is the income account of the producer. This record is drawn and kept so as to record production of oil and gas and the sale thereof. The form of this record varies widely; in its simplest form it records the "run tickets" to the pipe line, thus recording only the oil sold. In its more complex form, oil pumped will be gauged into tanks and record made of water drawn off from oil sold. Pumping and storage records are kept and so-called well efficiencies computed. Accurate gauging or measuring is

essential and careful supervision of the producing lease is greatly aided by clearly constructed production records. Declines in flow are valuable for the computation of depletion, as well as useful to the superintendent of production. Wells must be kept clean and pumping powers brought up to the highest efficiency, so that the curve of the well's production will not exhibit sharp declines in flow.

The classification of accounts setting forth production expenses follows closely the original classification covering costs of development. Fuel, water, supplies, teaming and labor are all used in the production; as well as torpedoes (not initial) and repairs to wells and equipment. When it is appreciated that the oil producer never ceases to search for more oil, and in that continued search creates constantly charges to accounts almost identical to accounts recording production expenses, it is evident that accounting routines must be carefully written to prevent confusion between production expenses and expenses of development. Consideration that the equipment needed to clean out a well is almost the same as that needed to drill it, and that the labor will, in many cases, be reported as simply drilling labor, makes it plain that the oil accountant must be constantly alert in making his distributions accurately.

Lease rentals and production taxes, together with expenditures for maintenance of wells and "lifting equipment," and all lifting expenses are generally considered as production expenses by the oil producer. In his classification of general expenses, accounts for the ordinary and necessary expenses of administration are included together with accounts showing costs of his land and scouting departments.

Some producers carefully distribute to leases or production superintendence by field men; others charge such cost to administration without attempt at allocation; thus, to compare costs of companies, one should have the oil producer's manual of accounts at hand. Comparisons of drilling labor, casing, rigs, and other equipment may be made, for the accounts representing such costs are fairly standardized, and much of the drilling is done upon a drilling contract basis at so much a foot.

Tools and the accounting for them are a constant subject for debate; probably the most equitable method of treatment is to charge all tools (including drilling and fishing tools) to the lease, adjusting such charge when tools are taken to another location; the balance of the account will then represent losses of tools and depreciation thereof as a lease or well cost. This method follows the general practice of the construction enterprise and avoids inaccuracies and adjustments occasioned by an established arbitrary footage charge for tools used.

The oil producer has in the Manual for the Oil and Gas Industry an authoritative guide for his accounting methods, and methods of valuation of his properties for depletion.

Oil producing companies can and do pay dividends from income or capital or both, and should be charged with the duty of notifying stockholders of the source of such dividends.

Few balance sheets of oil producers give a complete history of the capital invested in the enterprise and its source; the use of the so-called double account form of balance sheet would, in many cases, give more definite information as to capital and its use for the company's development.

In this brief sketch space has not permitted the writer to attempt to define accounts used by oil producers, nor to describe the many interesting special records found in an oil producer's scheme of accounts. Such records do not vary materially from the records used by con-

struction or manufacturing enterprises, and are generally so plainly drawn that the accountant immediately recognizes their purpose and understands their use.

Book Review

Kirkbride, F. B., Sterrett, J. J., and Willis, H. P. *The Modern Trust Company.* Fifth edition, enlarged and revised. (New York, The Macmillan Company, 1920. 549 p.)

The increase of two hundred and forty pages over the fourth edition of this book conveys little idea of the improvement noted in the new edition. Not only is it larger and more comprehensive, but the revision seems to have added new life and interest to the presentation of the subject.

Many new topics have been added to various chapters, for example, "Public trustees" and "Interlocking directorates," while new chapters have been included as follows: Membership in the Federal Reserve System, Making use of the Federal Reserve System, Credits and Credit Department, Tax Department, Operating Costs, Statistical Department, Foreign Banking, Investments and Commercial Paper.

The section on audits and examinations has been slightly amplified by reference to the practice of the Federal Reserve System and reiterates the statement that "some banks and trust companies in this country have adopted the practice of printing a public accountant's certificate in their published reports. This is in keeping with a custom that is growing among other classes of corporations in this country, and that is almost universal in Great Britain. Present tendencies point to its becoming generally expected by the business public, just as banking houses are now laying stress upon an accountant's certificate as to a customer's financial statement when presented as a basis for credit."

The book in its present form is altogether very acceptable and worthy of a place in all libraries, both public and private.

Additions to the Library, December, 1920

American Academy of Political and Social Science. Working capital in street railway valuation; by Delos F. Wilcox. Philadelphia, American Academy of Political and Social Science, 1920. 24 p.

Commerce Clearing House. Unabridged Federal income tax service, 1921. New York, Commerce Clearing House, 1920.

Commerce Clearing House. Unabridged Federal war tax service, 1921; containing the law, regulations, Treasury decisions as in force at November 1, 1920, and in current supplements as issued during 1921. New York, Commerce Clearing House, 1920.

Corporation Trust Company. Income tax service, 1913—1921. New York, Corporation Trust Company, 1921.

Corporation Trust Company. War tax service, 1921; containing Title B, war profits and excess profits tax law and other titles covering special tax levies, including the Capital Stock Tax on corporations law of the Revenue Act of 1918, and official rulings, regulations, etc., bearing thereon. New York, Corporation Trust Company, 1921.

First National Corporation. Acceptances, by Alexander Henderson. Boston, The First National Corporation, 1920. 46 p.

The Franco-American year book, 1921. Paris, France, Edward Cantor, 1921. 400 p.

Kirkbride, Franklin Butler, and Others. The modern trust company: its functions and organization: an outline of fiduciary banking. Edition 5, revised and enlarged. New York, The Macmillan Company, 1920. 549 p.

National Association of Cost Accountants. Managerial uses of foundry costs, by J. P. Jordan. New York, December, 1920. 13 p.

National Industrial Conference Board. Proceedings of the second national industrial tax conference held in New York City, October 22 and 23, 1920. 200 p.

Prentice-Hall, Inc. Prentice-Hall Federal tax service, 1921. 2 v. New York, Prentice-Hall, Inc., 1921.

Standard Statistics Company, Inc. Securities prices as of December 31, 1918; compiled for and under the supervision of the Comptroller of the State of New York for use in determining the valuation of securities under the State Income Tax Law. New York, Standard Statistics Co., Inc. (c1921). 288 p.