

OWNERSHIP DISTRIBUTION AND VALUE OF MINERAL RIGHTS  
IN PRODUCING OIL FIELDS OF OKLAHOMA

STRATHMORE PARCHMENT

100 % RAC USA

OWNERSHIP DISTRIBUTION AND VALUE OF MINERAL RIGHTS  
IN PRODUCING OIL FIELDS OF OKLAHOMA

By

ROBERT LEE LACY

Bachelor of Science

Oklahoma Agricultural and Mechanical College

Stillwater, Oklahoma

1948

Submitted to the Department of Agricultural Economics

Oklahoma Agricultural and Mechanical College

In Partial Fulfillment of the Requirements

for the Degree of

MASTER OF SCIENCE

1949

OKLAHOMA  
AGRICULTURAL & MECHANICAL COLLEGE  
LIBRARY  
NOV 3 1949

APPROVED BY:

*L. A. Parker*  
Chairman, Thesis Committee

*Delaware L. ...*  
Member of the Thesis Committee

*Allen Nelson*  
Head of the Department

*W. C. M. ...*  
Dean of the Graduate School

240241

## ACKNOWLEDGMENT

The writer wishes to express his deep appreciation to Professor Loris A. Parcher for his immeasurable advice and suggestions which have been extremely helpful in the writing of this thesis.

Appreciation is further expressed to Professor Robert L. Tontz for his invaluable assistance in editing the manuscript; to Mrs. Arleen Lacy who so generously gave of her time in typing the preliminary copies of this study; to Mrs. Marjeane W. Smith who read the final draft for grammatical errors; and to Mrs. Carol Ealy who typed the final copies of this thesis.

## CONTENTS

Chapter	Page
I INTRODUCTION. . . . .	1
Purpose and Scope. . . . .	5
History of Field . . . . .	6
II METHOD OF PROCEDURE . . . . .	10
III DIVISION OF OWNERSHIP OF SUBSURFACE RIGHTS . . . . .	13
IV INCOME FROM SALE OF MINERAL RIGHTS AND ROYALTY INCOME COMPARED . . . . .	20
Income From Sale of Mineral Rights . . . . .	20
Income From Oil Production . . . . .	23
Income From the Sale of Mineral Rights Compared to Income From Oil Production . . . . .	28
V SUMMARY AND CONCLUSIONS . . . . .	34
Summary . . . . .	34
Conclusions . . . . .	56
APPENDIX. . . . .	38
BIBLIOGRAPHY. . . . .	48

## LIST OF TABLES

Number	Page
1. The Volume of Mineral Deeds and Royalty Conveyances the Year the Field was Discovered, the Year Previous to Discovery, and the Year Following Discovery, in the Davenport, Lucien, Crescent, and Coyle Oil Fields. . . . .	15
2. Ownership Distribution of Subsurface Rights Between Landowners, Speculators, and Quasi-speculators in the Davenport, Lucien, Crescent, and Coyle Oil Fields . . . . .	16
3. Total Acres of Subsurface Rights, Number of Acres Sold, Total Income From Sales and Average Income Per Acre of Subsurface Rights Sold in the Davenport, Lucien, Crescent, and Coyle Oil Fields. . . . .	25
4. Accrued Income from Oil Production and the Value of Estimated Reserves, in the Davenport, Lucien, Crescent, and Coyle Oil Fields of Oklahoma . . . . .	27
5. Average Income Per Acre from Sale of Mineral Rights and Average Accrued Income from Oil Production in the Davenport, Lucien, Crescent, and Coyle Oil Fields . . . . .	29
6. Income from Oil Discounted Annually at Five Percent for Each Year Since Discovery of the Field and Income Per Acre from the Sale of Mineral Rights. . . . .	31

## Appendix Tables

I. Basic Data for the Davenport Oil Field, Lincoln County, Oklahoma . . . . .	41
II. Basic Data for the Lucien Oil Field, Noble and Logan Counties, Oklahoma. . . . .	43
III. Basic Data for the Crescent Oil Field, Logan County, Oklahoma. . . . .	44
IV. Basic Data for the Coyle Oil Field, Payne County, Oklahoma and Total and Average Figures for all Fields . . . . .	46
V. Basic Data for the Davenport, Lucien, Crescent, and Coyle Oil Fields . . . . .	47

LIST OF FIGURES

Number	Page
1. Location Map. . . . .	9

## CHAPTER I

### INTRODUCTION

It is a common practice in Oklahoma to buy and sell mineral rights separate from the surface. The buying and selling of subsurface rights in Oklahoma is a thriving business and it is well known that fortunes have been made and lost through speculation in subsurface rights. However, it is not intended here to study gains and losses incurred by speculators but rather to place major emphasis on the problems that landowners encounter in deciding whether to sell or to retain their mineral rights.

There is considerable evidence to support the claim that subsurface rights are of great importance, financially, to Oklahoma farmers--important not only from the standpoint of produced oil, but also from the standpoint of lease and bonus payments. However, there has been little empirical data to which one could turn to use as a guide in making mineral transactions in an area where oil discovery is regarded as highly probable. It is in such areas that the demand for royalty is great and farmers in the immediate vicinity often are besieged with offers to buy their subsurface rights. In these areas of "hot-play", farmers have had no information as to what constitutes a fair price for subsurface rights, and particularly in these areas landowners stand to make or lose considerable wealth.

As an indication of the importance of "activity" in subsurface rights, Edwards,<sup>1</sup> in his study of subsurface income in Payne County, Oklahoma, found that 19.2 percent of the subsurface rights in the county had been sold by the landowners. The average price paid for these mineral rights was \$63.86 per

---

<sup>1</sup> Roy Vernell Edwards, A Study of the Source and Distribution of Income Arising from the Ownership of Mineral Rights in Payne County, Oklahoma. Master's Thesis, Oklahoma A. & M. College, 1947.



acre. The income from production royalty averaged only \$32.35 per acre for all land in the county. The explanation given for the difference between the selling price per acre of mineral rights sold and the income accruing per acre from oil production for all land in the county, is that the figures are based on county averages. Mineral rights frequently are purchased in areas of intense activity and therefore sell much higher than the average price. Edwards presented no figures showing the relative price paid for mineral rights in producing fields and the royalty income from those rights. County averages are of little aid to landowners in areas where the prospect for oil production appears imminent. It is believed that a study of subsurface transactions in producing oil fields, which had heavy buying and selling of mineral rights, will be of assistance in the future to landowners who are faced with the problem of whether to sell or hold their subsurface interests.

In an effort to make clear the manner in which subsurface estates are created, a brief summary of the development of subsurface property concepts may be appropriate.

There are many variations in the forms used in transferring portions of the real property "bundle of rights" from one party to another. Several of these forms have been brought about through the evolution of the oil industry. Davidson and Wernimont<sup>2</sup> of the Bureau of Agricultural Economics, who made a study of tenure arrangements in oil fields, found that the three major classes of instruments adapted to or developed for the petroleum industry are mineral deeds which sever the subsurface estate from the surface estate; mineral leases which grant a form of tenancy in the subsurface estate for the purpose of

---

<sup>2</sup> Davidson and Wernimont. Tenure Arrangements in Oklahoma Oil Fields. The Journal of Land and Public Utility Economics, Vol. XIX No. 1, February, 1945.

exploring for, and producing oil and gas; and royalty conveyances which transfer a share in the proceeds of production without any accompanying responsibility for either the actual operation or the land itself.

They go on to say that the legal concept of ownership in oil and gas has had a controversial career. From the beginning it was plain that oil and gas had some of the characteristics of solid minerals and early court decisions were quick to recognize them and defined land to include oil and gas. Thus the formalities of transferring rights in oil and gas came to be governed by the rules for conveying realty.

However, Davidson and Wernimont point out that the comparison to solid minerals was imperfect as a basis for application of real property transfer rules. One of the attributes of fee simple ownership in real property is the right of the owner to full possession of the property against any trespasser. This attribute is clearly applicable in the case of solid minerals for their very solidity makes it possible to determine property boundary lines above and below the surface. Oil and gas, on the other hand, are not fixed in the earth but are contained in subsurface structural traps or reservoirs. If the reservoir is tapped and oil and gas are removed or permitted to escape, a low pressure area is created and migration occurs from other parts of the reservoir to the low-pressure area until the pressure is equalized. Consequently, drainage from under one tract of land can take place by means of wells located on another tract of land. As no trespass is committed upon the first property and as oil and gas can not be specifically identified as to source, the owner of the second property has no way of obtaining relief except by drilling offset wells on his own land.<sup>3</sup>

---

<sup>3</sup> In Oklahoma and most other states there are laws requiring producers to drill offset wells.

The semi-migratory character of oil and gas as they have become better understood through experience provides the primary basis for decisions by Oklahoma courts holding that oil and gas cannot be owned in place as a part of the land and therefore cannot be bought and sold, or sub-divided and apportioned, on a geographic basis except as an accessory to the land itself. They are not subject to ownership until produced and reduced to possession as personal property. The fee simple landowner does have the exclusive right, however, to use the surface of his property, and as the oil and gas cannot be produced without using the surface, he has the exclusive right to explore for and produce oil and gas under his land. This is a valuable property right which may be transferred. Thus, when a landowner transfers all right, title and interest in oil and gas beneath his land, he has in effect accomplished a virtual separation of ownership in the resources below the ground from his ownership of the surface. He does this not by selling the actual oil and gas, but by selling the right to search for and produce the oil and gas and reduce it to personal property.

The risk involved in buying mineral rights, especially oil and gas rights, may be great. Indications are that by far the greatest percentage of mineral rights is transferred previous to the complete development of the field.<sup>4</sup> The significant point is that a transfer instrument for minerals conveys only the right to search for and produce oil and gas. It takes little imagination to see that if oil is searched for and none is found, the property right purchased is of no value. The landowner, on the other hand, also sees this risk. He may profit greatly by holding his mineral rights, but he may profit nothing. He, therefore, is placed in the position of trying to weigh the certainty of a

---

<sup>4</sup> In this study no evidence was found of mineral rights being transferred after the site was drilled except in several cases of the settlement of estates.

nominal amount he will receive if he sells a portion or all of his undeveloped mineral rights against the possibility of receiving nothing if oil is not found or a possible greater income if oil is found.

#### Purpose and Scope

This study is an attempt to provide information to landowners that will be of assistance in making decisions if the chance arises to sell undeveloped mineral rights. Such information will be based upon factual data taken from public records and personal observation for certain selected oil fields in Oklahoma. Though it must be clearly understood that data collected here will apply specifically only to the oil fields studied, it is believed that such information will be of assistance to landowners in other areas and especially in areas of concentrated oil play.

It is expected that from these data, it will be possible to determine:

- (1) the accrued income to the mineral rights in each field from oil production,
- (2) the price paid for these mineral rights previous to development of the field, and
- (3) the distribution of ownership of mineral rights between landowners,<sup>5</sup> speculators,<sup>6</sup> and quasi-speculators.<sup>7</sup>

It is believed that this information will facilitate the answering of these questions: (1) Are farmers receiving the majority of the income accruing to the owners of mineral rights in producing oil fields? (2) Would it have been

---

<sup>5</sup> Landowners is here defined to mean the person to whom the surface of the land tract belongs.

<sup>6</sup> Speculator is here defined to refer to the person or persons who buy and sell subsurface rights for speculative purposes, and who are not connected in any way with the surface.

<sup>7</sup> Quasi-speculator is here defined to refer to farmers or ex-farmers who sold the surface rights to their land but retained part or all of the mineral rights.

more profitable to have sold the mineral rights as the field began to develop or to have held them and received the revenue from oil production?

The study includes four producing oil fields, namely: Davenport, Lucien, Crescent, and Coyle. In general, these fields are located in the north central portion of Oklahoma and are situated in Lincoln, Noble, Logan, and Payne counties respectively (Figure 1).

### History of Fields

#### Davenport Field:

The discovery well in this field was drilled into the pay sand on September 17, 1924 in the southwest corner of the Southeast Quarter of Section 34, Township 15, Range 5 East of the Indian Meridian.

The growth of the Davenport field was slow due to the opinions of geologists that the pool was a freak.<sup>8</sup> It was not until after eight months of gradually rising production that any intensive development started. Even so, at the time of development, the Davenport field produced the highest gravity oil in Oklahoma. The average gravity of oil was 47 degrees and the field was the largest producer of exceptionally high grade oil witnessed since the early discoveries of oil in Pennsylvania.<sup>9</sup>

In beginning production, most of the wells flowed from 150 to 450 barrels of oil daily. Total production of the field at the end of 1947 was 13,427,545 barrels from 137 wells.

#### Lucien Field:

In September, 1932, the first important oil field in Oklahoma to be unitized was opened in Township 20 North, Range 2 West of the Indian Meridian

---

<sup>8</sup> The Oil and Gas Journal, December 3, 1925, p. 23.

<sup>9</sup> Ibid.

and was known as the Lucien Field.<sup>10</sup> Eight major oil companies controlled 2,160 acres with the Shell Petroleum Corporation controlling 34.27 percent of the total.<sup>11</sup> There were 53 wells drilled in the original field with 40 acre spacing. Later the spacing of wells was changed to 10 acres in part of the field and now there are 114 producing wells in the field. The producing sand strata in this field lies at an average depth of 5,000 feet. At the end of 1947 the Lucien field had a total production of 34,800,196 barrels.

#### Crescent Field:

The discovery well, Miller No. 1, was completed in the Wilcox sand by the Gypsy Oil Company, June 14, 1933 to open the Crescent field. The well is located in the center of 40 acres in Section 28, Township 17 North, Range 4 West of the Indian Meridian, and flowed 4,160 barrels in 24 hours. The gravity of the oil produced averages around 43 degrees which makes Crescent one of the higher quality oil producing fields in the state.

After the discovery of the Miller No. 1, the field developed rapidly. At the end of 1947, there were 135 wells and a total production of 20,876,462 barrels.

#### Coyle Field:

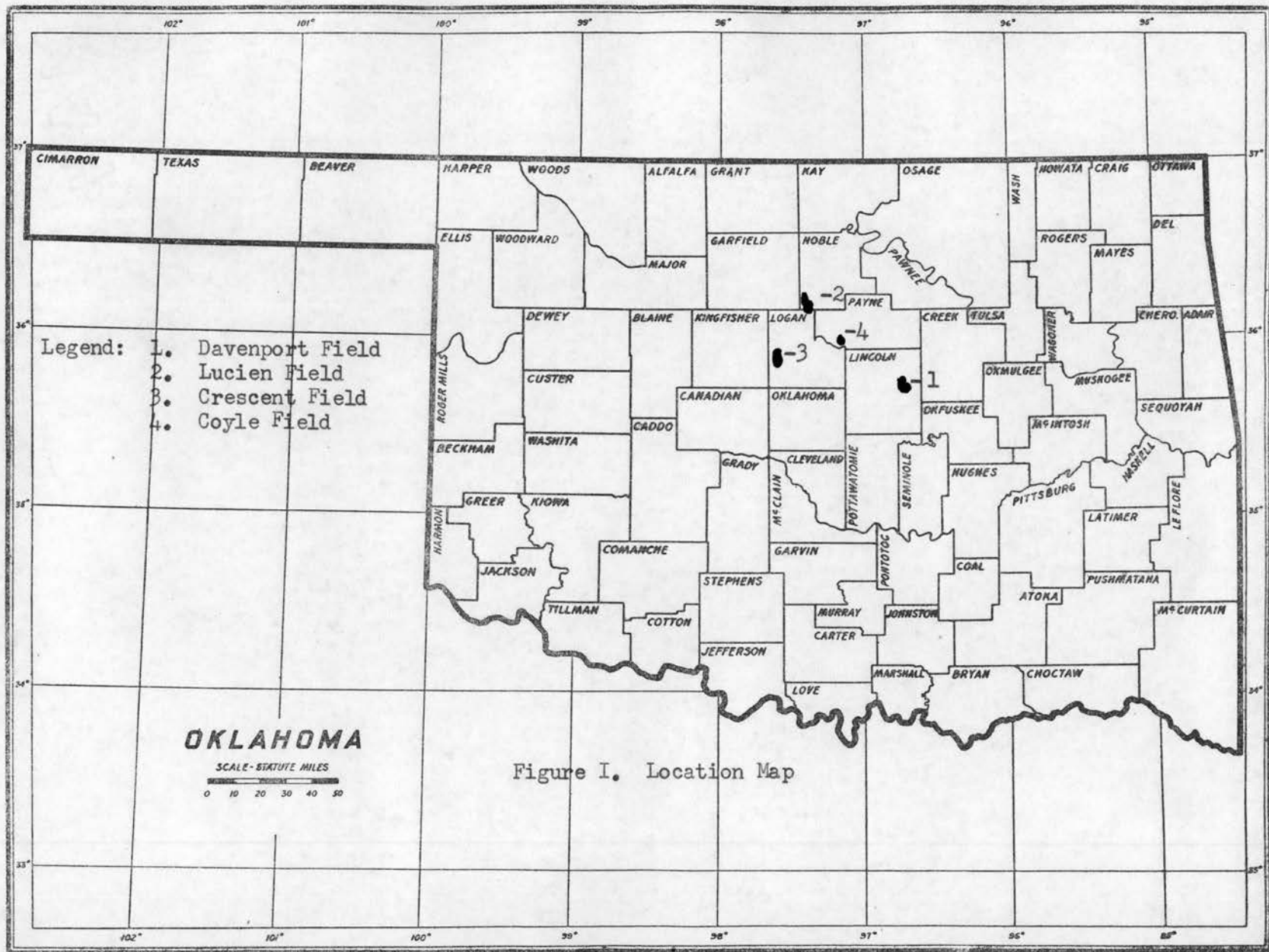
The Texas Company made the location for Logan No. 1, the discovery well, in the center of the  $W\frac{1}{2}$  NW NW of Section 12, Township 17 North, Range 1 East of the Indian Meridian, in Payne County, Oklahoma on March 30, 1938. The

---

<sup>10</sup> Unitization means the development of an oil field through the centralized administration of one or several companies, not the development by a large number of operators.

<sup>11</sup> Jean Neustadt, A Study of the Effect of Oil and Gas Development Upon Land Utilization in the Lucien Oil Field, Noble and Logan Counties, Oklahoma. Master's Thesis, Oklahoma A.& M. College, 1948, p. 8.

Hunton sand was tapped at 4,622 feet and extends downward to approximately 5,000 feet. The well was completed November 1, 1938 for 450 barrels of oil per day. At the end of 1947 there were 30 producing wells in the field with a cumulative production of 9,183,637 barrels.





## CHAPTER II

## METHOD OF PROCEDURE

This study was designed to determine (1) who derives the benefit from royalty income in producing oil fields, and (2) the relative profitableness to landowners of selling or retaining their mineral rights.

To accomplish this purpose, preliminary investigation was made of numerous oil fields. First, it was decided that the nature of the data required complete coverage of the universe in each field. The number of fields used, therefore, would of necessity be limited because of limitations of time and funds. Second, it appeared that in order to obtain a representative cross-section of subsurface transfers and to discover any changes in practices of buying and selling subsurface rights that may have occurred over time, it would be desirable to select fields of different dates of development. For these reasons and also because the fields were relatively near by, the fields mentioned earlier were chosen. They were: The Davenport Field, in Lincoln County, discovered in 1924; the Lucien Field, in Logan and Noble Counties, discovered in 1932; the Crescent Field, in Logan County, discovered in 1933; and the Coyle Field, in Payne County, discovered in 1938. The legal description of the fields may be found in the appendix.

The next step was the collection of data for the fields to be studied. The data were obtained through examination of public records in the respective County Clerks' offices and the history of mineral transactions occurring on each separate tract of land in the field was copied. The period studied was from the time each tract was patented, that is, transferred from public to private ownership, up through the year 1947. To aid in collection of the data, a schedule was designed which included the legal description of the land, the name of the grantor and the grantee, kind of instrument, number of acres in

tract, date of the instrument, interest transferred, consideration, amount of internal revenue stamps, and a space for remarks. No data were taken for tracts which did not have at least one producing well. However, more acres of land were included in the study than the Oklahoma Corporation Commission considers as being in the field. This is due to the fact that it was necessary to include all of a land tract even though there was only one producing well while the Corporation Commission includes only proven acres.<sup>1</sup> The reason for including the entire tract is that the landowner generally sells an undivided mineral interest under all of the tract rather than just that portion of the mineral rights which is beneath the spacing for the well.

To serve as a guide in collecting and analyzing the data, a hypothesis was formulated. The hypothesis broken into two parts states: 1. Landowners as a group are not receiving a majority of the royalty income accruing to the owners of mineral rights in producing oil fields. 2. It would have been more profitable for the landowner to have held the mineral rights in order to receive the revenue from actual oil production than to have sold these rights for a cash figure prior to and during the development of the field.<sup>2</sup>

The first problem to be dealt with was that of determining the distribution of ownership of mineral rights (Chapter III). It has long been a controversial question as to just who owns the major portion of producing royalty. cursory examination might lead to the belief that practically all is owned by the present landowner, but closer observation shows that such is not the case

---

<sup>1</sup> Proven acres in an oil field are figured by multiplying the number of producing wells by number of acres used in spacing the wells. Example: 100 wells with 10 acre spacing = 1000 proven acres.

<sup>2</sup> This refers to areas of "hot play" where eventually a field was developed.

and some indications point toward the other extreme, that very little of the mineral rights still remain in the hands of present landowners.

Chapter IV begins with an analysis of income arising from the sale of mineral rights in the four fields studied; and is followed by a study of income accruing from oil production in these fields. Finally, a comparison of the amount of income from the two sources is made and an attempt made to determine the advantage or disadvantage of selling the subsurface rights rather than holding them and receiving royalty income from oil production.

Chapter V is a summary of the study and points out conclusions arrived at during the course of the analysis.

## CHAPTER III

## DIVISION OF OWNERSHIP OF SUBSURFACE RIGHTS

As pointed out earlier, two new kinds of legal instruments were developed with the evolution of the oil industry, which accomplish a separation of the subsurface rights from the "bundle of rights" granted by a fee simple title. One instrument was the mineral deed which completely separates the subsurface estate from the surface estate. The second instrument, a royalty conveyance, conveys a certain interest in any production from the subsurface, but no right of operation or direction of the interest is transferred. The latter instrument is sometimes referred to as a non-participating royalty transfer. It must be kept in mind that these instruments do not transfer title to any tangible object, but rather, the first transfers only the right to explore for and take possession of such minerals as may be found, and in the case of the royalty conveyance, only the right to share in any production that may be found during the life of the instrument.<sup>1</sup> This means, in brief, that one may buy a right to search for and produce something of value or to participate in the proceeds of production. However, there is no assurance that anything of value will be found. This has led to speculation in subsurface rights which in "hot areas" may grow into gigantic proportions. As an example of the immense activity in subsurface rights in an oil producing area, abstractors estimated that there were 69,000 separate holdings of mineral rights in Pottowatomie County.<sup>2</sup> Glassmire reports that in the Seminole field as many as 600 persons share the

---

<sup>1</sup> Royalty conveyances are made for a given number of years and if production starts before the instrument expires then as long thereafter as minerals are produced. If no minerals are produced during the specified time, then all rights revert to the owner of the subsurface rights.

<sup>2</sup> R. D. Davidson and L. A. Parcher, The Influence of Mineral Rights on Transfers of Farm Real Estate, Oklahoma Experiment Station Bulletin No. E-278, February, 1944, p. 11.

royalties from a single tract.<sup>3</sup>

It is the purpose here to determine the division of ownership of mineral rights in the four fields studied. Owners of subsurface rights were broken down into three major classes: landowners, speculators and quasi-speculators.<sup>4</sup> Anyone holding undeveloped mineral rights for which there is a market is speculating since the true value of the rights cannot be ascertained until mineral exploration is made. Even if oil and gas are found there is no assurance that a sufficient quantity will be recovered to offset the price paid, or the price refused, for the royalty. However, the breakdown above seems to be justified in that the landowner does not make it his regular business to deal in subsurface rights. He is interested only in those minerals beneath his own land. He is a speculator, therefore, only to the extent that he holds a property right which he might sell. The quasi-speculator is distinct from the speculator in that the former is the ex-owner of the land in question, but when selling his land, he retained all or a portion of the mineral rights because of possible oil production on the tract. However, he is not actively engaged in subsurface speculation; and only by retaining mineral rights is he speculating. When a landowner sells his property but withholds some of the mineral rights, he usually has to sell at a lower price than if all the subsurface is included.<sup>5</sup> This is the manner in which quasi-speculators incur their investments in mineral rights. The speculator class consists largely of individuals who make a business of buying and selling mineral rights, but also includes all individuals

---

<sup>3</sup> Samuel J. Glassmire, Oil and Gas Leases and Royalties, Thomas Lord Book Company, 2nd, 1938, p. 312.

<sup>4</sup> Defined in Chapter I.

<sup>5</sup> Davidson and Parcher, Op. cit., p. 13.

who have never had an interest in the surface of the particular tract of land but who have bought mineral interests beneath it.

In Chapter I, it was stated that the greatest proportion of subsurface sales was made prior to the full development of the field. Tabulation was made of the volume of mineral deeds and royalty conveyances made the year the field was discovered, the year preceding discovery, and the year following discovery (Table I). This tabulation shows that the greatest concentration of subsurface rights transactions was in the year the field was discovered. Also, in the Davenport and Lucien fields there was a relatively heavy concentration (27.2 and 27.5 percent respectively) the following year. The Lucien field was the only field to show a significant volume of sales (11.4 percent) the year preceding discovery in the Davenport field and none in the Coyle field the year following discovery of the field. All other transactions were scattered widely over the years. The total volume of transactions during the three years tabulated was: Davenport 57.3 percent; Lucien 71.1 percent; Crescent 36.5 percent; and Coyle 73.0 percent. These data present a picture of the concentrated activity in subsurface rights in areas of actual oil development.

Table 1. The Volume of Mineral Deeds and Royalty Conveyances the Year the Field was Discovered, the Year Previous to Discovery, and the Year Following Discovery, in the Davenport, Lucien, Crescent, and Coyle Oil Fields.

Field	Date of Discovery	Total No. of Transfers	The Preceding Year		Year Field was Discovered		The Following Year		Total for Three Years	
			No.	%	No.	%	No.	%	No.	%
Davenport:	1924	103	0	0	31	30.1	28	27.2	59	57.3
Lucien :	1932	149	17	11.4	43	32.2	41	27.5	106	71.1
Crescent :	1933	104	3	2.9	33	31.7	2	1.9	38	36.5
Coyle :	1938	63	3	4.8	43	68.3	0	0	46	73.0

In the fields studied there is no definite pattern of ownership distribution (Table 2). In the Davenport and Crescent fields, landowners still retain over 50 percent of the subsurface rights (55.1 and 61.0 percent respectively); in the Lucien and Coyle fields they own less than 50 percent (33.0 and 36.0 percent respectively). The division of ownership for all fields as a group is: landowners 48.5 percent, speculators 40.1 percent and quasi-speculators 10.8 percent. While it cannot be stated that these data are strictly representative of all oil fields in Oklahoma, it seems reasonable to assume that the breakdown of ownership between landowners and all other types of subsurface owners in oil fields of the state may be near the 50 percent level.

Table 2. Ownership Distribution of Subsurface Rights Between Landowners, Speculators, and Quasi-speculators in the Davenport, Lucien, Crescent, and Coyle Oil Fields.

Field	No. of acres in field	No. of acres owned by landowner	% of total acres owned by landowner	No. of acres owned by speculators	% of total acres owned by speculators	No. of acres owned by quasi-speculators	% of total acres owned by quasi-speculators
Davenport:	4,400	2,425	55.1	1,404	31.9	571	13.0
Lucien :	5,258	1,736	33.0	3,119	59.3	403	7.7
Crescent :	5,650	3,449	61.0	1,391	24.6	810	14.3
Coyle :	1,543	556	36.0	947	61.4	40	2.6
Total	16,851	8,166		6,761		1,824	
Average :			48.5		40.1		10.8

In the Davenport field, landowners still hold 55.1 percent of the subsurface rights. Nearly a third, or 31.0 percent, of the subsurface rights are in the hands of speculators and 13.0 percent are owned by quasi-speculators.

The Davenport field ranks second in percentage of mineral rights still held by present landowners. This relatively high percentage may be partially explained by the early discovery of the field. The field, discovered in 1924, was brought in prior to the time that the practice of separating the subsurface from the surface became widespread. According to Davidson and Wernimont,<sup>6</sup> such separation was just beginning in Oklahoma in 1915 and did not come into popular usage until the late 1920's. Due to this fact, little speculation in mineral rights was carried on by local people in the area. Most of the mineral transactions occurring were made with outside speculators who were more familiar with the legal procedure necessary to accomplish a separation of the subsurface from the surface. This factor held down the volume of mineral transactions occurring as local buyers usually account for a large proportion of the transactions in mineral rights.

In the Lucien field, discovered in 1932, landowners hold only one-third, or 33.0 percent, of the mineral rights. Speculators own 59.3 percent of the subsurface rights and 7.7 percent are owned by quasi-speculators. Lucien ranks fourth, the lowest of the fields, in percentage of mineral rights held by present landowners. One suggested explanation of the high proportion of subsurface rights sold is the type of owners found in the field. Most of the land in the field is owned by German immigrants. It is thought by sociologists<sup>7</sup> that one of the national characteristics of Germans is to place particular interest in the more or less stable production of the soil, to the exclusion of speculative possibilities. Therefore, when the opportunity presents itself to obtain a good price for something that is, at the best, speculative in nature,

---

<sup>6</sup> Loc. cit.

<sup>7</sup> This idea was pointed out by Dr. R. T. McMillan of the Department of Rural Sociology, Oklahoma A. & M. College.



this type of owner usually is ready to let someone share the risk with him. It may be that this trait of character helps to explain the high percentage of subsurface rights sold.

In the Crescent field, discovered in 1933, present landowners hold 61.0 percent of the mineral rights in the field which is the highest proportion of mineral rights still held by present landowners in any of the fields studied. Speculators own 24.6 percent, and quasi-speculators 14.3 percent of the subsurface rights. Since the Crescent field was discovered during the depression of the early 1930's, it seems reasonable to assume that speculation in mineral rights was influenced downward. Money was scarce during that time so speculators and other individuals did not have the funds to invest heavily in subsurface rights. As cited above, quasi-speculators own 14.3 percent of the mineral rights in the Crescent field, which is 1.4 percent higher than the next highest field, Davenport, and 11.7 percent higher than Coyle, the lowest ranking field in percentage of mineral rights owned by quasi-speculators. One explanation of this relatively high proportion may be the fact that the area where the Crescent field is located is relatively low in natural physical productivity. This condition combined with the difficulties arising out of the depression may have forced many farmers to sell their land just prior to the discovery of the field. However, when it appeared that there might be a good chance for oil production in the area, the possibility of loss of what might be a large income from oil caused landowners to retain at least a portion of their mineral rights when selling their farms.

In the Coyle field where oil was discovered in 1938, landowners still hold 36.0 percent of the subsurface rights, speculators 61.4 percent, and quasi-speculators 2.6 percent. The Coyle field is distinct from the other fields in two respects. First, it has the latest date of discovery and second, there

was considerable oil production already in the county which had caused widespread speculation in subsurface rights. These facts point toward general mineral play in the area previous to the development of the field which had an upward influence on the percentage of mineral rights sold by landowners. Perhaps though, the most important reason for the high percentage of mineral rights sold in this field is that the first well drilled in the area was dry. This caused many landowners in the area to become apprehensive as to possibility of oil production on their land. However, speculators, who as a rule follow the oil business more closely, were still confident that oil would be discovered due to the geological structure of the area. Thus, speculators were still willing to buy and landowners, due to their fear of gaining no return from their subsurface interest, were ready to sell. It may be, therefore, that this is the reason that the proportion of mineral rights owned by speculators is highest in the Coyle field.

## CHAPTER IV

## INCOME FROM SALE OF MINERAL RIGHTS AND ROYALTY INCOME COMPARED

## Income from Sale of Mineral Rights

In order to determine the income to landowners from the sale of their subsurface rights every instrument<sup>1</sup> that transferred any portion of the mineral rights was examined to see how much of the subsurface interest was transferred and for what consideration. To make it lawful and binding, any instrument that transfers property rights must show a consideration of intrinsic value on the instrument itself. However, this does not mean that the true consideration needs to be shown. Often, the consideration shown on the instrument will be "one dollar and other valuable consideration." At first glance, this would make it appear impossible to determine the price for which the property right transferred. However, by federal law the grantee in a property right transfer must purchase and place on the instrument, federal internal revenue stamps in the amount of \$ .55 for each \$500.00 of consideration or fraction thereof.<sup>2</sup>

In cases where it appeared that the actual consideration for the mineral rights was shown on the instrument, this figure was taken. Where the true consideration did not appear on the instrument, but internal revenue stamps did, the consideration was calculated from the amount of internal revenue stamps affixed to the instrument. It is impossible to determine the exact consideration of an instrument by internal revenue stamps since they are required in blocks equivalent to \$500.00. For example, if the consideration is \$500.00, \$ .55 worth of stamps is required or if the consideration is only \$110.00, \$ .55 worth

---

<sup>1</sup> It was found that there were three types of instruments used to transfer mineral rights: Warranty Deeds, Mineral Deeds and Royalty Conveyances.

<sup>2</sup> If the consideration is less than \$100.00 no internal revenue stamps are required.

of stamps is also required. Thus, in figuring the amount of consideration from internal revenue stamps, it appeared that the most accurate estimate would be to determine the total amount represented in stamps and subtract \$250.00 which gives the midpoint in the last \$500.00 block. In this manner the amount of possible error is reduced from \$499.00 to \$250.00. Also, it seems reasonable to assume that the error will be compensated in that as many considerations will be greater than the midpoint in the last \$500.00 block, as will be under. It is believed that by this procedure a reasonably accurate price paid for mineral rights was obtained.

There were some transfer instruments that showed neither a correct consideration nor an internal revenue stamp. However, these were few and scattered over the field. In order to determine a selling price for these subsurface rights, mineral rights sales on adjoining tracts were examined and a price for mineral rights on the tract in question was made that was consistent with prices paid on the adjoining tracts.

Examination of the data taken for the Davenport field shows that of the 4400 acres of subsurface rights in the field, 1404 acres<sup>3</sup> were sold separate from the surface by landowners. The total income derived from the sale of these 1404 acres was \$197,370.00 or an average of \$140.58 per acre (Table 3). The prices paid for subsurface rights in the field ranged from \$6.25 to \$600.00 per acre (Appendix Table I). Out of a total of 48 separate farms in the field, 31 sold subsurface rights. The average number of acres sold was 45.3 or about 50 percent of the land in the tracts. The Davenport field ranks third from the highest in average price paid for subsurface rights for the fields studied.

Data for the Lucien field show that of the 5,253 acres of subsurface rights in the field, 3,119 acres were sold by landowners. The total income from the

---

<sup>3</sup> This figure does not include those mineral rights owned by quasi-speculators.

sale of mineral rights in this field was \$693,816.00 or an average of \$222.45 per acre (Table 3). The amount received for subsurface rights ranged from \$12.50 to \$692.00 per acre. Out of a total of 37 separate farms in the field, 31 sold mineral rights. The average number of acres sold was 100.6 or about 69 percent of the subsurface rights of the tracts affected (Appendix Table II). The Lucien field ranks highest from the standpoint of average price paid for mineral rights for the fields studied.

In the Crescent field, of the 5,650 acres of subsurface rights, 1,391 were sold by landowners. The total income from the sale of these 1,391 acres was \$271,510.00 or an average of \$195.19 per acre (Table 3). The prices for which mineral rights were sold ranged from \$50.00 to \$700.00 per acre. Out of a total of 47 separate farms in the field, 29 sold mineral rights. The average number of acres sold was 48.0 or 42.4 percent of the subsurface rights (Appendix Table III). The Crescent field ranks second in respect to the average price paid for subsurface rights in the fields studied.

In the Coyle field, 947 acres of the 1,543 acres of subsurface rights in the field were sold separate from the surface by landowners. The total income from the sale of these mineral rights was \$107,451.00 or an average of \$113.46 per acre (Table 3). The range in amount received for mineral rights was \$25.00 to \$238.00 per acre. Out of a total of 14 separate farms, 13 sold an average of 72.9 acres or 68.5 percent of their subsurface rights (Appendix Table IV). The Coyle field ranks lowest in respect to the average price paid for mineral rights in the fields studied.

When all fields were combined, it was found that of the 16,851 acres of mineral rights in all of the fields; 6,861 or 40.1 percent had been sold separate from the surface by landowners. The total income from the sale of these subsurface rights was \$1,270,147.00 or an average of \$185.13 per acre (Table 3). The range in amount received for mineral rights was \$6.25 to \$700.00 per acre.

Out of a total of 146 separate farms in the fields as a group, 104 sold mineral rights. The average number of acres sold in each tract was 66.0 or 57.1 percent of the subsurface rights.

Table 3. Total Acres of Subsurface Rights, Number of Acres Sold, Total Income From Sales and Average Income Per Acre of Subsurface Rights Sold in the Davenport, Lucien, Crescent, and Coyle Oil Fields.

Name of Field	Total Acres in Field	No. of acres sold	Total Income from Sales	Average Income per acre
Davenport	4,400	1,404	\$197,370	\$140.58
Lucien	5,258	3,119	693,816	222.45
Crescent	5,650	1,391	271,510	195.19
Coyle	1,543	947	107,451	113.46
Total	16,851	6,861	\$1,270,147	-
Average	-	-	-	\$185.13

#### Income from Oil Production

Basic data to determine income from crude oil production, in the four fields studied, were obtained from five sources. First, the Oil and Gas Journal (a weekly publication); second, World Oil (a weekly publication); third, Oil Scouts and Landmen's Association Yearbooks; fourth, Minerals Yearbook, United States Department of the Interior; and fifth, unpublished data in the files of the Agricultural Economics Department, Oklahoma A. & M. College. No single source was found that showed the annual production of each field over the entire life of the field. As a result, it was necessary to combine data from all the above listed sources. While all of these sources were not in complete agreement, an attempt was made to draw production data from the sources that appeared to be most consistent.

to determine the per acre value of oil production, annual production was multiplied by the average annual price of crude oil at the well and divided by the total number of acres in the field. To obtain the value of the royalty owner's share, this figure was divided by eight as it is usual for the owner of the mineral rights to receive one-eighth of the production revenue, the other seven-eighths goes to the producers of the oil.

After the development of a field is completed and production is stabilized, an estimate of the amount of recoverable oil left in the field is made.<sup>4</sup> This estimate is based on the nature of the geological structure of the field, that is, the type of sand from which the oil comes, the thickness of the sand, the relative porosity of the sand, the type of trap structure in which the oil is found, and the oil and gas ratio. As a general rule these estimates have been conservative. For instance the Davenport field over-produced its estimated reserves several years back.<sup>5</sup>

Since none of the fields studied has discontinued production, it appeared necessary to take into account future production. This was done by using the figure for the estimated reserves of the fields and calculating the value per acre of the reserves in the same manner as for past production except that the price of oil used was the average for the years 1938-1947, \$1.25 per barrel.

In the Davenport field, there was a total oil production of 13,427,545 barrels, the income from which was \$20,049,961 (Table 4). The income from accrued oil production per acre was \$4,556.81 and the royalty owner's share per acre was \$569.60. It will be remembered that there are no estimated reserves for the Davenport field. This field ranks third in income per acre from oil

---

<sup>4</sup> This estimate is made by the State Corporation Commission.

<sup>5</sup> The exact time that production exceeded estimated reserves could not be found.

production to royalty owners.

The total production of oil in the Lucien field amounted to 34,800,196 barrels which yielded an income of \$38,931,285.00 (Table 4). The income per acre from accrued oil production was \$7,404.20 and the royalty owner's share was \$925.53 per acre. The Lucien field ranks first in income per acre from oil production to royalty owners.

When the estimated reserves were combined with these figures, the total income per acre from oil production was estimated at \$8,648.73 and the royalty owner's share, \$1,081.09 per acre. On the average this figure represents the total income per acre that royalty owners can expect from oil production over the entire life of the field.

Data for the Crescent field show that total oil production was 20,876,462 barrels and that the income from this production was \$24,675,175.00 (Table 4). The income per acre from accrued oil production was \$4,367.28 and the royalty owner's share was \$545.91 per acre. The Crescent field ranks fourth in income per acre to royalty owners.

When the estimated reserves were combined with these figures, the income per acre from accrued oil production plus the estimated value of the reserves was \$6,373.92. The royalty owner's share was \$796.74 per acre.

In the Coyle field oil production totaled 9,183,637 barrels which brought a total income of \$11,320,150.00 (Table 4). The income per acre from this production was \$7,336.45 and the royalty owner's share was \$917.06 per acre. The Coyle field ranks second in income per acre from oil production to royalty owners.

When the estimated reserves were combined with these figures, the income per acre from oil production plus the value of estimated reserves was \$9,614.45 per acre, and the royalty owner's share was \$1,201.80 per acre.



Total oil production of all fields combined was 78,287,840 barrels and the total income from production was \$94,976,571.00 (Table 4). The average income per acre from accrued oil production was \$5,636.27, and the royalty owner's share averaged \$704.53 per acre. When the estimated reserves were combined with these figures, the average income per acre from oil production plus the average value of estimated reserves was \$6,906.08 per acre and the royalty owner's share averaged \$353.26 per acre.

Table 4. Accrued Income from Oil Production and the Value of Estimated Reserves, in the Davenport, Lucien, Crescent, and Coyle Oil Fields of Oklahoma.

Name of Field	No. of acres in field	Total Production of oil to Jan. 1 1947	Total Income from oil Production	Income from oil Production per acre	Royalty: Owner's Income per acre 1/8	Estimated Reserves	Value of Total Estimated Reserve*	Value of Estimated Reserves per acre	Per acre Income from oil Production plus Estimated Reserves	Royalty Income per acre from oil Production plus Estimated Reserves
		<u>Barrels</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Barrels</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
Davenport	4,400	13,427,545	\$20,049,961	\$4,556.81	\$569.60	**	-	-	\$4,556.81	\$569.60
Lucien	5,258	34,800,196	38,931,285	7,404.20	925.53	5,235,000	\$6,543,750	\$1,244.53	8,648.73	1,081.09
Crescent	5,650	20,876,462	24,875,175	4,367.28	545.91	9,070,000	11,337,500	2,006.64	6,373.92	796.74
Coyle	1,543	9,183,637	11,320,150	7,336.45	917.06	2,812,000	3,515,000	2,278.00	9,614.45	1,201.80
Total	16,851	78,287,840	\$94,976,571			17,117,000	\$21,396,250			
Average				\$5,636.27	\$704.53			\$1,269.81	\$6,906.08	\$863.26

\* In figuring the value of estimated reserve the ten year (1938-1947) average price of \$1.25 per barrel at the well was used.

\*\*The Davenport field has produced more than the estimated reserves and no further estimate has been made.

Income From the Sale of Mineral Rights  
Compared to Income from Oil Production

After determining the income from the sale of mineral rights and the income accrued from oil production for the fields studied, it was possible to make a comparison of the two incomes in order to ascertain which source of income was more important and whether it would have been better from a financial standpoint for landowners to have retained their mineral rights.

In the Davenport field, the average income per acre from the sale of mineral rights was \$140.58 per acre, and the income accruing from oil production was \$569.60 per acre (Table 5). There are no estimated reserves for the Davenport field even though the field is still producing. Therefore, the income from each acre of royalty from oil production is at least four times as great as the income received from the sale of mineral rights.

The average income per acre from sale of mineral rights in the Lucien field was \$222.45, and the income per acre from accrued oil production was \$925.53. However, the income per acre from accrued oil production plus the estimated value of reserves was \$1,081.09 (Table 5). The income from sale of subsurface rights is only about one-fifth as much.

In the Crescent field, income per acre from sale of mineral rights was \$195.19, and accrued income per acre from oil production was \$545.91. The accrued income per acre from oil production plus the value of estimated reserves was \$796.74 (Table 5). In the Crescent field, the income to each royalty acre from oil will be, at a minimum, four times the amount received from the sale of an acre of mineral rights.

Income per acre from the sale of mineral rights in the Coyle field was \$113.46 and the accrued income per acre from oil production was \$917.06. However, the accrued income per acre from oil production plus the value of estimated reserves

was \$1,201.80 (Table 5). Each acre of royalty in this field will, therefore, earn ten and one-half times as much income as was received by landowners when selling an acre of royalty.

When comparing the two incomes for all the fields as a unit, it was found that the average income per acre from the sale of subsurface rights was \$185.13, and the average accrued income per acre from oil production was \$704.53. The average accrued income per acre from oil production plus the average value of estimated reserves was \$863.26 (Table 5). Each royalty acre, therefore, will return to the owner about four and one-half times as much as was received by landowners when selling their mineral rights.

Table 5. Average Income Per Acre from Sale of Mineral Rights and Average Accrued Income from Oil Production in the Davenport, Lucien, Crescent, and Coyle Oil Fields.

Field	Average Income per acre from Sale of Mineral Rights	Average Income per acre from Accrued Oil Production	Average Accrued Income per acre from Oil Production plus value of estimated re- serves
Davenport	\$140.58	\$569.60	\$569.60
Lucien	222.45	925.53	1,081.09
Crescent	195.19	545.91	796.74
Coyle	113.46	917.06	1,201.80
Average for all fields	\$185.13	\$704.53	\$863.26

While these figures indicate that accrued income per acre from oil production is nearly four times as great as income from the sale of mineral rights, further analysis was made so that the comparison would be more equitable.

Landowners in selling their subsurface rights surrendered, for a cash amount, the chance for a future monthly income from oil production. That is, landowners

shifted the risk of receiving no return from their subsurface rights and sold their opportunity to receive any revenue from oil that might be produced. Therefore, in order to compare the income from the sale of mineral rights and income from oil production, further calculations are necessary. In other words, a present cash amount is worth more than the same amount when it is accumulated over a period of years. Thus, income accruing from oil production should be discounted in some manner. Land values are ordinarily determined by capitalizing net income at five percent. Income from the subsurface and surface, though different in some respects, are similar in nature. Therefore, it appears reasonable to discount income accruing from oil production annually at five percent for each year the field has been in production. However, in this calculation the estimated reserves for the fields can not be considered, as reserves are only estimated future production and furthermore the number of years the field will be in production is unknown.

Calculations made on this basis for the Davenport Field show that landowners sold, for \$140.58 per acre, an average annual return from oil of \$24.77 (Table 6). This annual income discounted at five percent annually for 23 years, the age of the field, amounts to \$331.63 per acre. Not considering risk, if landowners had received \$331.63 per acre for their subsurface rights, it would have made no difference whether they sold their rights or retained them. In either case the incomes would have been equal. The risk involved to the owner of mineral rights as to oil production cannot be calculated as such. However, let it be assumed, somewhat arbitrarily, that in these areas the chances for and against oil production are even.<sup>6</sup> Now if landowners received 50 percent as much

---

<sup>6</sup> The risk taken by owners of undeveloped mineral rights in respect to possible oil production is variable to say the least. Upon investigation nothing could be found to which risk could be tied and thus form a basis for computing risk into dollars. However, it is the opinion of the writer that in areas of "hot play" so far as landowners are concerned, the chances for and against their receiving oil production is about 50-50.

for their mineral rights, \$165.81, as royalty owners received from oil production, \$331.63, it would appear that landowners who sold made a wise decision, in view of the fact that they were selling their subsurface rights while there was still an even chance that no oil would be discovered on their farms. However, as cited above, landowners received only \$140.53 per acre for their mineral rights. Thus, it is reasonable to conclude that landowners either should have retained their mineral rights or held out for a higher price.

Table 6. Income from Oil Discounted Annually at Five Percent for Each Year Since Discovery of the Field and Income per Acre from the Sale of Mineral Rights.

Field	: Number of : Years : Since : Discovery	: Average Yearly : per acre Income : from Oil Produc- : tion	: Income per Acre : from Oil Produc- : tion discounted : annually at 5%	: Per Acre Income : from the sale : of Mineral Rights
Davenport	23	\$24.77	\$331.63	\$140.53
Lucien	15	61.70	640.42	222.45
Crescent	14	38.99	385.94	195.19
Coyle	8	114.63	740.87	113.46
Average All Fields	15	\$46.97	\$467.53	\$185.15

On the same basis of comparison as used for the Davenport Field, landowners in the Lucien Field sold, for \$222.45 per acre, an average annual income from oil of \$61.70. This income discounted at five percent annually for 15 years, amounts to \$640.42 per acre (Table 6). Therefore, assuming a 50-50 chance for oil production, in order for landowners who sold mineral rights to break even, they would have had to receive \$320.21 per acre for their rights. However, they lacked \$97.76 per acre from receiving this amount. On this basis landowners who sold mineral rights lost heavily and it is apparent that they would have been

far better off by retaining their subsurface rights.

In the Crescent field landowners sold, for \$195.19 per acre, an average annual income of \$33.99, which discounted at five percent for 14 years amounts to \$385.94 per acre (Table 6). When considering the stated risk, landowners, to break even, would have had to receive \$192.97 per acre for their mineral rights. Instead they received, as stated above, \$195.19 per acre, which is \$2.22 per acre more than necessary. Thus landowners who sold the subsurface rights, so far have on the average, gained by doing so.

For the Coyle field, it was found that landowners sold, for \$113.46 per acre, an average annual income of \$114.63 which discounted at five percent for eight years, amounts to \$740.87 per acre (Table 6). In order for landowners to break even in this field they would have had to sell their mineral rights for \$370.43 per acre. This amount exceeds the \$113.46 per acre they did receive by \$256.97. It is apparent, then, that landowners who sold mineral rights in the Coyle Field lost extremely heavily and would have received three times more had they held their subsurface rights. Furthermore, it should be remembered that this field is relatively young and future production will continually increase the losses to sellers of mineral rights.

When comparing income from the sale of mineral rights and accrued income from oil production on this same basis, landowners in all fields combined sold, for \$185.13 per acre, an average annual income from oil production of \$46.97, which discounted at five percent annually for 15 years, the average age of all fields, amounts to \$487.53 per acre (Table 6). Here again, when considering the risk involved, it was necessary for landowners to have sold their mineral rights for \$243.76 per acre. However, this figure exceeds the income from sale of mineral rights by \$58.63 per acre. Thus it would seem that landowners sold their subsurface rights too cheaply as they would have gained more by retaining their rights and receiving the oil revenue.

It should be pointed out that these figures are based on oil production up to the end of 1947, and that any future production will increase the losses to landowners who sold their subsurface rights. Also, it should be emphasized again that the risk that no oil production will occur cannot be calculated. At the best, it is a matter of judgment. Perhaps it should be added that the risk to a landowner is something different than the risk to a speculator. Individuals who make a business of buying mineral rights have access to far more information as to the possibility of oil discovery and the potential productivity of the field. In fact it can be said that the majority of landowners have only their intuition to guide them in making their decisions in respect to mineral rights.



## CHAPTER V

## SUMMARY AND CONCLUSION

## Summary

This study was conducted so as to examine the hypothesis formulated in Chapter II. The first part of the hypothesis states: "Landowners as a group are not receiving a majority of the royalty income accruing to the owners of mineral rights in producing oil fields."

In Chapter III, it was seen that there was no definite pattern of ownership distribution of subsurface rights (Table 2). It was found that in the Davenport and Crescent fields, landowners hold over 50 percent of the mineral rights (55.1 and 61.0 percent respectively), and that in the Lucien and Coyle fields, landowners hold less than 50 percent (35.0 and 36.0 percent respectively). These figures indicate that landowners are receiving a majority of the royalty income in two of the fields studied--that is, the Davenport and Crescent fields. However, in the Lucien and Coyle fields, landowners are not receiving a majority of the royalty income. Thus the hypothesis is only partially correct; however, when all fields are examined as a unit, landowners hold 49.5 percent of the subsurface rights. This shows that if the four fields studied are representative of producing oil fields in the state, landowners are not receiving a majority of the royalty income, and on this basis the hypothesis as stated is correct.

The second part of the hypothesis states: "It would have been more profitable for the landowners to have held their mineral rights in order to receive the revenue from actual oil production than to have sold their rights for a cash figure prior to and during the development of the field."

This statement was examined in Chapter IV. On the basis of unadjusted data it was found that income per acre from the sale of mineral rights never exceeded accrued income per acre from oil production in any of the fields studied (Table 5).

However, it was pointed out that landowners in selling their subsurface rights for a present cash figure are giving up their chance for a monthly future income from oil production. That is, they are not only surrendering their claim to any further revenue accruing to the rights, but also they are transferring the risk that no oil will be discovered. It was further pointed out that a present cash amount is worth considerably more than the same amount accumulating over a period of years. Thus, in order to make a fair comparison of income from the sale of mineral rights and income accrued from oil production, it was deemed necessary to discount the annual income from oil production at five percent for each year since the discovery of the field. This calculation places both incomes on a comparable basis, with the exception that risk has not been considered. It was stated that the risk of receiving no oil production cannot be calculated as such. Therefore it was assumed, as a matter of judgment, that the chances for and against oil production in areas of "hot play" are even. On this basis then, landowners who sold their mineral rights would have broken even had they sold their rights for 50 percent as much as the discounted income per acre from oil production.

By this process calculations showed that, with the possible exception of the Crescent field, landowners in the fields studied sold their mineral rights too cheaply. In the Davenport field landowners needed to receive \$165.81 per acre for their mineral rights in order to break even. However, instead they received only \$140.58 per acre which means an average loss of \$15.23 per acre to landowners who sold their mineral rights.

In the Lucien field, it was necessary for landowners to have sold their mineral rights for \$320.21 per acre in order to break even. However, when this figure is compared to the \$222.45 per acre landowners did receive for their rights, it was found that there was a loss of \$97.76 on each acre of mineral

rights sold.

For landowners to break even in the Crescent field, it was necessary for them to receive \$192.97 per acre for their mineral rights. Instead they received \$195.19 per acre for their rights, which is \$2.22 per acre more than necessary to break even. Apparently landowners in this field have, so far, gained slightly by selling their mineral rights.

In the Coyle field, landowners lost extremely heavily, \$256.97 per acre, by selling their subsurface rights for \$113.46 per acre. The amount necessary for landowners, who sold mineral rights, to break even was \$370.43 per acre. Further it was pointed out in Chapter IV that the Coyle field is a relatively new field and that future production will greatly increase the losses to landowners who sold their subsurface rights.

On this same basis of comparison for all fields as a unit, landowners had to receive \$243.76 per acre for their mineral rights in order to break even. However, this figure exceeds the average income per acre from the sale of mineral rights by \$58.63 per acre. Thus for each acre of mineral rights landowners sold they lost \$58.63, which means that even when allowing 50 percent of the income for risk the average price received for subsurface rights in all fields as a unit was too low.

In concluding, it should again be mentioned that oil production data are as of December 31, 1947, and that any future production--and all fields are still in production--will increase the losses to landowners who sold their subsurface rights. Further, the variable risk element cannot be calculated and, as such, must be a matter of judgment.

#### Conclusions

1. Landowners as a group are not receiving a majority of the royalty income accruing to owners of mineral rights in producing oil fields. However,

on an individual basis, the proportion of the royalty income received by landowners varies from none to 100 percent.

2. It would have been more profitable for landowners to have retained their mineral rights and received the income from oil production rather than to have sold their rights for a cash figure prior to and during the development of the field.

3. In general, landowners have had inadequate information upon which to base their subsurface transactions.

APPENDIX

The legal descriptions of the oil fields studied are as follows:

Davenport Field; Lincoln County, Oklahoma

- TI4N-R5E: Sec. 2 -- All of section.  
 Sec. 3 -- All of section.  
 Sec. 4 -- NE NE & SE NE & E $\frac{1}{2}$  SE.  
 Sec. 10 -- NE $\frac{1}{2}$  & NE $\frac{1}{2}$  SE & SE NW,  
 Sec. 11 -- NE NE & W $\frac{1}{2}$  NE & NW SW & NW.
- TI5N-R5E: Sec. 26 -- S $\frac{1}{2}$  SW.  
 Sec. 27 -- S $\frac{1}{2}$  S $\frac{1}{2}$ .  
 Sec. 33 -- SE NE & NE SE.  
 Sec. 34 -- NE NE & W $\frac{1}{2}$  NE & S $\frac{1}{2}$  NW.  
 Sec. 35 -- SW NE & S $\frac{1}{2}$  SE & NW SE & E $\frac{1}{2}$  SW & SW SW & E $\frac{1}{2}$  NW & NW NW.

Lucien Field; Logan and Noble Counties, Oklahoma

- TI9N-R2W: Sec. 3 -- W $\frac{1}{2}$  NW $\frac{1}{2}$ .  
 Sec. 4 -- NE $\frac{1}{2}$  NE $\frac{1}{2}$  & W $\frac{1}{2}$  NE $\frac{1}{2}$  & NW $\frac{1}{2}$  SE $\frac{1}{2}$  & E $\frac{1}{2}$  NW $\frac{1}{2}$  & NW $\frac{1}{2}$  NW $\frac{1}{2}$ .  
 Sec. 5 -- NE $\frac{1}{2}$  NE $\frac{1}{2}$ .
- T20N-R2W: Sec. 7 -- SE $\frac{1}{2}$  SE $\frac{1}{2}$ .  
 Sec. 8 -- SW $\frac{1}{2}$  SW $\frac{1}{2}$ .  
 Sec. 16 -- SW $\frac{1}{2}$  SW $\frac{1}{2}$  & SW $\frac{1}{2}$  NW $\frac{1}{2}$ .  
 Sec. 17 -- SW $\frac{1}{2}$  NE $\frac{1}{2}$  & S $\frac{1}{2}$  & S $\frac{1}{2}$  NW $\frac{1}{2}$ .  
 Sec. 18 -- E $\frac{1}{2}$  E $\frac{1}{2}$ .  
 Sec. 19 -- E $\frac{1}{2}$  NE $\frac{1}{2}$ .  
 Sec. 20 -- All of section.  
 Sec. 21 -- SW $\frac{1}{2}$  SW $\frac{1}{2}$ .  
 Sec. 27 -- W $\frac{1}{2}$  SW $\frac{1}{2}$  & SW $\frac{1}{2}$  NW $\frac{1}{2}$ .  
 Sec. 28 -- SW $\frac{1}{2}$  NE $\frac{1}{2}$  & S $\frac{1}{2}$  & S $\frac{1}{2}$  NW $\frac{1}{2}$  & NW $\frac{1}{2}$  NW $\frac{1}{2}$ .  
 Sec. 29 -- E $\frac{1}{2}$  & NE $\frac{1}{2}$  SW $\frac{1}{2}$  & E $\frac{1}{2}$  NW $\frac{1}{2}$ .  
 Sec. 32 -- E $\frac{1}{2}$  NE $\frac{1}{2}$  & SW $\frac{1}{2}$  NE $\frac{1}{2}$  & E $\frac{1}{2}$  SE $\frac{1}{2}$ .  
 Sec. 33 -- All of section.  
 Sec. 34 -- NW $\frac{1}{2}$  SE $\frac{1}{2}$  & S $\frac{1}{2}$  SW $\frac{1}{2}$  & W $\frac{1}{2}$  NW $\frac{1}{2}$ .

Crescent Field; Logan County, Oklahoma

- TI6N-R4W: Sec. 4 -- Lot 1 (NE $\frac{1}{2}$  NE $\frac{1}{2}$ \*).
- TI7N-R4W: Sec. 11 -- NW $\frac{1}{2}$  SE $\frac{1}{2}$ .  
 Sec. 12 -- NE $\frac{1}{2}$  SW $\frac{1}{2}$  & SW $\frac{1}{2}$  NW $\frac{1}{2}$ .  
 Sec. 13 -- W $\frac{1}{2}$  SW $\frac{1}{2}$ .  
 Sec. 14 -- SE $\frac{1}{2}$  NE $\frac{1}{2}$  & SE $\frac{1}{2}$  & NE $\frac{1}{2}$  SW $\frac{1}{2}$  & W $\frac{1}{2}$  SW $\frac{1}{2}$  & SE $\frac{1}{2}$  NW $\frac{1}{2}$ .  
 Sec. 15 -- E $\frac{1}{2}$  NE $\frac{1}{2}$  & SE $\frac{1}{2}$  & SE $\frac{1}{2}$  SW $\frac{1}{2}$ .

\* Fractional.

- Sec. 22 - All of section.  
 Sec. 23 -- NE $\frac{1}{4}$  & W $\frac{1}{2}$  SE $\frac{1}{4}$  & W $\frac{1}{2}$ .  
 Sec. 25 -- NW $\frac{1}{4}$  SW $\frac{1}{4}$  & W $\frac{1}{2}$  NW $\frac{1}{4}$ .  
 Sec. 26 -- NE $\frac{1}{4}$  & NE $\frac{1}{4}$  SE $\frac{1}{4}$  & W $\frac{1}{2}$  SE $\frac{1}{4}$  & N $\frac{1}{2}$  SW $\frac{1}{4}$  & NW $\frac{1}{4}$ .  
 Sec. 27 -- All of section.  
 Sec. 28 -- E $\frac{1}{2}$  & E $\frac{1}{2}$  W $\frac{1}{2}$ .  
 Sec. 33 -- NE $\frac{1}{4}$  & E $\frac{1}{2}$  SE $\frac{1}{4}$  & NW $\frac{1}{4}$  SE $\frac{1}{4}$  & NE $\frac{1}{4}$  NW $\frac{1}{4}$ .  
 Sec. 34 -- W $\frac{1}{2}$  NE $\frac{1}{4}$  & NE $\frac{1}{4}$  SW $\frac{1}{4}$  & W $\frac{1}{2}$  SW $\frac{1}{4}$  & NW $\frac{1}{4}$ .  
 Sec. 35 -- NE $\frac{1}{4}$  NW $\frac{1}{4}$ .

Coyle Field; Payne County, Oklahoma

- T17N-R1E: Sec. 2 -- S $\frac{1}{2}$  SE $\frac{1}{4}$  & SE $\frac{1}{4}$  SW $\frac{1}{4}$ .  
 Sec. 11 -- E $\frac{1}{2}$  NE $\frac{1}{4}$  & NW $\frac{1}{4}$  NE $\frac{1}{4}$  & E $\frac{1}{2}$  SE $\frac{1}{4}$  & NE $\frac{1}{4}$  NW $\frac{1}{4}$ .  
 Sec. 12 -- SW $\frac{1}{4}$  NE $\frac{1}{4}$  & Lot 3 (NE $\frac{1}{4}$  SE $\frac{1}{4}$  \* & NW $\frac{1}{4}$  SE $\frac{1}{4}$  \*) Left Bank  
 & NE $\frac{1}{4}$  SW $\frac{1}{4}$  & Lot 1 (SE $\frac{1}{4}$  SW $\frac{1}{4}$  \*) Left Bank & W $\frac{1}{2}$  SW $\frac{1}{4}$   
 & NW $\frac{1}{4}$ .  
 Sec. 13 -- Lot 4 (NE $\frac{1}{4}$  NW $\frac{1}{4}$  \*) Left Bank  
 & Lot 2 (SW $\frac{1}{4}$  NW $\frac{1}{4}$  \*) Left Bank & NW $\frac{1}{4}$  NW $\frac{1}{4}$ .  
 Sec. 14 -- NE $\frac{1}{4}$  NE $\frac{1}{4}$ .

\* Fractional.

Appendix Table I. Basic Data for the Davenport Oil Field, Lincoln County, Oklahoma

No. of Tract	Size of farm Acres	Acres of mineral rights owned by landowners	Acres of mineral rights owned by speculators	Acres of mineral rights owned by quasi-speculators	Sales price per acre of mineral rights sold Dollars	Value of mineral rights sold Dollars	Percent of mineral rights owned by landowners	Percent of mineral rights owned by speculators	Percent of mineral rights owned by quasi-speculators
1	80	80	--	--	--	--	100.00	--	--
2	80	80	--	--	--	--	100.00	--	--
3	160	160	--	--	--	--	100.00	--	--
4	160	--	80	80	193.75	15,500.	--	50.00	50.00
5	80	--	60	20	200.00	12,000.	--	75.00	25.00
6	80	53	27	--	10.00	270.	33.80	50.94	--
7	80	20	20	40	175.00	3,500.	25.00	25.00	50.00
8	80	--	40	40	6.25	250.	--	50.00	50.00
9	40	--	20	20	250.00	5,000.	--	50.00	50.00
10	40	--	20	20	250.00	5,000.	--	50.00	50.00
11	80	30	50	--	150.00	7,500.	37.50	62.50	--
12	80	30	50	--	150.00	7,500.	37.50	62.50	--
13	160	35	125	--	275.00	34,375.	21.97	78.13	--
14	80	40	40	--	200.00*	8,000.	50.00	50.00	--
15	80	80	--	--	--	--	100.00	--	--
16	160	--	--	160	--	--	--	--	100.00
17	80	40	30	10	237.50	7,125.	50.00	37.50	12.50
18	80	80	--	--	--	--	100.00	--	--
19	160	80	80	--	187.50	15,000.	50.00	50.00	--
20	40	20	20	--	200.00	4,000.	50.00	50.00	--
21	20	5	15	--	600.00	9,000.	25.00	75.00	--
22	40	20	20	--	200.00	4,000.	50.00	50.00	--
23	40	10	30	--	300.00	9,000.	25.00	75.00	--
24	20	20	--	--	--	--	100.00	--	--
25	60	45	15	--	66.66	1,000.	75.00	25.00	--
26	100	100	--	--	--	--	100.00	--	--
27	160	--	140	20	200.00*	--	--	87.50	12.50
28	40	30	10	--	250.00	2,500.	75.00	25.00	--
29	120	113	7	--	250.00	1,750.	94.20	5.80	--
30	160	75	85	--	104.50	8,882.	46.90	53.10	--
31	80	80	--	--	--	--	100.00	--	--
32	80	47	33	--	294.00	9,702.	58.80	41.20	--
33	80	80	--	--	--	--	100.00	--	--
34	80	80	--	--	--	--	100.00	--	--
35	80	80	--	--	--	--	100.00	--	--
36	80	70	10	--	25.00	250.	87.50	12.50	--
37	80	80	--	--	--	--	100.00	--	--
38	40	13	27	--	111.00	2,997.	32.50	67.50	--
39	40	40	--	--	--	--	100.00	--	--
40	160	--	25	135	80.00	2,000.	--	15.63	84.37

(Continued)



Appendix Table I. Basic Data for the Davenport Oil Field, Lincoln County, Oklahoma - Continued

No. of Tract	Size of farm Acres	Acres of mineral rights owned by landowners	Acres of mineral rights owned by speculators	Acres of mineral rights owned by quasi-speculators	Sales price per acre of mineral rights sold Dollars	Value of mineral rights sold Dollars	Percent of mineral rights owned by landowners	Percent of mineral rights owned by speculators	Percent of mineral rights owned by quasi-speculators
41	160	80	54	26	25.00	1,350.	50.00	33.75	16.25
42	160	55	105	--	152.94	16,059.	34.40	65.60	--
43	160	54	106	--	10.00	1,060.	33.80	65.20	--
44	80	60	20	--	100.00	2,000.	75.00	25.00	--
45	80	80	--	--	--	--	100.00	--	--
46	80	40	40	--	20.00	800.	50.00	50.00	--
47	80	80	--	--	--	--	100.00	--	--
48	160	160	--	--	--	--	100.00	--	--
Total	4,400	2,425	1,404	571		197,370.			
Average	91.66	60.63	45.29	51.91	140.58		55.11	31.91	12.98

\* Assumed Price per acre by examining selling prices adjacent to the tract.

Source: Public records in the Lincoln County Clerk's Office.

Appendix Table II. Basic Data for the Lucien Oil Field, Noble and Logan Counties, Oklahoma

No. of Tract	Size of farm	Acres of mineral rights owned by landowners	Acres of mineral rights owned by speculators	Acres of mineral rights owned by quasi-speculators	Sales price per acre of mineral rights sold	Value of mineral rights sold	Percent of mineral rights owned by landowners	Percent of mineral rights owned by speculators	Percent of mineral rights owned by quasi-speculators
	Acres				Dollars	Dollars			
1	160	160	—	—	—	—	100.00	—	—
2	160	48	112	—	223.21	25,000.	30.00	70.00	—
3	160	—	90	70	175.00*	15,750.	—	56.25	43.75
4	160	30	130	—	150.00	19,500.	18.75	81.25	—
5	160	75	85	—	145.00	12,325.	46.88	53.12	—
6	160	80	80	—	225.00*	10,000.	50.00	50.00	—
7	160	10	150	—	433.33	65,000.	6.25	93.75	—
8	160	33	127	—	425.00*	53,975.	20.63	79.37	—
9	160	60	100	—	500.00	50,000.	37.50	62.50	—
10	160	—	158	2	692.30	109,383.	—	98.75	1.25
11	160	30	130	—	100.00	13,000.	18.75	81.25	—
12	160	47	113	—	145.60	16,453.	29.38	70.62	—
13	160	47	113	—	145.60	16,453.	29.38	70.62	—
14	160	160	—	—	—	—	100.00	—	—
15	80	—	—	80	—	—	—	—	100.00
16	80	13	67	—	164.20	11,001.	16.25	83.75	—
17	160	80	80	—	300.00	24,000.	50.00	50.00	—
18	160	—	105	55	250.00*	26,250.	—	65.62	34.38
19	160	120	40	—	12.50	500.	75.00	25.00	—
20	160	—	—	160	—	—	—	—	100.00
21	160	40	120	—	156.25	18,750.	25.00	75.00	—
22	160	35	125	—	136.00	17,000.	21.88	78.12	—
23	160	30	130	—	260.00	33,800	18.75	81.25	—
24	160	32	128	—	81.08	10,378	20.00	80.00	—
25	160	20	140	—	271.43	38,000.	12.50	87.50	—
26	160	40	120	—	100.00	12,000.	25.00	75.00	—
27	160	70	90	—	270.00	24,300.	43.75	56.25	—
28	160	70	90	—	133.33	12,000.	43.75	56.25	—
29	98	83	15	—	300.00	4,500.	84.69	15.31	—
30	160	65	95	—	163.16	15,500.	40.63	59.37	—
31	80	40	40	—	100.00	4,000.	50.00	50.00	—
32	80	35	45	—	244.44	11,000.	43.75	56.25	—
33	80	80	—	—	—	—	100.00	—	—
34	80	80	—	—	—	—	100.00	—	—
35	160	—	140	20	108.60	15,204.	—	87.50	12.50
36	120	—	104	16	108.60	11,294.	—	86.67	13.33
37	80	23	57	—	131.58	7,500.	28.75	71.25	—
Total	5,258	1,736	3,119	403		693,816.			
Average	142.11	57.87	100.61	57.57	222.45		33.02	59.32	7.66

\* Assumed price per acre by examining selling prices on adjacent tracts.

Source: Public records in the Noble and Logan County Clerks' Offices.

Appendix Table III. Basic Data for the Crescent Oil Field, Logan County, Oklahoma

No. of Tract	Size of farm Acres	Acres of mineral rights owned by landowners	Acres of mineral rights owned by speculators	Acres of mineral rights owned by quasi-speculators	Sales price per acre of mineral rights sold Dollars	Value of mineral rights sold Dollars	Percent of mineral rights owned by landowners	Percent of mineral rights owned by speculators	Percent of mineral rights owned by quasi-speculators
1	160	123	37	—	255.00	9,435.	76.87	23.13	—
2	160	90	70	—	214.28	15,000.	56.25	43.75	—
3	160	140	20	—	125.00	2,500.	87.50	12.50	—
4	160	148	12	—	166.66	2,000.	92.50	7.50	—
5	160	160	—	—	—	—	100.00	—	—
6	120	120	—	—	—	—	100.00	—	—
7	160	80	80	—	100.00	8,000.	50.00	50.00	—
8	160	160	—	—	—	—	100.00	—	—
9	80	80	—	—	—	—	100.00	—	—
10	80	15	65	—	130.00	8,450.	18.75	81.25	—
11	10	10	—	—	—	—	100.00	—	—
12	80	35	45	—	180.00	8,100.	43.75	56.25	—
13	160	80	80	—	150.00	12,000.	50.00	50.00	—
14	160	160	—	—	—	—	100.00	—	—
15	160	40	120	—	125.00	15,000.	25.00	75.00	—
16	40	30	10	—	200.00	2,000.	75.00	25.00	—
17	80	45	35	—	115.00	4,025.	56.25	43.75	—
18	40	10	30	—	115.00	3,450.	25.00	75.00	—
19	160	100	60	—	50.00	3,000.	62.50	37.50	—
20	160	160	—	—	—	—	100.00	—	—
21	160	—	—	160	—	—	—	—	100.00
22	160	160	—	—	—	—	100.00	—	—
23	160	160	—	—	—	—	100.00	—	—
24	160	—	—	160	—	—	—	—	100.00
25	80	35	45	—	650.00	29,250.	43.75	56.25	—
26	160	144	16	—	250.00	4,000.	90.00	10.00	—
27	160	40	120	—	50.00	6,000.	25.00	75.00	—
28	80	—	80	—	95.00	7,600.	—	100.00	—
29	80	40	40	—	125.00	5,000.	50.00	50.00	—
30	160	140	20	—	300.00*	6,000.	87.50	12.50	—
31	80	65	15	—	500.00	7,500.	81.25	18.75	—
32	80	20	20	40	500.00	10,000.	25.00	25.00	50.00
33	160	—	—	160	—	—	—	—	100.00
34	160	155	5	—	200.00	1,000.	96.88	3.12	—
35	80	28	52	—	700.00	36,400.	35.00	65.00	—
36	40	20	20	—	700.00	14,000.	50.00	50.00	—
37	40	6	34	—	700.00	23,800.	15.00	85.00	—
38	80	—	80	—	110.00	8,000.	—	100.00	—
39	160	50	—	110	—	—	31.25	—	68.75
40	80	—	—	80	—	—	—	—	100.00

(Continued)

Appendix Table III. Basic Data for the Crescent Oil Field, Logan County, Oklahoma - Continued

No. of Tract	Size of farm Acres	Acres of mineral rights owned by landowners	Acres of mineral rights owned by speculators	Acres of mineral rights owned by quasi-speculators	Sales price per acre of mineral rights sold Dollars	Value of mineral rights sold Dollars	Percent of mineral rights owned by landowners	Percent of mineral rights owned by speculators	Percent of mineral rights owned by quasi-speculators
41	80	80	—	—	—	—	100.00	—	—
42	160	80	80	—	125.00*	10,000.	50.00	50.00	—
43	160	—	60	100	100.00	6,000.	—	37.50	62.50
44	160	160	—	—	—	—	100.00	—	—
45	160	160	—	—	—	—	100.00	—	—
46	80	80	—	—	—	—	100.00	—	—
47	80	40	40	—	110.00*	4,000.	50.00	50.00	—
Total	5,650	3,449	1,391	810		271,510.			
Average	120.21	86.23	47.97	115.71	195.19		61.04	24.62	14.34

\* Assumed price per acre by examining selling prices on adjacent tracts.

Source: Public Records in the Logan County Clerk's Office.

Appendix Table IV. Basic Data for the Coyle Oil Field, Payne County, Oklahoma, and Total and Average Figures for All Fields

No. of Tract	Size of farm Acres	Acres of mineral rights owned by landowners	Acres of mineral rights owned by speculators	Acres of mineral rights owned by quasi-speculators	Sales price per acre of mineral rights sold Dollars	Value of mineral rights sold Dollars	Percent of mineral rights owned by landowners	Percent of mineral rights owned by speculators	Percent of mineral rights owned by quasi-speculators	
1	160	25	135	—	145.75	19,676.	15.63	84.37	—	
2	80	—	40	40	25.00	1,000.	—	50.00	50.00	
3	160	160	—	—	—	—	100.00	—	—	
4	160	25	135	—	85.19	11,500.	15.63	84.37	—	
5	80	8	72	—	96.53	6,950.	10.00	90.00	—	
6	80	16	64	—	91.79	5,875.	20.00	80.00	—	
7	80	12	68	—	238.97	16,250.	15.00	85.00	—	
8	80	20	60	—	225.00	13,500.	25.00	75.00	—	
9	160	111	49	—	176.53	8,650.	69.38	30.62	—	
10	55	20	35	—	114.29	4,000.	36.36	63.64	—	
11	80	20	60	—	62.50	3,750.	25.00	75.00	—	
12	80	20	60	—	58.33	3,500.	25.00	75.00	—	
13	128	34	95	—	82.98	7,800.	26.56	73.44	—	
14	160	85	75	—	66.67	5,000.	53.13	46.87	—	
Total 14	1,543	556	947	40		107,451.				
Average	110.00	42.77	72.85	40.00	113.45		36.03	61.37	2.60	
Total All Fields										
146	16,851	8,166	6,761	1,824		1,270,147.				
Average All Fields										
	115.42	66.39	65.00	70.15	185.13		48.50	40.10	10.80	

Source: Public records in the Payne County Clerk's Office.

APPENDIX TABLE V. Basic Data for the Davenport, Lucein, Crescent, and Coyle Oil Fields.

Year	Annual production	Annual production	Annual production	Annual production	Average	Annual in-	Annual in-	Annual in-	Annual in-
	Davenport	Lucein	Crescent	Coyle	yearly price of oil at well	come from oil Davenport	come from oil Lucein	come from oil Crescent	come from oil Coyle
	<u>Barrels</u>	<u>Barrels</u>	<u>Barrels</u>	<u>Barrels</u>		<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
1924					\$1.43				
1925	2,233,000				1.68	\$3,751,440			
1926	4,231,000				1.88	7,954,280			
1927	1,177,000				1.30	1,530,100			
1928	730,000				1.17	854,100			
1929	527,000				1.27	669,290			
1930	333,000				1.19	455,770			
1931	328,250				.65	213,363			
1932	299,750				.87	260,783			
1933	267,100	290,000	154,543		.67	178,957	\$194,300	\$103,547	
1934	270,150	2,903,000	1,237,000		1.00	270,150	2,903,000	1,237,000	
1935	231,000	3,744,000	2,003,000		.96	221,760	3,594,240	1,922,880	
1936	261,000	4,542,000	2,301,000		1.09	284,490	4,950,780	2,508,090	
1937	343,000	5,047,000	3,851,000		1.13	404,740	5,955,460	4,544,180	
1938	197,000	3,324,000	1,637,000	44,174	1.13	222,610	3,756,120	1,906,310	\$49,917
1939	168,000	3,017,000	933,000	386,000	1.02	171,360	3,077,340	1,002,660	393,720
1940	169,994	2,750,000	769,000	337,000	1.02	173,393	2,805,000	784,380	649,740
1941	200,000	994,000	1,345,000	991,000	1.14	228,000	1,133,160	2,103,300	1,129,740
1942	160,240	1,363,000	1,124,000	1,183,000	1.19	190,685	1,621,970	1,337,560	1,410,150
1943	200,947	1,575,000	752,000	1,627,000	1.20	241,136	1,890,000	902,400	1,952,400
1944	242,445	1,877,000	752,000	1,660,000	1.21	293,558	2,271,170	909,920	2,008,600
1945	276,155	2,067,000	576,000	1,468,000	1.22	336,909	2,521,740	702,720	1,790,960
1946	450,755	550,995	1,568,876	710,810	1.42	640,072	782,413	2,227,804	1,009,350
1947	253,059	756,201	1,273,038	474,653	1.93	503,215	1,474,592	2,462,424	925,573
Total	13,427,545	34,800,196	20,876,462	9,183,637		\$20,049,961	\$38,931,285	\$24,675,175	\$11,320,150

Source: World Oil Weekly, Yearbook Issue, February, 1948. Oil and Gas Journal, January 29, 1948. Minerals Yearbooks, 1938, 1942, 1945. United States Department of the Interior. Oil Scouts and Landmen's Association Yearbooks, 1939, 1942, 1945, 1946, 1947. Agricultural Economics Department Files (unpublished).

## BIBLIOGRAPHY

1. Davidson, R. D. and Parcher L. A., The Influence of Mineral Rights on Transfers of Farm Real Estate in Oklahoma, Oklahoma Agricultural Experiment Station Bulletin, No. B - 278, February, 1944.
2. Davidson R. D. and Wernimont K., Tenure Arrangements in Oklahoma Oil Fields, The Journal of Land and Public Utility Economics, Vol. XIX, No. 1, February, 1943.
3. Edwards, Roy V., A Study of the Source and Distribution of Income Arising From the Ownership of Mineral Rights in Payne County, Oklahoma, Master's Thesis, Oklahoma A. & M. College, 1947.
4. Minerals Yearbook, United States Department of the Interior, Years 1933, 1936, 1939, 1941, and 1945.
5. National Oil Scouts and Landmen's Association, Yearbook, Volumes IX, XIII, and XVIII.
6. Noustadt, Jean, A Study of the Effect of Oil and Gas Development Upon Land Utilization in the Lucien Oil Field, Noble and Logan Counties, Oklahoma, Master's Thesis, Oklahoma A. & M. College, 1948.
7. Oil and Gas Journal, Petroleum Publishing Company, Tulsa, Oklahoma.
8. World Oil, Gulf Publishing Company, Houston, Texas.

Typist - Carol Ealy

(Appendix Tables I-IV typed by Mrs. Barbara Walker)