CASE NO. 22

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

THE PETITION OF ANDERSON PRICHARD OIL CORPORATION AND STANOLIND OIL & GAS COMPANY, FOR THEMSELVES AND FOR OTHER OPERATORS IN THAT PART OF THE LANGLIE POOL, LEA COUNTY, LYING GENERALLY IN SECTIONS 4, 5, 8 AND 9, T. 25 S., R. 37 E., N.M.P.M., FOR AN ORDER BY THE COMMISSION REGARDING THE UNITIZATION, REPRESSURING, OR OTHER CONSERVATION MEASURES AS TO THAT PORTION OF SAID POOL IN ORDER TO INCREASE THE ULTIMATE RECOVERY THEREFROM.

TRANSCRIPT OF PROCEEDINGS AT HEARING IN THE
CITY HALL BUILDING
SANTA FE, NEW MEXICO
DECEMBER 11, 1940.

Pursuant to order of the Commission, duly made and entered, setting December 11, 1940, at nine o'clock A. M., for hearing in the above entitled matter, said hearing was convened at nine o'clock A. M. of December 11, 1940, in the City Hall Building, Santa Fe, New Mexico, the Commission sitting as follows:

HON. FRANK WORDEN, Commissioner of Public Lands, Secretary
Hon. A. Andreas, State Geologist, Member
Hon. Carl B. Livingston, Attorney for the Commission

APPEARANCES:

NAME	COMPANY	ADDRESS
J. O. Seth	Stanolind	Santa Fe, N. M.
Frank Gray	Anderson-Prichard Oil Corp.	Hobbs, N. M.
G. H. Card	Stanolind O. & G. Co.	Ft. Worth, Texas
J. C. Gordon	The Illinois Oil Co.	Dallas, Texas
Ernest A. Hanson	U.S.Geol. Survey	Roswell, N. M.
C. C. Cragin	El Paso Natural Gas Co.	El Paso, Texas
Allen B. Gibson	Cities Service Oil Co.	Hobbs, N. M.
Delmear R. Guinn	" " " "	Hobbs, N. M.
S. P. Hannifin	Magnolia Petroleum Co.	Roswell, N. M.
Ed. Downing	" " "	Kermit, Texas
J. G. Benton	Westates Pet. Corp.	Jal, N. M.
R. A. Earle	" " "	Long Beach, Cal.
Glenn Staley	Proration Office	Hobbs, N. M.
Edger Kraus	Atlantic Pet. Co.	Carlsbad, N. M.
J. L. Griffith	Humble O. & R. Co.	Roswell, N. M.
D. R. McKeithan	Phillips Pet. Co.	Bartlesville, Okla.
C. A. Daniels	" " "	Amarillo, Texas
Weston Payne	Anderson Prichard Oil Corp.	Oklahoma City, Okla.
W. H. Brown	" " " "	Oklahoma City, Okla.
Henry Gedford	Gulf	Roswell, N. M.
Joe Griffith	Humble	Roswell, N. M.
Ray Yarborung	O.C.L.	Hobbs, N. M.
Tom Davis	O.C.L.	Hobbs, N. M.
Ray Rodgers	State of New Mexico	Santa Fe, N. M.

The hearing was called to order by Mr. Frank Worden, who announced that the Chairman of the Commission, the Honorable John E. Miles, Governor of New Mexico, was out of the state. At the request of Mr. Worden, Mr. Livingston read the call of the hearing as follows:

"NOTICE FOR PUBLICATION
STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

The Oil Conservation Commission, by law invested with jurisdiction as the oil and gas regulatory body of the State of New Mexico, hereby gives notice of the following public hearing to be held at the Capitol, Santa Fe, New Mexico:

Case No. 22

The petition of Anderson-Prichard Oil Corporation and Stanolind Oil & Gas Company, for themselves and for other operators in that part of the Langlie Pool, Lea County, lying generally in Sections 4, 5, 8 and 9, T. 25 S., R. 37 E., N.M.P.M., for an order by the Commission regarding the unitization, repressuring, or other conservation measures as to that portion of said Pool in order to increase the ultimate recovery therefrom. This case is set for 9:00 A. M., December 11, 1940.

Any person having any interest in the subject of the said hearings shall be entitled to be heard.

Given under the seal of said Commission at Santa Fe, New Mexico, on November 25, 1940.

OIL CONSERVATION COMMISSION

By (Sgd.) FRANK WORDEN
Commissioner of Public Lands

By (Sgd.) A. ANDREAS
State Geologist"

BY MR. WORDEN: The Commission is ready to proceed.

BY MR. SETH: We would like to produce witnesses on behalf of petitioners.

(Witnesses called and sworn, and Exhibits 1, 2 and 3 marked for identification)

W. K. DAVIS

being called as a witness on behalf of the petitioners, and having been first duly sworn, was examined by Mr. Seth, and testified as follows:

DIRECT EXAMINATION

Q Will you please state your name?

A W. K. Davis

Q What is your profession?

A Geologist.

Q And by whom are you presently employed?

A The El Paso Natural Gas Company.

Q Will you state briefly your training and experience?

A Two and one-half years field experience in geology; four years college work.

Q Are you familiar with the portion of the Langlie Pool in Lea County involved in this yearing?

A I am.

Q Have you worked in that portion of the pool since you have been employed by the El Paso Natural Gas Company?

A I have.

Q Mr. Davis, referring to Petitioner's Exhibit No. 1, here on this easel, this solid color, what does that represent?

A That is the acreage that will participate in the unit.

Q That will be the acreage that will actually participate if the agreement is apprived?

A Right.

Q And these shaded lines?

A That is the acreage that will have the opportunity to participate in case of future development.

Q And these lines on this exhibit, what do they represent?

A Contours on top of the Langlie Pool at ten foot intervals.

Q This 260, 270, 280, does that indicate --

A Sub-sea -- the formation encountered.

Q The smaller figures then indicate it is closer to sea level -- the lower figures indicate it is higher?

A Right.

Q What type of structure is the oil produced in this portion of the Langlie Pool coming from?

A The zone contour map extends south from the main Langlie field with a dip of approximately 100 feet to the mile to the south and east and west.

Q Why is the production limited on the down slope of that area?

A As you see, going down slope the character of the zone changes from a sand to an impervious sandy shale, and it, more or less, is so tight there is no commercial production.

Q Have there been wells drilled to the south and east?

A Yes, two wells to the south and one to the east. In each case they penetrated the Langlie producing zone, and found them not productive and plugged, and completed them as gas wells.

Q That refers to the two wells immediately south?

A Yes, sir.

Q And they plugged that? The one to the southeast, marked "5", is a plain dry hole?

A I believe it is a dry hole, yes, sir.

Q Would the condition of the zone you have testified about -- you stated, I believe, the sand on the dip to the south and east changed to sandy shale?

A Yes, sir.

Q What would that indicate as to a favorable or unfavorable condition for a repressuring project?

A It would indicate a favorable condition, in that it would eliminate input gas by horizontal reinjection in each direction.

Q And as already shown by production, as being in place until disturbed?

A It is evident the cap immediately above the Langlie zone is impervious enough to form an excellent reservoir.

Q The fact that the oil has remained there throughout an indefinite time would indicate the cap is impervious?

A That is right.

Q Will you refer to Exhibits 2 and 3 and explain what those mean?

A Exhibit A-A, No. 2, is a north-south cross section in this area.

Q Is it indicated by A-A on Exhibit No. 1?

A Yes.

Q What is No. 3, marked "Cross B-B"?

A A cross section east and west across the area.

Q Across on the line marked "B-B" on No. 1?

A Yes, sir.

Q Do these exhibits show the condition in each well drilled in?

A Yes, sir, they are developed from the sample determination of the formation on the well.

Q I don't know whether the map shows it or not, but will you explain the colors on the exhibit?

A The green represents solid formation; the brown represents the

the anhydrite; the blue, the lime; the red is the shale or sand.

Q They are marked in here in straight lines. Is that brought in merely on a percentage basis?

A The samples are determined by percentage.

Q In this well is it solid or anhydrite down to where it is entirely blank?

A In most cases the samples were not taken, but markers were generally used over the entire field up to the solid section.

Q Are there two zones in that area?

A Principally the main sand body, as correlated on this cross section, and probably two or three sand members comprise this.

Q Are you speaking now of the Langlie zone?

A Yes sir.

Q Is that indicated approximately by the exhibit marked "Top Langlie Sand"?

A The marker used principally in that area was in regard to contour work, etc.

Q Now, this shows the Yates Sand and the Langlie Sand. Which is the oil producing sand?

A The Langlie Sand is the oil producing sand.

Q What, if anything, is produced from the Yates Sand?

A The Yates is principally a gas producing horizon.

Q Are any wells in the area producing from it?

A Several that were capable. I don't believe there are any producing gas at the present time.

Q What would you say is the approximate thickness of the Langlie Sand?

A The average thickness of the area would probably be around 13 to 14 feet.

Q Go back to Exhibit No. 1. You stated the solid color areas are the ones that would participate in this agreement at this time?

A Yes, sir.

Q The areas shown by the diagonal lines is, in your judgment, areas that might come into the unitization, if and when drilled?

A That is right.

Q There has been no drilling as yet in the area shown by the diagonal

lines?

A No, sir.

Q Are you familiar with the ownership in the area there at that place?

A Yes, sir.

Q You might state first the ownership, as distinguished from the leases. I will ask you, is all the area, except eighty acres, owned by the United States?

A Yes, sir, it is.

Q That includes both the participating area and the area that might possibly come in?

A Yes, sir.

Q What about the eighty acres?

A It is owned by Burleson, in Sec. 8.

Q Is that the area over here -- what part of Sec. 8?

A The $E\frac{1}{2}$ of the $NW\frac{1}{4}$ of Sec. 8, T. 25 S., R. 37 E.

Q The operating ownership, can you give that of the whole area?

A The Anderson Prichard and the Illinois Oil Company each own one-half in the half of the working interest in the Wells lease in Sec. 5, and Anderson-Prichard Oil Company and the Olsen Company each own one-half of the working interest in the Jal lease in Sec. 8.

Q That is the fee land?

A No, sir, that is government land. Anderson-Prichard owns all the working interest in the Langlie lease in Sec. 8, and also the Stuart lease in Sec. 9. Stanolind Oil Company owns all the working interest in the Langlie lease in Sec. 9. The Western Gas Company and Clay Brothers Drilling Company each own one-half of the working interest in the Burleson lease in Sec. 8.

Q Is that the fee land?

A That is the fee land.

Q Mr. Davis, from your experience in this pool, and your qualifications as a geologist, do you believe that the proposed unitization and repressuring project would be workable?

A The geological conditions are favorable for repressuring in this area.

Q Do you believe repressuring and unitization operations would tend to increase the ultimate recovery from this area?

A I do.

Q Have you with you the history of each of the wells in this area?

A I have. (Witnesses produces report, marked "Petitioner's Exhibit No. 4).

Q That includes the log?

A No, sir, it does not include the log in each case. The drilling time and information as the well is drilled.

Q And the well history?

A Right.

Q And the bottom hole pressure survey?

A Yes, sir, the gas-oil ratio survey.

Q And the equipment of each well?

A Yes, sir.

Q The ownership and overriding royalty interest?

A Yes, sir.

Q Have you collected that from each of the wells involved in this area?

A I have.

Q That comes from the company records and the Commission records at Hobbs and similar sources?

A Yes, sir.

BY MR. SETH: For the convenience of the Commission we have collected all of this, and we would like to introduce it as to each well, as Exhibit No. 4.

BY MR. WORDEN: Alright.

Q Have you anything further, Mr. Davis, that you think -- Did you state there was no gas production in the Yates?

A I meant to refer to the fact that there is no gas being produced from the wells at the present time.

Q And there is no oil in the sand either?

A No, sir.

Q There is gas being produced in the Yates sand?

A Not in that immediate area.

Q Isn't there one well producing gas?

A It may be used for lease purposes.

Q But no oil being produced, in any event?

A No, sir.

BY MR. LIVINGSTON:

Q Mr. Davis, I believe you testified as to the land ownership. All the land embraced in the proposed unitization area is either United States government land or privately owned land?

A That is right.

Q And there is no state land within that area?

A No, sir.

BY MR. SETH:

Q This map, Exhibit No. 1, shows all the producing wells, does it not?

A Yes, sir.

Q And shows all the producing wells in the area immediately adjoining?

A That is right.

Q There is one well in the NW¼ SW¼ of Sec. 4; that unit on which that well is located is the only unit with a producing well that adjoins this area?

A That is right.

Q Who owns the working interest in that?

A It is government owned acreage, and the working interest is owned by Anderson-Prichard.

Q Now, those Exhibits Nos. 1, 2 and 3, and the Exhibit No. 4, the well history, represent the facts as they exist on the ground, that you have gathered from all available sources, is that true?

A They do.

BY MR. ANDREAS: Is there any objections to the unitization of this particular tract? (Question asked of all representatives present, and no one answered).

If there is no objection, I think we are ready for the other witnesses.

Witness dismissed.

WESTON PAYNE

being called as a witness on behalf of the Petitioners, and having been first duly sworn, was examined by Mr. Seth, and testified as follows:

DIRECT EXAMINATION

Q State your name please.

A Weston Payne.

Q What is your profession?

A I am a petroleum engineer privately employed as manager of production by Anderson-Prichard Oil Company.

Q Have you had any training along the lines of your employment?

A Yes, I was graduated in engineering in 1916, and I have had twenty-three years of varied experience in the operation and management of oil properties.

Q And how many years have you been in contact with this area here involved in this hearing and shown on Exhibit No. 1?

A I have been familiar with the area since its discovery, Anderson-Prichard having drilled the discovery well in the area.

Q Will you describe briefly the movement of oil in a reservoir?

A Oil moves from the reservoir into the penetrating well by reason of one or more of several forces, these forces being gas pressure, by reason of water encroachment, the force of gravity and compaction of loosely consolidated rocks, from the withdrawal of pressure. These forces tend to move oil from the areas of high pressure to the areas of low pressure. However, they are resisted by other forces which exist within the reservoir, such as the pore friction, capilarity and adhesion; the prominence of which depends upon the physical character of the oil and gas, such as viscosity, surface tension, density, etc.

Q What is known as primary recovery, in an oil pool?

A Primary recovery in a pool indicates that portion of the oil which is recovered by natural forces and without assistance of artificial energy.

Q The flow?

A Yes, oil actually produced in the bore hole and lifted to the surface without the use of outside energy.

Q Describe the condition that exists when primary recovery is exhausted?

A At such time when primary recovery in a pool is exhausted the force impelling the oil and the force which retards the oil are in equilibrium, therefore no motion can take place, therefore no movement of oil takes place.

Q What is the force that is producing the oil in this pool,- water drive or gas drive?

A The prevailing force is gas pressure.

Q Any indication of water drive?

A If so, only to a very minor extent.

Q Is it possible to recover oil left after the primary force is exhausted and when, as you state, the forces are in equilibrium?

A Yes, it is possible to recover a portion that is left upon the exhaustion of primary means by the injection of artificial energy; it might be gas energy; it might be in the form of water; it might be a combination of the two.

Q What means do you recommend for the secondary recovery of this Langlie area under consideration?

A I think at the present stage of this pool, what is commonly known as repressuring would have a tendency to be best applied in this area.

Q Describe briefly how this would operate.

A It is proposed to select key wells, or wells in which the high pressure gas would be injected, and inject gas into such well or wells; then by a careful analysis of pressures in the surrounding areas, observe the effect of such repressuring with the hope of at least maintining present pressures, or eliminating a further decline in bottom hole pressure. The theory of repressuring becomes beneficial chiefly through its ability to maintain at a maximum the drainage control of a given area. By "drainage control" is meant th e the area of influence of a given well. In the original discovery of a pool, a given well has a much larger area of drainage influence, due to large bottom hole pressure, and consequently a large energy factor. As the bottom hole pressure of a reservoir decreases, the drainage influence decreases, and the well declines in production,

due chiefly to these outstanding factors. The fact there is decreasingly less oil in a given area, and the fact that the drainage influence of a well is gradually diminishing, so by consolidating a group of wells and apply the theory of repressuring, you gain control, not only over the unit of forty acres, but over the whole area in which the project is located, and have control -- as well as control of the withdrawals from the reservoir, and you gradually will have more favorable conditions than the conditions that existed under normal individual well operations.

Q This repressuring, it may be a considerable period of time before it affects the field?

A As far as we know, there is no way to tell the effective date. Unfortunately we do not have as much control information in this particular pool, due to lack of core samples. All we do know positively is that the physical conditions favor such a project. We can't tell whether the effects will be noticed within thirty days' time or six months time, but we believe eventually the effects will become known, and will result in a beneficial condition.

Q The amount of gas used, and the pressure under which it is injected into the area would have to be determined by experiment,-- trial and error?

A That is right. We are hoping -- in starting the project we would hope to gain and save the information as developed, in order to determine the best direction to take.

Q It is understood by everyone that these operations are at all times subject to the supervision of the Commission, so far as state land is concerned?

A Yes, sir, that is right. And this experiment will be conducted in a manner which -- the information of which we hope to make public to anyone interested.

Q Can you state the particular advantages you hope from the repressuring of this particular area?

A Based upon experience in similar projects, we think it reasonable to expect to increase the ultimate recovery of this area, in percentages varying from fifteen to twenty per cent.

Q Why?

A Well, experiments in projects similar to this one have developed such recoveries.

Q This increase in from fifteen to twenty-five per cent in ultimate recovery, which you think may result, would more than offset the expense of this repressure operation?

A Yes, we consider it an economical problem.

Q This idea of repressure, is it in any way new?

A No, there have been various types of repressure operations during the past ten years. There have been some outstanding projects, and some not publicly known.

Q Can you state where they have been?

A Yes, in the State of Oklahoma there have been such projects. In the Burbank Field, the Green Pool in Texas, and there have been numerous ones in the Kansas pools, and in some of the pools in Illinois -- two or three projects, and also several projects in operation in California, and in the Kona Pool.

Q Have they been, in the main, successful?

A Yes, those projects have been, on the average, successful.

Q Have you tabulated information on the past decline of bottom hole pressure in this area?

A I have selected a few key wells to show the rate of decline.

BY MR. SETH: I would like to offer Petitioners' Exhibits Nos. 1, 2, 3 and 4 in evidence.

Q Now, this Exhibit No. 5, these lines, I notice are different colors?

A Yes, those colors indicate different wells.

Q Take the red lines first.

A The development of the red line represents No. 1 well, indicating the pressures on a vertical scale, and the accumulated recovery on a horizontal scale. These charts are made to indicate the rate of decline of bottom hole pressure with various amounts of withdrawal. The red line in the bottom group represents the rate of decline in potential in the same wells. The top charts represent the decline of bottom hole pressure, and the bottom in potential.

Q During this period -- the bottom figures represent the total potential of the well during that period?

A Yes, sir.

Q Take No. 1 -- what was the rate of decline?

A The bottom hole pressure declined from about 1150 to 830, and its potential declined from 200 barrels to 60 barrels. During the period of production about 58,000 barrels of oil were produced.

Q Take the second one, the green, No. 3, Langlie.

A The greenindicates No. 3 Langlie. The top indicates the decline in bottom hole pressure from 950 to 680 pounds, and the potential, the bottom curve indicates a decline in potential from 480 barrels to 310 barrels.

Q And during that period the well produced 29,000 barrels of oil?

A Yes, sir.

Q You have shown No. 4 Langlie and No. 2 Wells?

A Yes, sir, these wells were considered because they are tight wells. In the area, although there is some variation in the decline of the wells, there is no wide variation.

Q One well has gotten down to a bottom hole pressure of about 575?

A That is correct.

Q Each of the four showed a rapid decline in bottom hole pressure?

A Yes, they have showed a rapid decline.

Q And in potential?

A And potentials.

BY MR. SETH: We offer Exhibit No. 5 in evidence.

BY MR. ANDREAS: Over what period of time was that?

A I do not have the time, but it represents from the discovery well, shallow production, to the present.

BY MR. ANDREAS: Approximately?

A Approximately five years.

BY MR. SETH:

Q When was the discovery well drilled in that pool?

A I believe in 1935 -- I am not certain.

Q And the other wells were drilled some time afterwards?

A Yes, sir, they were drilled during the ensuing years.

Q At what pressure were the well or wells in this area first produced naturally?

A They first produced naturally at pressures varying from 500 pounds to 700 pounds, depending upon the gas-oil ratio. A well with a low,--

extremely low gas-oil ratio ceases to produce at relatively high pressure. As a matter of fact, one well in the group does not produce satisfactorily naturally at better than 700 pounds bottom hole pressure, while another well will flow at 500 pounds or slightly over.

Q When a well reaches that state, in the absence of repressuring, what steps will become necessary to continue production of oil?

A I don't understand --

Q When a well reaches that stage where it will not flow, what steps would be indicated to make it produce?

A There are two stages in the cycle of production of oil. At one stage energy is required to bring the oil to the surface, or into the bore hole, and the other type is necessary to lift the oil to the surface. In the case of the natural flow, nature produces the energy, but there comes a time when the well is only capable of providing energy to move the oil into the bore hole; therefore, in order to lift such oil to the surface, artificial means must be resorted to, such as some type of pumping, gas lift, etc.

Q Is that an expensive undertaking?

A Yes, rather expensive, from the standpoint of first cost as well as maintenance.

Q Mr. Payne, several times in your testimony you have referred to pounds of pressure. I take it that means pounds per square inch?

A Yes, sir.

Q For what period of time has this Langlie repressure been under consideration?

A We have seriously considered some form of artificial recovery in this area for better than two years.

Q Has it been considered by all interested parties, as well as the United States?

A Yes, say for the past year and a half there has been a concerted effort among all of the operators as well as the federal government toward accomplishing some form of secondary recovery.

Q Have the operators reached an agreement?

A Yes, with the exception of one, the operators who participate in the ownership of these leases have executed a unit or communitization agreement.

Q Have you that agreement?

A I have before me the original copy of the Langlie area unitization agreement.

Q Signed by all the operators, the owners of working interests in the pool with the exception of one?

A Yes, it is. The agreement is executed by the Anderson-Prichard Oil Company, the Illinois Oil Company, the Western Gas, the Olsen Oil, the El Paso Natural Gas Company, and the Stanolind Oil & Gas Company.

Q What is the one outfit that has not signed?

A The only one that does not appear is the Herschbach Drilling Company.

Q Are they the owners of one half of the working interest in the patented land?

A Yes, Herschback Drilling Company and the Clay Brothers own the chief interest in the Burleson No. 1 and No. 2.

Q Who owns the other half interest?

A The other half interest is owned by the El Paso Natural Gas Company and the Western.

Q Have they signed the agreement?

A They have signed the agreement.

Q How is it proposed to handle the interest of the one-half working interest that has not signed?

A It has been suggested that inasmuch as this lease does not enter into the agreement in its entirety, that the operation of the same be maintained on the present basis, and not intermingled, or comingled with the other leases in the area.

Q That is, that the owners of the one-half working interest be permitted to produce one half of the allowable for those two particular wells?

A That is right.

Q Has that agreement been the subject of many meetings and extended discussions?

A Yes. The members of this group of properties have endeavored for the past six months to work out an amicable solution of this problem.

BY MR. WORDEN: Have you a copy of that agreement you refer to?

BY MR. SETH: If the Commission please, we would like to retain the original signed agreement. We will, however, furnish the Commission with copies of this agreement, not signed, and we will, within a few days, furnish the Commission copies of this with the signatures typed in.

Q There has been no change since this was mimeographed?

A No, sir, so far as I know there has been no change.

BY MR. SETH: We would like to retain the original for the time being, but will submit a copy to the Commission.

Q Have you been familiar with the making of this agreement?

A Yes, sir, I have attended practically all of the meetings.

Q Do you believe the provisions of that agreement will be fair and equitable to all concerned?

A Yes, we think so. We have attempted to prepare an agreement that would accomplish purposes contemplated, and accomplish the same in a fair and equitable manner.

Q In a general way, what do you contemplate to do down there if this is approved by the Commission?

A Well, the first steps would be to select an operating committee among the operators, and the operating committee, in turn, will select an operator for the operation of these joint properties.

Q Would that operator or committee select a well or wells to be used for input?

A Yes, the committee would not only select the input wells, but control all important steps in the operation of this property.

Q There might be involved closing in some existing wells, in addition to those used for input wells?

A Yes. We are hoping permission will be granted to shift production in a manner which would tend to conserve the reservoir energy and ultimately produce the largest quantity possible of oil. If it is found that a certain well does not respond, and is a producer, we are hoping to be given permission to transfer the allowable of such wells to other wells; and in the case of the injection wells, which are incapable -- there will be several injection wells, as well as producers -- we are hoping to have permission to transfer such

allowable to other wells within the group.

Q It is intended to make these shifts and work out a plan of production in consultation with the State Geologist, this Commission and the officials of the Department of the Interior?

A Yes, that is true. We expect the operating committee to keep in close touch with the Conservation Commission and federal government officials.

Q It is clearly recognized that this agreement is at all times subject to the final control of this Commission and the Department of the Interior of the United States?

A That is correct.

Q And are all of these contemplated shifts provided for in the contract?

A I am not certain they are announced specifically. The operating agreement provides for the manner in which these properties will be operated.

Q It is left largely in the control of the operating committee?

A Subject to this contract. I might state there are two agreements: The agreement just introduced,- the unitization agreement, which has been approved by all of the participants except the Herschbach Drilling Company; and there is another agreement being circularized for approval by all in the operators' agreement, which sets out the terms and methods under which these properties will be operated.

Q Copies of that were likewise filed with the Commission at the time the hearing was requested?

A Yes, sir.

Q And acomplete copy, when signed, will likewise be filed?

A That is correct.

Q The idea underlying the unitization agreement is that the current allowable by the Commission be allocated to the unit as a whole to be produced under this agreement?

A Yes, we are hopeful of being granted permission to consider the allowable of the unitized group in its entirety, rather than being considered as individual units, as has been done heretofore.

Q But the total will be merely the current allowable for each well in the unit?

A Yes, the total allowable for the unit would be the sum of the allowable,- the marginal wells plus the top wells.

Q The total allowable of the unit would be the total allowable of the wells in the unit, and the allowable of each well determined in accordance with the established practice of the Commission?

A Well, we wouldn't go so far as to suggest the manner of determining, but it would be determined by the Commission.

Q In the usual manner?

A Yes, sir.

Q It might be possible, of course, if this project is successful,- it might make the marginal well a top allowable, but that would be determined after tests?

A Yes, the more successful this project will ultimately be, the more likelihood there would be of changing the ability of the individual wells to produce. We hope to improve the flow conditions, and in so doing, we might increase or decrease the flow of a given well.

Q No additional allowable is sought by reason of this repressure project?

A No, we will not ask any additional allowable be granted.

Q The back allowable -- some has accumulated?

A Yes, these wells, in past operations, have accumulated some back allowable.

Q And in the petition you are requesting that the back allowable may be produced, if a market is found, under the same conditions as current allowable?

A That is correct.

Q If the back allowable can be produced, and a market can be found, is it to be produced on a per day, per month basis -- what would you say, roughly?

A I think the rate of production of this allowable would depend somewhat on conditions found to exist after the plan becomes operative, but in no case, to produce the back allowable at a rapid rate, probably not to exceed five barrels per well per day.

Q Is this back allowable set up in the regular monthly proration schedules of the Commission?

A Yes, that is correct.

Q Do you believe that production as a unit, in the same manner as current production of selected wells, would be better than attempting to produce each individual well?

A I think conditions will be developed by this project which will be much more beneficial to the area as a whole than could hoped to be developed by single well operation, yes.

Q If the unit and repressure agreement is approved, all oil produced from the well, either current or back allowable, should be produced --

A I might state in connection with secondary recovery -- we refer to that here as repressure -- the introduction of artificial energy has a tendency to speed up recovery in a given reservoir and also reduce unit cost of production of such oil, and of course, of most importance, it is capable of developing an increase in the ultimate recovery of a reservoir.

Q This back allowable,-- in connection with that, are the petitioners asking for anything more than what back allowable has been already allocated to wells in this area?

A No, we are merely asking whatever back allowable has accumulated to individual wells be granted the unit as a whole.

BY MR. ANDREAS:

Q In event some marginal wells at the present time are not able to produce their allowable, you think that should be given other wells?

A I don't think I understand.

Q We will say there is a marginal well in the area, which you do have, and the repressure program does not benefit that particular well; it does have, say, 2,000 barrels of back allowable; it is not benefitted, therefore, it should not be entitled to get that back allowable through entering into this unit?

A We consider -- I don't think there is any way of pre-determining the uniformity of success. There will probably be areas that will receive small benefit, and areas of large benefit. We believe the project will benefit the area in general.

Q I grant that. I don't see, if a well was not benefitted and was a marginal well with back allowable which it could never produce, that the back allowable should not be given to other wells.

A The main reason, we think, should once this project be undertaken -- the idea of individual wells clearly becomes clouded and it will be difficult to determine what the individual well will produce.

Q After the program is once started you will soon find out whether they have been benefitted. If they have not been benefitted, certainly that back allowable could never be produced by that well.

A There might be, and probably will be cases where the well will eventually be brought back to top allowable.

BY MR. WORDEN: How did the marginal well get the back allowable? It should be taken off the record.

BY MR. SETH:

Q It got it before the period when it was determined to be a marginal well?

A Right.

Q This whole matter, in your judgment, is going to depend on the success of the project, and will take months to work out?

A Yes, we think it will. There is no definite way to determine the time required.

Q Is there the available gas for carrying it out?

A Yes, sir, the mechanics of supplying gas are practically finished at present.

Q Gas is there to be used?

A Gas is there to be used; the line is laid to the corner of the unit group.

Q Do you know whether the unitization agreement, at lease in principle, has been approved by the Secretary of the Interior?

A It has been approved by verbal discussions in principle, yes, sir.

Q Do you recommend it, from your professional training and experience, as a conservation measure to increase the ultimate recovery of oil from this area?

A Yes, we consider it a worth-while undertaking and deserving of every effort to put it into effect.

Q The companies are willing to spend the necessary money to put it in operation?

A Yes, sir, they have agreed.

Q Do you know the number, or approximate amount of back allowable

credited to those wells in that area at this time?

A I think it is approximately 14,000 barrels, by Mr. Staley's figures.

Q Could you tell the Commission -- give us some reason why that has accumulated -- why those runs have not been made in that area?

A I don't know the exact reasons. I imagine some has accumulated by reason of pipe line restrictions; probably some may be the inability of the individual wells to produce oil.

Q Have you in the past had trouble getting the pipe line people to run oil, or inability to produce oil?

A I would say it is a combination of the two. There has been a certain amount of pipe line restrictions.

BY MR. WORDEN:

Q Do you feel like the marginal wells that have been credited with more production than they were able to produce, do you feel they should come in and have the opportunity to make up the allowable, the same as where the pipe line and and market conditions have regulated that, and the back allowable has increased through that?

A I feel we are entitled to the back allowable, due to the fact that we are creating an improved condition in the operation of these leases, which will enable them ultimately to produce more oil. We feel we are entitled to whatever back allowable was originally granted to the individual wells. Why that back allowable should be withheld -- it has never been cancelled -- now that we are changing from a 40-acre unit to communitization unit, and so long as the communitization unit is capable of producing oil conservatively, we feel we are entitled to it.

Q Wouldn't that put the committee, or proration in the same position as to every other marginal well in the State of New Mexico, provided we made the allowable available in this particular field? Wouldn't we be establishing a precedent under which anybody who had a marginal well could come in and get the back allowable?

A I think not, for the reason that there is a distinction in what we are doing in that we are endeavoring to increase the ultimate recovery in a given area,-- a few operators taking the gamble -- we are taking the risk of damaging our properties permanently, but we feel the risk is justified, and for that reason, we feel the thing must be

considered under all the circumstances.

Q I was just trying to get clear in my own mind what effect the decision might have on others.

A It seems to me this type of project we are suggesting is modern -- ten years from now we will not look upon it with any particular doubt. Something is being developed rapidly. It is an improved method of operation. Naturally, we feel we will be benefitted from such operation, and if we are, the State of New Mexico will reap benefits.

BY MR. ANDREAS: I see no objection where it was due to the inability of the pipe line operation, but to pick a well that could not make it, I don't see that you would be entitled to that.

BY MR. WORDEN: If you could bring a well up to the point where it will produce, you would be entitled to it, but if you could not bring the well up --

A We feel we are correct in asking for it, due to the fact that the unit operation of the area is being changed.

BY MR. SETH:

Q If these wells were put on pump and thereby could make the back allowable, under existing practice there would be no objection to making that up?

A No. A well declines on natural production, and as a rule is capable of producing more oil artifically than it can produce naturally, and in all probability there are marginal wells that would probably be capable of producing larger quantities of oil than they now produce.

Q The plan is a substitute for pumping, which you all hope will be more efficient and assist in ultimate recovery?

A That is right.

Q The input well itself might have a large amount of back allowable accumulated in various ways?

A Yes.

Q And that necessarily would have to be distributed to other wells in the area?

A Yes, the injection well could no longer serve as a producing well.

Q Including the back allowable it has?

A Yes, sir.

Q And the current allowable and back allowable, although produced from

some other well, the owner will get the benefit?

A Yes, he would be compensated by the distribution to other wells.

Q And the input well, if used for a long time, would undoubtedly be frozen?

A That is right. It would lose its identity as a producing well.

Q No further satisfactory tests could be made?

A No, it would not be practicable to test a well as a producer of oil because it would spoil any advantage you might have accumulated by reason of the injection.

Q And the owners of the intake wells would have to take that chance?

A Yes, sir.

Q About what per cent of the oil is left in the ground by ordinary methods of production?

A When you exhaust the primary means?

Q Both ways.

A Well, on an average there is probably 60 to 75% of the original oil in place in the ground upon the exhaustion of primary means. We think it reasonable to expect a recovery of from 15 to 25% of that remaining oil be secondarily recovered.

Q You think this percent secondarily recovered by this plan would exceeed what would be obtained by ordinary means?

A Yes, I feel it would exceed it by from 15 to 25%.

BY MR. SETH: I believe that is all.

Witness dismissed.

C. C. CRAGIN

being called as a witness on behalf of the petitioners, and having been first duly sworn, was examined by Mr. Seth, and testified as follows:

Q State your name.

A C. C. Cragin.

Q You are manager of the El Paso Natural Gas Company?

A Yes.

Q Have you been familiar with the negotiations leading up to the re-pressuring matter now before the Commission?

A Yes.

Q Your company proposes to furnish the gas to be used in the repressure plan?

A Yes.

Q Is the gas available?

A Yes.

Q Would the gas be used in this plan that would ordinarily be used in some industry?

A It is gas that is now going to waste, gas from these leases and others.

Q Would the gas used have the natural gasoline extracted before using?

A Yes.

Q Has your company equipment in readiness to start on this project?

A Yes, we have a compression station, completed since last May. Two of these compressors we have are capable of putting in gas up to 2,000 pounds per square inch, a capacity of 3,000,000 cubic feet per day.

Q It would be a matter of small moment to connect up with the input well?

A We are all ready to go. The pipe line is all ready to shoot.

Q Your company has a working interest in some of the leases?

A We have half a working interest with Herschbach Drilling Company in the NW$\frac{1}{4}$ of Sec. 8.

Q The E$\frac{1}{2}$ of the NW$\frac{1}{4}$?

A The E$\frac{1}{2}$ is the only producing area. We have the whole quarter section.

Q Do you believe this repressure arrangement should be approved?

A Yes.

Q Have repressure contracts, with these contractors been approved by the Department of the Interior?

A Yes, in the summer of 1939 some 6,000 acres of gas rights, from the Anderson Prichard Company, Anderson himself and Prichard personally, the Olson Oil Company, and the Illinois Oil Company, together with holdings we owned, under the rules of the Department of the Interior; so we put in an application setting forth all the aims and objectives of this repressure program, and part of the sale agreement, which was labled a cooperative agreement at the suggestion of the Department, as an exhibit of that application we presented our repressure contract, in which we agreed to repressure, as an experiment, Area A

shown in pink on No. 1, and if that was successful, we would offer a similar contract to all producers on the whole south Langlie structure for repressuring the whole area, except the extreme end and a very little area which we figured too far gone. Set forth in the contract was the schedule of rates for repressuring, figuring the amounts used,

I would like to make a statement in connection with the questions to Mr. Payne by Mr. Worden. Recently the pressure in the southern and southeastern Langlie area, in Township 26, declined, a good many wells, below the line where it required us to put in a pressure station. It was a big producer at first, but it accumulated back allowable when it began to dedine, and we have had a satisfactory operation since, and increased the production in one well two and a half times and brought the production of the well up to 70 barrels a day. In many we want to apply the back allowable. All we want to ask to do is the same that you have already done.

Q That contract, you were requested to attach the application for excess acreage, that was approved?

A Our application, a waiver of limitation of acreage was approved by the Secretary of the Interior.

Q As I understand, this plan covers substantially this area?

A Yes, sir.

Q And even if not successful, you are obligated to furnish gas for repressuring?

A Yes, sir.

Witness dismissed.

ERNEST A. HANSON,

being called as a witness on behalf of the petitioners, and having been first duly sworn, was examined by Mr. Seth, and testified as follows:

DIRECT EXAMINATION

Q State your name.

A Ernest A. Hanson.

Q What is your official position?

A Supervisor of the U. S. Geological Survey.

Q Does this Langlie Pool come under your supervision?

A The oil and gas, yes, sir.

Q It is within your jurisdiction?

A Yes, sir.

Q You have been familiar with the negotiations that have lead up to this unitization agreement?

A Yes.

Q You have sat in at many of the meetings in this connection?

A Yes.

Q Can you state the attitude of the Interior Department, in general, towards repressure agreements involving land belonging to the United States?

A I could not speak for the Department on that matter, but as a field officer of the Department, interested in the technical features of the field administration, statutes and regulations, I feel it is a very constructive effort towards conservation.

Q You know the Department approved the arrangement Mr. Cragin just testified about?

A Yes, the agreement was approved about a year ago.

Q And ever since that approval, this unitization agreement has been under consideration?

A Yes, sir.

Q And Mr. Cragin's company is obligated to furnish the necessary gas?

A Yes, sir.

Q It is equipped to carry out this agreement?

A Yes, fully equipped.

Q And you, individually, would you recommend approval of this unitization agreement and the repressure plan?

A I would recommend their approval, yes.

Q And would recommend the approval by your superior officer?

A Yes, sir.

Witness dismissed.

BY MR. SETH: If the Commission please, I will state, as attorney for the Stanolind, they heartily favor this agreement.

GLENN STALEY,

Being called as a witness for the petitioners, and having been first duly sworn, was examined by Mr. Seth, and testified as follows:

DIRECT EXAMINATION.

Q State your name.

A Glenn Staley.

Q What position do you hole?

A Proration umpire.

Q Have you been holding such position in Lea County since the Langlie Pool was brought in?

A I have.

Q Can you state to the Commission the amount of back allowable now carried on the monthly proration sheet to the credit of the wells in this pool?

A I think it is in the neighborhood of 14,000 barrels. We have a tabulation on it.

Q You have that tabulation?

A Yes sir.

Q I hand you Petitioners' Exhibit No. 6, and ask if that is the tabulation?

A It is.

Q Is that correct?

A That is.

Q That shows the amount on the first page, the total amount of shortage to the credit of each well?

A It does.

Q And it totals 14,651 barrels?

A Yes, sir.

Q Then the following sheets give in detail from month to month, for each well in the area?

A That is correct.

BY MR. SETH: We offer this in evidence.

Witness dismissed.

BY MR. SETH: That is all we have to offer.

BY MR. HANSON: There are some new technical considerations and some new administrative problems which, no doubt, will affect the Commission and ourselves, and if desirable, we would like very much to meet with you and thresh out some of the difficulties.

BY MR. WORDEN: We would be very glad to.

BY MR. HANSON: Thank you.

WESTON PAYNE,

being recalled as a witness on behalf of the petitioners, was examined by Mr. Seth, and testified as follows:

DIRECT EXAMINATION

Q Mr. Payne, will you state, if you know, the ownership of the NW¼ SW¼?

A Anderson-Prichard.

Q Do you know who owns the area immediately west, the N½ SE¼ of Sec. 5?

A There is a tract in that section owned by Italo.

Q But that land is really government land?

A Yes, sir, all government land.

Q Who did you state owns the lease?

A I talo owns a portion of the Wells Tract. Mr. Gray could testify as to that.

Q Have you a map showing the land ownership?

(Witness hands Mr. Seth a map).

I hand you Exhibit No. 7, and ask if that is the map showing the land ownership?

A Yes sir.

Q With the exception of the W½ NW¼ of Sec. 4 and the E½ NE¼ of Sec. 5, does it show the land ownership with that exception?

A Yes, sir.

Q It is all government permits?

A Or state lands.

BY MR. SETH: We offer that in evidence.

BY MR. WORDEN: If there is nothing further on Case No. 22, the Commission will recess until two o'clock, P. M. to take up Case No. 23.

Pursuant to recess taken, the Commission convened at two o'clock in the afternoon of December 11, 1940, Mr. Worden presiding, and the following proceedings were had:

BY MR. WORDEN: At the finish of taking testimony, we recessed until two o'clock in order to give anybody in Case No. 22 an opportunity to present anything they wished to bring up. Is there anybody present who has anything further to be taken up in Case No. 22?

BY MR. SETH: We are through.

BY MR. WORDEN: We will close that case, then.

PETITIONERS' EXHIBIT No. 4

"ANDERSON PRICHARD OIL CORP.

LANGLIE #1

WELL INFORMATION

Casing Record	10" - 708' - none 8-5/8" OD - 1200' - 66 sacks 5½" OD - 3194' - 300 sacks
Special Equipment	None
Tubing Record	2" at 3466'

GEOLOGICAL INFORMATION

Elevation	3162 DF 3158 Gd
Top Anhydrite	1140
Base Salt	2640
Top Brown Line	2680
Top Top Yates Sand	2830
Gas Shows	2700-90, 2865-75, 2898-2920, 3409-30, 3135-39, 3197-3218.
Total Depth	3485 PB 3469
Oil Zones	3332-39 3440-51
Drilling Time	None- Cable Tools
Special Tests	attached

GENERAL INFORMATION

Royalty Division	Attached
Accumulated Production to January 1, 1940	91,842
Initial Production	60 BO/24 hrs. natural, shot 30 qts. 3400-3450 no change in either gas or oil.

WELL HISTORY

Langlie #1

This well was spudded in 1-21-35 with cable tools and drilled to 2875' at which point a sudden flow of gas blew the tools up to 2869' where they stuck. While fishing for them a blind box and the lower half of a set of drilling jars was lost on top of them and could not be fished out so a whipstock was set at 2447'. The tools went back into the old hole after drilling past the whipstock so another whipstock and 60' of 6" drill pipe was cemented in the holetop of whipstock was 2350'. A Rotary was then moved in which successfully drilled past the cable tools to a depth of 3194' where 5½" OD casing was cemented. Cable tools were used from that depth to 3485' the total depth.

An estimated 2,000 MCF gas was encountered at 3212' which quickly blew down to an estimated 250 MCF. A slight show of oil was encountered at 3332' and another show of gas from 3409-12'. After drilling sand from 3440' -51 the well sprayed 2.9 BOPH. It was then drilled on down to 3485' and encountered salt water at 3483 (-321) so was plugged back to 3470' with lead wool and from 3470' to 3468' with solid lead plug with iron mandrel which successfully shut off the water. The well was shot 8-25-35 with 1 quart of SNG per foot from 3400' to 3420' and from 3440' to 3450' which did not change the production of either oil or gas.

No further work was done on the well until August 1939 at which time it was cleaned out to bottom.

LANGLIE #1

WELL EQUIPMENT

3199'	5½" OD 17# Ygstn R-2 Gd C Blk Smls Casing
1214'	8 5/8" OD 32# Blk LW (SH) Casing
700'	10 3/4" OD 40# Blk LW (SH) Casing
1 set	6 5/8 "-1" x 8" x 45" Anchor Clamps
1 set	10 3/4" OD-1¼" x 8" x 45" Anchor Clamps
1	4½" 2000# Type 1079 Durogauge Pressure Gauge
1	5½" Od 3000# test OCT Type T-16-C Stripper Tubing Head for 2 3/8" OD Tubing
1	8 5/8 " OD x 5½" OD Rector Type Hp Braden Head with Std Gland
1	10 3/4" x 8 5/8" OD ditto
1	10 3/4" OD x 10'10" Std Blk LW Casing Nipple
1	2 3/8" OD x 4' 4.7# EUE 10 thd API Gd C Blk Smld Tub Nipple
2	2 3/8" OD x 6' ditto
1	2 3/8" OD x 10' ditto
3462'	2 3/8" OD 4.7# EUE 10 thd API Blk Smls Tubing
3	2" 3000# test Westcott AS NRS SE Gate Valve
1	2" 3000# test McClatchie Hydro Seal Plug Valve
1	3" 3000# test Westcott AS SE NRS Gate Valve
1	3" 3000# test WKM Gate Valve

Royalty Interest

Langlie #1, #2, #3, #4,

Commissioner General Land Office Roswell, New Mexico		5% of 8/8 Government Royalty
P. J. Langlie 10 South 1st. St., Alhambra, California		½% of 8/8 Permittee Royalty of Pipe Line Runs
W.M. Klages 1411 So. Catalina Ave. Los Angles, California		½% of 8/8 Premittee Royalty of Pipe Line Runs
F. A. Andrews 233 S. Van Ness Ave. Los Angeles, California		4-15/18% of 8/8 Permittee Royalty of Pipe Line Runs
Marshall & Winston, Inc. 480 L. W. Hellman Bldg., Los Angeles, California		½% of 8/8 Permittee Royalty of Pipe Line Runs
Oil Royalties Corporation 422 I. N. Van Nuys Bldg., Los Angeles, California		½% of 8/8 Permittee Royalty of Pipe Line Runs
L. W. Gregory c/o Washington & Western Branch of Bank of America 2201 West Washington Los Angeles, California		4/9% of 8/8 Permittee Royalty of Pipe Line Runs
L. W. Gregory	SUSPENSE	2/9% of 8/8 Permittee Royalty of Pipe Lines Runs
A. K. Barnes First National Bank Bldg. Denver, Colorado		1/64 of 8/8 Overriding Royalty of Pipe Line Runs
First National Bank of Chicago Chicago, Illinois		85.9375% of Working Interest

ANDERSON * PRICHARD OIL CORP.

LANGLIE #2

WELL INFORMATION

Casing Record	13" OD - 248 - 250 sacks 9-5/8" OD - 2707' - 500 sacks. 7" OD - 3250' - 200 sacks
Special Equipment	7" OD x 2-7/8 OD Guiberson Type C Control Head Hook Wall Packer set at 3180'.
Tubing Record	2½" at 3420'.

GEOLOGICAL INFORMATION

Elevation	3170 DF 3160 Gd
Top Anhydrite	1102
Base Salt	2660
Top Brown Lime	2710
Top Yates Sand	2835
Gas shows	2800 3000
Total Depth	3466
Oil Zones	3440-3455
Drilling Time	Attahhed
Special Tests	Attached

GENERAL INFORMATION

Royalty Division	Attached to Langlie #1 Well Record
Accumulated Production to January 1, 1940.	46,343
Initial Production	162 BOPD natural, shot 80 qts. 3436-3466 then flowed 15 BOPH.

WELL HISTORY, LANGLIE #2

The well was spudded 7/14/37 and drilled with rotary to total depth. Shows of gas were encountered at 2930 and 3000'. After cementing 7" casing at 3250, the well was drilled to 3331 using oil for circulating fluid, and blown dry with gas, and showed no gas or oil; at 3417 the well showed a small amount of gas; and after unloading at 3466 it flowed 54 barrels oil in 8 hr. thru 7" casing with 3½" OD drill pipe in hole, so tubing was run to 3460 and the well was completed.

After running tubing and completing the well, gas started leaking thru the 13" Braden head, and an investigation showed pressure between the 9-5/8" and 7" casing. To repair this condition a Baker cement retainer was set in the 7" casing at 3140, and circulation was established between the 7" and 9-5/8" casings by gun perforating 10 holes in the 7" at 2800 to 2803. 12" mud was circulated between the two strings and 80 sax cement pumped in thru perforations. This was allowed to set 72 hurs., and when the cement was drilled out, the 7" casing was blown dry. After setting for about 1 hour the cement around the perforations suddenly gave way, and an estimated 20 million feet gas came thru the perforations. A squeeze cement job was then started, but before pumping in any cement it decided to determine what pressure would be required to pump fluid into the formation. Pressure was built up to 1000" at which point the cement retainer gave way. Tubing was lowered to test to see if the retainer was still in place. The tubing was first lowered to 3170 which showed that the retainer had gone down the hole. Then, when picked up, it stopped at the point where the retainer had been set, pulled loose, and then when lowered again would not go past the spot where the retainer had been set. It was then thought that the retainer had reset itself, so to protect it 10 sax of cement were spotted on top of it. After setting 48 hrs, tubing was lowered to find the top of the cement plug, but went down to the point at which the retainer had been set. It was then found that by turning the tubing it would go down, and was finally worked down to a point below the 7" casing shoe, no cement being found. Another retainer was then set at 3170', and 15 sax of cement was spotted on top of it. This plug was allowed to set 60 hrs. Mud was then circulated out with clear water, and the gas from the perforations was permitted to blow for 6 hrs. The gas was then killed with clear water and the water circulated out the mud. Another retainer was then run in the hole to 2760, the mud circulated out with clear water and the gas allowed to partially unload the hole. When gas showed up on the surface, the retainer was set at 2760, and clear water pumped into the formation thru the perforations. The formation started taking water at 1800" pressure, but after 5 or 6 barrels had been pumped in, dropped to 800". After pumping in about fifteen barrels of water the cement (54 sax) was pumped in. 1000" pressure was required to pump the cement into the formation. This cement wasallowed to set 80 hrs. and when the retainer was drilled out, the plug was found at 2760 to 2800', which showed definitely that the formation back of the perforations had taken cement. After drilling out this cement the hole was blown dry and allowed to set 2 hrs. This test showed the gas from the perforations completely sealed off. The cement retainer below the perforations was then drilled out and the hole cleaned out to the bottom.

The well was then shot with 80 qts. of SNG from 3436' to 3466'. After cleaning out to bottom tubing was run to 3420' with hook wall pakcer set at 3180'. The well was completed 9-27-37 flowing 113 BO the last 12 hours of a 48 hour test with Gas/Oil ratio of 1920.

Drilling Time in Minutes

Langlie #2

1230	1240	40	1800	1810	30	2370	2380	70
	50	30		20	40		90	50
	60	25		30	30		2400	25
	70	25		40	30	2400	10	20
	80	20		50	30		20	20
	90	23		60	32		30	20
	1300	15		70	50		40	35
1300	10	27		80	45		50	20
	20	20		90	40		60	25
	30	30		1900	50		70	30
	40	20	1900	10	15		80	20
	50	27		20	20		90	55
	60	11		30	12		2500	95
	70	15		40	8	2500	10	62
	80	18		50	6		20	35
	90	13		60	9		30	60
	1400	20		70	10		40	43
1400	10	20		80	8		50	32
	20	25		90	7		60	55
	30	20		2000	40		70	45
	40	15	2000	10	45		80	35
	50	15		20	15		90	40
	60	19		30	20		2600	45
	70	30		40	12	2600	10	50
	80	33		50	43		20	55
	90	20		60	40		30	55
	1500	20		70	19		40	50
1500	10	15		80	14		50	40
	20	30		90	25		60	50
	30	25		2100	20		70	45
	40	65	2100	10	21		80	50
	50	45		20	22		90	
	60	80		30	20		2700	
	70	60		40	10	2700	10	85
	80	20		50	40		20	95
	90	20		60	60		30	90
	1600	35		70	35		40	105
1600	10	25		80	25		50	135
	20	50		90	35		60	103
	30	30		2200	45		70	120
	40	30	2200	10			80	130
	50	35		20	25		90	105
	60	65		30	10		2800	15
	70	75		40	20	2800	10	105
	80	65		50	20		20	145
	90	30		60	30		30	125
	1700	20		70	20		40	131
1700	10	17		80	70		50	111
	20	28		90	45		60	168
	30	30		2300	25		70	130
	40	12	2300	10	20		80	165
	50	29		20	20		90	175
	60	44		30	35		2900	90
	70	55		40	90	2900	10	90
	80	130		50	45		20	125
	90	70		60	60		30	197
	1800	40		70	60		40	52

Drilling Time in Minutes
Langlie #2

2940	2950	144	3231	3232	32	3287	3288	15
	60	124	v	33	35		89	10
	70	85		34	25		90	10
	80	105		35	30		91	10
	90	110		36	35		92	15
	3000	155		37	30		93	32
3000	10	140		38	20		94	38
	20	105		39	20		95	38
	30	130		40	12		96	32
	40	140		41	18		97	40
	50	193		42	20		98	30
	60	172		43	25		99	45
	70	80		44	18		3300	20
	80	40		45	14	3300	1	23
	90	60		46	18		2	22
	3100	20		47	17		3	20
3100	10	25		47	29	S. L. M.	4	18
	16	60		48	21		5	30
	20	40		49	14		6	10
	30	160		50	23		7	10
	40	155		51	10		8	7
	50	208		52	10		9	9
	60	137		53	10		10	9
	70	180		54	20		11	12
	80	210		55	20		12	9
	90	215		56	15		13	10
	3200	135		57	10		14	10
3200	1	10		58	10		15	9
	2	5		59	10		16	12
	3	17		60	10		17	13
	4	18		61	5		18	17
	5	17		62	10		19	13
	6	22		63	13		20	17
	7	12		64	10		21	23
	8	16		65	12		22	22
	9	27		66	30		23	19
	10	30		67	25		24	18
	11	24		68	30		25	21
	12	20		69	35		26	27
	13	26		70	40		27	30
	14	27		71	35		28	43
	15	24		72	32		29	45
	16	24		73	32		30	55
	17	18		74	30		31	55
	18	24		75	26		32	45
	19	27		76	32		33	35
	20	24		77	27		34	22
	21	30		78	22		35	16
	22	28		79	18		36	16
	23	28		80	19		37	9
	24	23		81	31		38	8
	25	36		82	45		39	9
	26	30		83	40		40	6
	27	28		84	35		41	6
	28	35		85	37		42	5
	29	35		86	33		43	5
	30	32		87	20		44	4
	31	28					45	10

Drilling Time in Minutes
Langlie #2

3345	3346	7	3404	3405	25	3461	3462	5
	47	7		6	20		63	6
	48	13		7	23		64	5
	49	22		8	27		65	13
	50	23		9	30		66	28
	51	19		10	18			
	52	27		11	22			
	53	45		12	20			
	54	30		13	3			
	55	25		14	2			
	56	30		15	1			
	57	30		16	10			
	58	23		17	17			
	59	14		18	30			
	60	6		19	33			
	61	22		20	21			
	62	25		21	27			
	63	22		22	32			
	64	27		23	37			
	65	44		24	28			
	66	9		25	30			
	67	6		26	42			
	68	4		27	27			
	69	7		28	15			
	70	7		29	22			
	71	12		30	28			
	72	43		31	6			
	73	21		32	28			
	74	22		33	26			
	75	28		34	29			
	76	8		35				
	77	12		36	21			
	78	20		37	22			
	79	10		38	53			
	80	5		39	25			
	81	5		40	20			
	82	3		41	30			
	83	7		42	20			
	84	15		43	8			
	85	10		44	4			
	86	15		45	3			
	87	20		46	3			
	88	24		47	5			
	89	22		48	8			
	90	27		49	6			
	91	19		50	18			
	92	18		51	24			
	93	29		52	20			
	94	14		53	31			
	95	16		54	21			
	96	19		55	22			
	97	10		56	23			
	98	24		57	34			
	99	18		58	30			
	3400	25		59	33			
3400	1	13		60	31			
	2	22		61	6			
	3	30						
	4	24						

OPEN FLOW TESTS

Langlie #2

October - 1937

1st 12 hrs.	13 BOPH
2nd 12 hrs.	11 "
3rd 12 hrs.	11 "
4th 12 hrs.	10 "

November - 1937

1st 6 hrs.	80 Bbls.

January - 1938

1st 12 hrs.	14 BOPH
2nd 12 hrs.	8 "
3rd 12 hrs.	9 "
4th 12 hrs.	8 "

March - 1938

1st 8 hrs.	14 BOPH
Next 12 hrs.	8 "
Next 6 hrs.	8 "
Next 6 hrs.	8 "
Next 3 hrs.	8 "

December - 1938

1st 24 hrs.	130 Bbls.
2nd 24 hrs.	110 "
3rd 24 hrs.	103 "

August - 1939

1st 24 hrs.	65 Bbls.

BOTTOM HOLE PRESSURE SURVEYS

LANGLIE # 2

Date of Survey	Pressure	Bbls. Produced Between Surveys
2-5-39	620#	
3-31-39	555#	2937
7-15-39	540#	5408
8-18-39	522#*	
8-19-39	540#*	
8-20-39	550#*	
8-30-39	580#*	
9-28-39	535#	3323
1-1-40	525#	5143

* Not regular survey

LANGLIE #2

WELL EQUIPMENT

1	3" 6000# test Hughes CS Tee Type Adj. Flow Bean
3256'	7" OD 24# API Gd B Blk Smls Casing
2714'	9 5/8" OD 40# ditto
232'	13" OD 40# Blk LW Casing
1 set	13" OD-1¼" x 8" x 43" Anchor Clamps
2	3" x 16" OCT Tie Down Clamps
1	7" OD HOWCO Float Collar
1	9 5/8" OD Baker Backblue Float Collar
2	4½" 3000# Type 1056 Ash Amer Pressure Gauge
1	9 5/8" OD x 7" OD 6000# test Type H Rector Braden Head
1	13" OD x 9 5/8" OD 3000# test Type M Rector Braden Head
1	7" OD x 12" 24# Blk Smls Csg Nipple
1	2 7/8" OD x 4' 6.50# Blk Smls Tubing Nipple
1	2 7/8" OD x 10' ditto
1	7" OD x 2 7/8" OD Type C Control Head Packer
1	7" OD 3000# test CIW Type ML Tubing Suspender & Blowout Preventor with 2½" Rams
1	7" OD HOWCO Guide Shoe
1	9 5/8" OD Baker Bakblue Guide Shoe
3425'	2 7/8" OD 6.50# API Gd B Blk Smls Tubing
1	2" 3000# test Hammer Plug Valve
3	2" 3000# test AS NRS SE Gate Valves
1	2½" Otis Type C Tubing Closing Valve
1	3" 3000# test WKM Gate Valve

ANDERSON - PRICHARD OIL CORP.

LANGLIE # 3

WELL INFORMATION

Casing Record	9-5/8" OD - 1191' - 500 sacks 7" OD - 3265' - 350 sacks
Special Equipment	Nixon Surface Control Gas Life Installed with Guiberson Type C-1 Control Head Hook Wall Packer set at 3222'
Tubing Record	2½" at 3472'.

GEOLOGICAL INFORMATION

Elevation	3181
Top Anhydrite	989
Base Salt	2720
Top Brown Lime	2770
Top Yates Sand	2860
Gas Shows	2862-2881
Total Depth	3479
Oil Zones	3445-3455, 3470-3479
Drilling Time	Attached
Special Tests	Attached

GENERAL INFORMATION

Royalty Division	Attached to Langlie #1 Well Record
Accumulated Production to January	1, 1940. 39.254
Initial Production	116 BOPD, shot 56 qts. 3469-3479, 3445-3469 then flowed 216 BOPD.

Drilling Time In Minutes

Langlie # 3

150	160	20		740	750	20		1330	1340	45	
160	170	25		750	760	25		1340	1350	30	
170	180	40		760	770	35		1350	1360	20	
180	190	40		770	780	40		1360	1370	35	
190	200	15		780	790	45		1370	1380	25	
200	210	20		790	800	55		1380	1390	18	
210	220	30		800	810	50		1390	1400	15	
220	230	30		810	820	35		1400	1410	14	
230	240	22		820	830	50		1410	1420	15	
240	250	22	N.B.	830	840	30		1420	1430	22	
250	260	13		840	850	30		1430	1440	12	
260	270	12		850	860	40		1440	1450	15	
270	280	12		860	870	60		1450	1460	18	
280	290	13		870	880	60		1460	1470	14	
290	300	13		880	890	50		1470	1480	16	
300	310	12		890	900	60		1480	1490	16	
310	320	12		900	910	50	N.B.at	1490	1500	15	
320	330	13		910	920	40	915	1500	1510	17	
330	340	15		920	930	40		1510	1520	16	
340	350	15		930	940	40		1520	1530	15	
350	360	15		940	950	50		1530	1540	16	
360	370	15		950	960	40		1540	1550	18	
370	380	15		960	970	50		1550	1560	18	
380	390	15		970	980	55		1560	1570	16	
390	400	15		980	990	60		1570	1580	20	
400	410	15		990	1000	55		1580	1590	15	
410	420	15		1000	1010	60		1590	1600	24	
420	430	15		1010	1020	60		1600	1610	22	
430	440	15		1020	1030	60		1610	1620	24	
440	450	15		1030	1040	60		1620	1630	30	
450	460	30		1040	1050	45		1630	1640	30	
460	470	30	N.B.	1050	1060	105		1640	1650	32	
470	480	30		1060	1070	105		1650	1660	30	
480	490	30		1070	1080	65		1660	1670	50	
490	500	30		1080	1090	65		1670	1680	45	N. B.
500	510	30		1090	1100	80		1680	1690	35	
510	520	60		1100	1110	100		1690	1700	30	
520	530	60		1110	1120	90		1700	1710	25	
530	540	60		1120	1130	70		1710	1720	30	
540	550	30		1130	1140	75		1720	1730	25	
550	560	30		1140	1150	80	N.B.	1730	1740	15	
560	570	60		1150	1160	85	at1153	1740	1750	28	
570	580	60	N.B.	1160	1170	60		1750	1760	30	
580	590	40		1170	1180	140		1760	1770		
590	600	55		1180	1190	140		1770	1780	25	
600	610	45		1190	1200	35		1780	1790	30	
610	620	45		1200	1210	20		1790	1800	22	
620	630	20		1210	1220	10		1800	1810	11	
630	640	20		1220	1230	25		1810	1820	15	
640	650	20		1230	1240	30		1820	1830	10	
650	660	20		1240	1250	20		1830	1840	12	
660	670	20		1250	1260	25		1840	1850	20	
670	680	20		1260	1270	28		1850	1860	14	
680	690	20		1270	1280	34		1860	1870	15	
690	700	20		1280	1290	30		1870	1880	227	
700	710	20		1290	1300	20		1880	1890	10	
710	720	20		1300	1310	22		1890	1900	10	

Drilling Time In Minutes

Langlie #3

1900	10	15								
10	20	11								
1920	1930	16	2520	2530	25	3130	3140			
30	40	15	30	40	20	40	50	110	N. B.	
40	50	16	40	50	20	50	60	215		
50	60	10	50	60	20	60	70	165		
60	70	7	60	70	20	70	80	180		
70	80	25	70	80	20	80	90	180		
80	90	50	80	90		90	3200			
90	2000	40	2600	2610	10	3200	10	170		
2000	10	15	10	20	15	10	20	120		
10	20	15	20	30	15	20	30	270	N.B. at	
20	30	14	30	40	20	30	40	180	3236	
30	40	16	40	50	15	40	50	195		
40	50	18	50	60	20	50	60	240		
50	60	11	60	70	20	60	70	240		
60	70	15	70	80	40	70	71	20		
70	80	15	80	90	60	71	72	85		
80	90	15	90	2700	40	72	73	15		
90	2100	14	2700	10	55 N.B.	73	74	10		
2100	10	15	10	20	95	74	75	10		
10	20	13	20	30	110	75	76	10		
20	30	15	30	40	85	76	77	10		
30	40	20	40	50	100	77	78	10		
40	50	21	50	60	105	78	79	10		
50	60	15	60	70	70	79	80	10		
60	70	18	70	80	75	80	81	15		
70	80	18	80	90	85	81	82	15		
80	90	25	90	2800	70	82	83	20		
90	2200	20	2800	10	105	83	84	30		
2200	10	13	10	20	105	84	85	25		
10	20	15	20	30	95	85	86	20		
20	30	12	30	40	90	86	87	35		
30	40	16	40	50	75	87	88	25		
40	50	16	50	60	75	88	89	35		
50	60	20	60	70	35	89	90	35		
60	70	21	70	80	35	90	91	15		
70	80	14	80	90	110 N.B.	91	92	5		
80	90	15	90	2900	45	92	93	5		
90	2300	20	2900	10	35	93	94	6		
2300	10	25	10	20	30	94	95	5		
10	20	20	20	30	45	95	96	6		
20	30	32	30	40	60	96	97	18		
30	40	20	40	50	25	97	98	15		
40	50	55	50	60	65	98	99	15		
50	60	25	60	70	120	99	3300	15		
60	70	50	70	80	150	3300	1	15		
70	80	30	80	90	85	1	2	22		
80	90	30	90	3000	95	2	3	28		
90	2400	31	3000	10	85	3	4	33		
2400	10	34	10	20	120	4	5	30		
10	20	25	20	30	60	5	6	25		
20	30	30	30	40	55	6	7	21		
30	40	30	40	50	85	7	8	21		
40	50	25	50	60	125	8	9	25		
50	60	25	60	70	80	9	10	25		
60	70	20	70	80	35	10	11	30		
70	80	25	80	90	30	11	12	30		
80	90	50	90	3100	35	12	13	25		
90	2500	65	3100	10	90	13	14	15		
2500	10	45	10	20	35					
10	20	20	20	30	70					

Drilling Time In Minutes
Langlie #3

3314	3315	10	3373	3374	20	3439	3440	3
15	16	10	74	75	20	40	41	4
16	17	12	75	76	20	41	42	5
17	18	33	76	77	20	42	43	6
18	19	25	77	78	20	43	44	8
19	3320	30	78	79	20	44	45	9
3320	21	30	79	3380	15	45	46	21
21	22	35	3380	81	11	46	47	13
22	23	15	81	82	19	47	48	21
23	24	10	82	83	20	48	49	19
24	25	8	83	84	25	49	3450	18
25	26	17	84	85	20	3450	51	24
26	27	15	85	86	15	51	52	22
27	28	20	86	87	20	52	53	23
28	29	20	87	88	20	53	54	23
29	3330	15	88	89	20	54	55	23
3330	31	20	89	3390	10	55	56	8
31	32	15	3390	91	5	56	57	14
32	33	10	91	92	20	57	58	15
33	34	15	92	93	30	58	59	15
34	35	15	93	94	35	59	3460	20
35	36	10	94	95	20	3460	61	20
36	37	10	95	96	20	61	62	15
37	38	15	96	97	40	62	63	24
38	39	10	97	98	10	63	64	28
39	3340	15	98	99	15	64	65	16
3340	41	30	99	3400	22	65	66	24
41	42	30	3400	1	5	N.B. 66	67	30
42	43	30	1	2	5	67	68	30
43	44	30	2	3	5	68	69	20
44	45	25	N.B. 3	4	15	69	3470	13
45	46	10	4	5	15	3470	71	8
46	47	15	5	6	15	71	72	10
47	48	10	6	7	10	72	73	4
48	49	20	7	8	12	73	74	3
49	3350	15	8	9	16	74	75	5
3350	51	15	9	3410	20	75	76	7
51	52	20	3410	11	12	76	77	5
52	53	15	11	12	20	77	78	7
53	54	15	12	13	20	78	79	30
54	55	15	13	14	25			
55	56	15	14	15	15			
56	57	10	15	16	15			
57	58	5	16	17	15			
58	59	5	17	18	10			
59	3360	5	18	19	10			
3360	61	20	19	3420	10			
61	62	20	3420	21	10			
62	63	15	21	22	10			
63	64	20	22	23	10			
64	65	15	23	24	10			
65	66	16	24	25	15			
66	67	10	25	26	15			
67	68	10	26	27	15			
68	69	5	27	28	15			
69	3370	5	SLM-3428-3435					
3370	71	5	3435	3436	15			
71	72	10	36	37	5			
72	73	10	37	38	3			
			38	39	3			

OPEN FLOW TESTS

LANGLIE #3

January - 1938

1st 12 hrs.	7	BOPH
2nd 6 hrs.	5	"
3rd 6 hrs.	5	"
4th 12 hrs.	6	"
5th 6 hrs.	4	"
6th 6 hrs.	5	"

March - 1938

1st 8 hrs	8	BOPH
Next 12 hrs.	6	"
Next 6 hrs.	6	"
Next 6 hrs.	5	"
Next 12 hrs.	5	"
Next 6 hrs.	5	"

July - 1938

1st 6 hrs.	13	BOPH
Next 14 hrs.	6	"
Next 10 hrs.	6	"
Next 14 hrs.	5½	"
Next 4 hrs.	5½	"

December - 1938

1st 24 hrs.	140	Bbls.
2nd 24 hrs.	126	"
3rd 24 hrs.	96	"

August - 1939

1st 3 hrs.	31	Bbls.
2nd 3 hrs.	12	"
1st 24 hrs.	103	"
2nd 24 hrs.	72	"

#
3 BOPH last 6 hours

December - 1939

1st 3 hours	23	Bbls.
2nd 3 hours	7	"
1st 24 hours	74	"
2nd 24 hours	58	"

3 BOPH last 6 hours

BOTTOM HOLE PRESSURE SURVEYS

LANGLIE # # 3

Date of Surveys	Pressure	Bbls. produced Between Surveys
2-5-39	865#	
3-31-39	805#	3223
7-15-39	750#	5482
8-3-39	807#*	
9-28-39	765#	4612
1-1-40	710#	5409

* Not regular surveys- well shut in 15 days

WELL HISTORY

Langlie #3

This well was spudded 10-28-37 and drilled to total depth with rotary drilling equipment. Drillers logged a show of gas from sand 2862'-2881'. After cementing 7" casing at 3265' oil was used for circulation fluid and the well drilled to its total depth without testing. At total depth (3479') 2½" tubing was set at 3422'. Flowing thru open tubing it flowed 116 BO in 24 hrs. with 325 MCF gas per day. It was then shot with 2 quarts SNG per foot from 3469' to 3479' and 2½ quarts SNG per foot from 3445' to 3469'. The well was killed with oil before running the shot but unloaded a few minutes before the shot exploded so actually was shot dry. After cleaning out to bottom, 2½" tubing was set at 3464'. Flowing thru open tubing it produced 216 BO in 24 hrs. with 1,100 MCF gas per day. Choked to 11/64" it produced 90BO in 24 hrs. with 233 MCF gas per day. Completed 11-30-37

No other work was done on the well until 1-25-40 at which time it went dead. Tubing was then pulled and the well cleaned. out to bottom, approximately 50' of cavings haveing been found in the hole. Tubing was reset at 3477' with a Buiberson Type G-1 Control Head hook Wall Packer set at 3222'. A Nixon Type 103 Surface Control Flow Valve was set at 3211' and a Nixon Type 107 SC Flow Valve set at 2586'. A standing was set below the packer at 3466'. The wall was then unloaded with outside gas after which it flowed 94 BO in 1 hr. thru 25/64" choke on its own gas. The following day, 1-31 -40 it flowed 102 BO on its own gas.

LANGLIE #3

WELL EQUIPMENT

1	3" 6000# test Hughes CS Tee Type Adj Flow Bean
3277'	7" OD 24# API Gd B Blk Smls Casing
1181	9 5/8" OD 36# ditto
1 set	9 5/8" OD-1¼" x 8" x 43" Anchor Clamps
1	7" OD HOWCO Float Collar
1	9 5/8" OD Baker Bakblu Bloat Collar
1	5" 2000# Style AH Crosby Press Gauges
1	9 5/8" OD x 7" OD Type HP Rector Braden Head
1	A mast for Nixon Lift
1	7" OD x 30" 24# Blk Smls CSg Nipple
1	2 7/8" OD X 4' 6.50# Blk Smls TOg Nipple
1	2 7/8" OD x 6' Ditto
1	7" OD 3000# test CIW Type NL Tubing Suspender & Blowout Preventor with 2½" Rams
1	7" OD HOWCO Guide Shoe
1	9 5/8" OD Baker Bakblu Guide Shoe
1	3" 3000# test Female Thread Tee
3466'	2 7/8" OD 6.50# API Gd B Blk Smls Tubing
2	2" 3000# test As NRS SE Gate Valves
1	3" 3000# test Orbit OS & Y SE Gate Valve
1	7" OD x 2½" Guiberson Hook Wall Control Head Packer

The following equipment installed by Wilson Supply Co. and to be purchased when the equipment is put in use.

1	Nixon Intermitter
1-	Nixon Wire Line Hoist & Turbine Motor
3500'	Wire Line
1	2" Wire Line Stuffing Box
1 set	Nixon 1¼" Weight Bars
1	2" Standing Valve
1	2" Upset all Steel Flow Valve with 1 Port
1	2" ditto 3 Ports
1	Nixon Measuring Device

ANDERSON - PRICHARD OIL CORP.

LANGLIE #4

Well INFORMATION

Casing Record	9-5/8" OD - 1157' - 5 sacks 7" OD - 3280' - 400 Sacks
Special Equipment	None
Tubing Record	2½" at 3452'

GEOLOGICAL INFORMATION

Elevation	3176
Top Anhydrite	1120
Base Salt	2620
Top Brown Lime	2720
Tope Yates Sand	2860
Gas Shown	2868-73, 2982-99
Total Depth	3477
Oil Zones	3400-3477
Drilling Time	Attached
Special Tests	Attached

GENERAL INFORMATION

Royalty Division	Attached to Langlie #1 Well Record
Accumulated Production to January 1, 1940	30,283
Initial Production	7 BOPH, shot 270 qts. 3392-3477 Then flowed 20 BOPH.

WELL HISTORY

LANGLIE #4

This well was spudded 5-11-38 and drilled to total depth 3477' with rotary drilling equipment. Drillers logged gas shows in sands 2868' to 2877' and 2982' to 2999'. 7" Od-22# casing was cemented at 3280' with 300 sacks common cement but when plug was drilled pressure on casing could not be built up past 900# so hole was bailed. After Bailing 10 hrs. there was still 600' fluid in the hole and some gas was showing so a Baker Cement Retainer was set at 3260' and 100 sacks cement was squeezed into formation. The last Cement went in at 1250# pressure. After setting 72 hrs. The retainer and cement was drilled out and the casing tested with 1000# pressure. There was no decrease in pressure during the 30 minute test.

Oil was used for circulating fluid from 3280' to bottom. No tests were made until the well had been drilled to its total depth. At TD 3477', $2\frac{1}{2}$" tubing was set at 3441' and the well swabbed in. It flowed 42 BO in 6 hours with 250 MCF gas. It was then shot with 270 quarts SNG from 3398' to 3477'. After cleaning out to bottom $2\frac{1}{2}$" tubing was set at 3451'. The well was then tested for 27 hours thru 1" choke on tubing. During the last 13 hours of the test it flowed steadly at the rate of 20 BOPH with 960 MCF gas per day. Choked to 85 BOPD, gas/oil ratio decreased to 700. Well was completed 5-15-38.

Drilling Time In Minutes

Langlie #4

300	310	30	2270	2280	20	2860	2870	165	
310	320	30	2280	2290	20	2870	2880	60	
20	30	40	90	2300	20	80	90	90	
30	40	95	2300	10	60	90	2900	65	
40	50	45	10	20	40	2900	10	180	N.B.
50	60	40	20	30	20	10	20	45	
60	70	50	30	40	15	20	30	35	
70	80	48	40	50	15	30	40	80	
80	90	42	50	60	20	40	50	45	
90	400	35	60	70	45	50	60	135	
400	10	37	70	80	15	60	70	210	
10	20	38	80	90	15	70	80	230	
20	30	35	90	2400	30	80	90	60	N.B.
30	40	30	2400	10	15	90	3000	45	
40	50	20	10	20	30	3000	10	95	
50	60	15	20	30	30	10	20	70	
60	70	20	30	40	20	20	30	163	
70	80	30	40	50	40	30	40	200	
80	90	30	50	60	65	40	50	190	
90	500	126	N.B. 60	70	25	50	60	55	
500	10	50	70	80	60	60	70	45	
10	20	20	80	90	90	70	80	45	
20	30	25	90	2500	70	80	90	30	
30	40	45	2500	10	25	90	3100	94	N.B.
40	50	30	10	20	15	3100	10	230	
50	60	40	20	30		10	20	205	
60	70	30	30	40	40	20	30	245	
70	80	30	40	50	30	30	40	180	
80	90	25	50	60	35	40	50	90	
90	600	95	60	70	35	50	60	135	
			70	80	35	60	70	120	
2000	2010	N.B.	80	90	30	70	80	165	
10	20	30	90	2600	35	80	90	210	
20	30	20	2600	10	50	90	3200	185	
30	40	25	10	20	N.B.	3200	10	190	N.B.
40	50	25	20	30	35	10	20	225	
50	60	20	30	40		20	30	155	N.B.
60	70	25	40	50	50	30	40	220	
70	80	20	50	60	50	40	50	335	
80	90	20	60	70	45	50	60	285	
90	2100	25	70	80	100	60	70	220	
2100	10	20	80	90	65	70	80	200	
10	20	25	90	2700	160	80	85	200	
20	30	90	2700	10	100	85	86	15	
30	40	20	10	20	80	86	87	17	
40	50	25	20	30	110	87	88	23	
50	60	30	30	40	115	88	89	22	
60	70	12	40	50	105	89	90	21	
70	80	50	50	60	135	90	91	17	
80	90	15	60	70	130	91	92	18	
90	2200	10	70	80	120	92	93	22	
2200	10	10	80	90	120	93	94	25	
10	20	10	90	2800	125	94	95	25	
20	30	45	2800	10	120	95	96	25	
30	40	35	10	20	135	96	97	15	
40	50	35	20	30	165	97	98-	15	
50	60	85	30	40	30	N.B. 98	99	15	
60	70	80	40	50	120	99	3300	20	
			50	60	180				

Drilling Time In Minutes

Langlie #4

3300	3301	15					3415	3416	17		
1	2	10	3357	3358	15		16	17	13		
2	3	15	58	59	21		17	18	17		
3	4	10	59	3360	12		18	19	19		
4	5	8	3360	61	10		19	3420	16		
5	6	7	61	62	7		3420	21	10		
6	7	7	62	63	9		21	22	4		
7	8	6	63	64	14		22	23	2		
8	9	10	64	65	15		23	24	2		
9	3310	17	65	66	18		24	25	17		
3310	11	23	66	67	25		25	26	6		
11	12	22	67	68	30		26	27	22		
12	13	18	68	69	25		27	28	25		
13	14	12	69	3370	20		28	29	40		
14	15	10	3370	71	20		29	3430	45		
15	16	10	71	72	20		3430	31	45		
16	17	10	72	73	27		31	32	45		
17	18	7	73	74	18		32	33	45		
18	19	3	74	75	20		33	34	33		
19	3320	3	75	76	20		34	35	32		
3320	21	6	76	77	20		35	36	33		
21	22	6	77	78	23		36	37	24		
22	23	7	78	79	20		37	38	13		
23	24	9	79	3380	32		38	39	7		
24	25	9	3380	81	25		39	3440	8		
25	26	9	81	82	15		3440	41	5		
26	27	9	82	83	15		41	42	27		
27	28	6	83	84	25		42	43	33		
28	29	4	84	85	30		43	44	18	N.B.	
29	3330	6	85	86	30		44	45	7		
3330	31	11	86	87	35		45	46	10		
31	32	23	87	88	20		46	47	8		
32	33	26	88	89	18		47	48	10		
33	34	16	89	3390	50		48	49	10		
34	35	22	3390	91	9		49	3450	20		
35	36	26	91	92	3		3450	51	19		
36	37	22	92	93	5		51	52	21		
37	38	29	93	94	10		52	53	7		
38	39	31	94	95	28		53	54	7		
39	3340	30	95	96	36	N.B.	54	55	11		
3340	41	30	96	97	15		55	56	5		
41	42	30	97	98	9		56	57	3		
42	43	16	98	99	5		57	58	5		
43	44	14	99	3400	12		58	59	5		
44	45	35	3400	1	12		59	3460	4		
45	46	38	1	2	11		3460	61	5		
46	47	47	2	3	16		61	62	6		
47	48	45	3	4	15		62	63	22		
48	49	20	N.B.	4	5	16		63	64	12	
49	3350	15		5	6	14		64	65	17	
3350	51	5		6	7	4		65	66	11	
51	52	7		7	8	4		66	67	16	
52	53	16		8	9	16		67	68	13	
53	54	17		9	3410	10		68	69	6	
54	55	18		3410	11	12		69	3470	10	
55	56	17		11	12	10				SLM	
56	57	17		12	13	6		72	73	10	
				13	14	12		73	74	7	
				14	15	18					

3474	3475	8
3475	3476	9
3476	3477	6
3477	3477½	4

OPEN FLOW TESTS

LANGLIE #4

August - 1938

1st 2 hrs.	30	BOPH
Next 2 hrs.	25	"
Next 2 hrs.	24	"
Next 4 hrs.	23	"
Next 8 hrs.	21	"
Next 2 hrs.	18	"
Next 3 hrs.	18	"
Next 6 hrs.	17	"
Next 4 hrs.	16	"
Next 11 hrs.	16	"
Next 4 hrs.	18	"

August - - 1939

1st 3 hrs.	78	Bbls.
2nd 3 hrs.	45	"
Next 18 hrs.	225	"
1st 24 hrs.	348	"

9 BOPH last 6 hours.

December - 1939

1st 3 hrs.	71	"
2nd 3 hrs.	45	"
1st 24 hrs.	310	"

BOTTOM HOLE PRESSURE SURVEYS

LANGLIE # 4

Date of Surveys	Pressure	Bbls. Produced Between Surveys
1-21-39	936#	
3-31-39	891#	3949
6-29-39	780#	4880
8-18-39	780#*	
8-20-39	809#*	
8-30-39	850#*	
9-28-39	780#	3766
1-1-40	710#	5356

* Not regular surveys

LANGLIE # 4

WELL EQUIPMENT

1	3" 6000# test Hughes CS Tee Type Adj Flow Bean
3285'	7" OD 22# API Gd B Blk Smls Casing
1144'	9 5/8" OD 36# Ditto
1 set	9 5/8" OD - 1¼" x 8" x 43" Anchor Clamps
2	5" 2000# Type 1056 Ash Amer Press Gauges
1	9 5/8" OD x 7" OD 6000# test Type [redacted] HP Rector Braden Head
1	7" OD HOWCO Float Collar
1	9 5/8" OD Baker Bakblue Float Collar
1	7" OD x 24" 24# Blk Smls Cag Nipple
1	2 7/8 OD x 4' 6.50# Blk Smls Tbg Nipple
1	7" OD 3000# test vCIW Type M1 Tubing Suspender & Blowout Preventor with 2½" Rams
1	7" OD HOWWCO Guide Shoe
1	9 5/8 OD Baker Bakblu Guide Shoe
3423'	2 7/8 OD 6.50# API Gd Blk Smls Tubing
1	3" 3000# test Kerotest FS RJ Flg Union
2	2" 3000# test McClitchie Lub Plug Valves
1	3" 3000# test Orbit O[redacted] Y SE Gate Valve

LANGLIE # 1-2-3-4

SURFACE EQUIPMENT

1	3" IBBW Essex Pat. Lock Stop Cock
1	4" IBBW Essex Pat. Lock Stop Cock
134'	2" 3.75# Std Blk LW Line Pipe
3211'	3" 7.7# ditto
793'	4" 11# ditto
56	6' T Iron Line Posts
3	Corner Posts
3	Gate Posts
4	# If 3' x 11' Nat'l Oil & Gas Separator Complete
4	10' x 15' 210 bbl. Nat'l Type 2 Welded Steel Tanks
4	250 bbl. 1 Ring 12 ga. Bolted Steel Tanks
4sets	Walkway Brackets for 10' x 15' tanks
4 sets	ditto 250 bbl. tanks
1	16' Steel Stairway
1	8' ditto
105'	26" Steel Walkway
8	2" Class 125 CI SE Lub Plug Valves
26	3" Class Std IBBM Nrs SE Gate Valves
9	3" Class 125 CI FF Lub Plug Valves with CFBO
6	3" Class 125 CI SE Bub Plug Valves
4	4" Std IBBM Nrs SE Gate Valves
8	4" Class 125 CI SE Lub Plug Valves
1	4" loz. Press-2oz. Vac Statite Vent Valve
1	4" 14 oz. National Stack Valve

ANDERSON - PRICHARD OIL CORP.

JAL # 1

WELL INFORMATION

Casing Record	9-5/8" OD - 1208' - 500 sacks 7" OD - 3284' - 350 sacks
Special Equipment	None
Tubing Record	2½" at 3395'

GEOLOGICAL INFORMATION

Elevation	3203
Top Anhydrite	1050
Base Salt	2740
Top Brown Lime	2750
Top Yates Sand	2870
Gas Shows	2800-2993, 3004-3290, (well unloaded at 3290 & flowed 4000 MCF gas with no oil.
Total Depth	3455
Oil Zones	3370-3390, & 3440-3445
Drilling Time	Attached
Special Tests	Attached

GENERAL INFORMATION

Royalty Division	Attached
Accumulated Production to January 1, 1940	42,249
Initial Production	330 BOPD natural

WELL HISTORY

JAL #1

This well was spudded 10-29-37 and drilled to TD 3455' with rotary drilling equipment. Drillers logged shows of gas from lime and sand 2800' to 2993' and 3004' to 3290'. At 2993' A Drill Stam Test was made from 2800' to 2993'. The testing tool was open 15 minutes and showed a very small show of gas. Another Drill Stem Test was made from 3004' to 3290'. The tester was open 35 minutes and showed 244 MCF gas per day. At 3290' the well was unloaded by gas lift and at the end of a 5 hour test was making 4000 MCF gas per day with no oil.

After cementing 7" casing at 3284' the well was drilled to its total depth with oil. At 3360' the drilling fluid was unloaded with outside gas. A 3 hour test showed no gas or oil at that depth. At total depth of 3455' it flowed 78 BO in 3 hours thru casing with 3½" OD drill pipe in the hole. On 10-28-37 2½" tubing was set at 3395'. Flowing thru open tubing it produced 86 BO the last 6 hours of a 30 hour test with gas at the rate of 541 MCF gas per day. Completed 10-30-37.

Drilling Time In Minutes
Jal #1

250	260	30	840	850	18	1477	1487	55
260	270	20	850	860	48	1487	1497	55
270	280	15	860	870	30	1497	1507	25
280	290	15	870	880	45	1507	1517	19
290	300	30	880	890	65	1517	1527	6
300	310	18	890	900	45	1527	1537	17
310	320	22	900	910	33	1537	1547	23
320	330	20	910	920	37	1547	1557	15
330	340	22	920	930	33	1557	1567	50
340	350	23	930	940	40	1567	1577	45
350	360	23	940	950	45	1577	1587	30
360	370	20	950	960	33	1587	1597	30
370	380	25	960	970	40	1597	1607	30
380	390	22	970	980	47	1607	1617	20
390	400	27	980	990	41	1617	1627	40
400	410	30	990	1000	50	1627	1637	35
410	420	32	1000	1010	55	1637	1647	22
420	430	30	1010	1020	54	1647	1657	26
430	440	45	1020	1030	50	1657	1667	32
440	450	30	1030	1040	57	1667	1677	35
450	460	30	1040	1050	55	1677	1687	37
460	470	20	1050	1060	36	1687	1697	17
470	480	26	1060	1070	73	1697	1707	13
480	490	30	1070	1080	62	1707	1717	16
490	500	21	1080	1090	100	1717	1727	15
500	510	27	1090	1100	85	1727	1737	14
510	520	34	1100	1110	84	1737	1747	12
520	530	48	1110	1120	90	1747	1757	13
530	540	27	1120	1130	50	1757	1767	18
540	550	36	1130	1140	35	1767	1777	21
550	560	32	1140	1150	55	1777	1787	38
560	570	38	1150	1160	48	1787	1797	18
570	580	31	1160	1170	64	1797	1807	15
580	590	37	1170	1180	64	1807	1817	15
590	600	26	1180	1190	82	1817	1827	10
600	610	21	1190	1200	55	1827	1837	12
610	620	12	1200	1210	25	1837	1847	13
620	630	18	1210	1215	10	1847	1857	12
630	640	22	1215	1217	5	1857	1867	13
640	650	58	1217	1219	4	1867	1877	19
650	660	60	1219	1221	5	1877	1887	10
660	670	40	1221	1223	4	1887	1897	10
670	680	47	1223	1225	5	1897	1907	7
680	690	43	1225	1227	4	1907	1917	7
690	700	40	1227	1229	3	1917	1927	6
700	710	42	1229	1231	4	1927	1937	6
710	720	33	1231	1233	3	1937	1947	16
720	730	57	1233	1235	4	1947	1957	9
730	740	26	1235	1237	5	1957	1967	8
740	750	39	1237	1239	6	1967	1977	8
750	760	35	1239	1241	5	1977	1987	7
760	770	32	1241	1243	3	1987	1997	10
770	780	31	1243	1245	3	1997	2007	22
780	790	34	1245	1247	2	2007	2017	5
790	800	18	1247	1249	2	2017	2027	18
800	810	20	1249	1251	3	2027	2037	23
810	820	33	1251	1252	2	2037	2047	58
820	830	40	1467	1477	40	2047	2057	11
830	840	60						

Drilling Time In Minutes

2057 to 2067	6	2640 to 2650	20	3065 to 3070	55
77	11	60	22	75	100
87	9	70	25	80	75
97	11	80	30	85	110
2107	9	90	28	90	85
17	29	2700	30	95	55
27	26	10	41	3100	22
37	16	20	55	5	41
47	29	30	56	10	24
57	18	40	73	15	22
67	17	50	64	20	60
77	17	60	65	25	120
87	16	70	95	30	22
97	18	80	96	35	16
2207	19	90	73	40	17
17	32	2800	105	45	73
27	18	10	132	50	107
37	15	20	86	55	115
47	45	30	82	60	120
57	20	40	80	65	130
67		50	87	70	150
80	105	60	91	75	130
90	28	70	79	80	90
2300	25	80	53	90	75
10	15	90	20	95	97
20	22	2900	120	3200	75
30	63	10	25	5	73
40	50	20	60	10	77
50	25	25	52	15	86
60	20	30	23	20	124
70	25	35	20	25	125
80	45	40	20	30	115
90	45	45	67	35	130
2400	15	50	77	40	130
10	10	55	25	45	148
20	7	60	8	50	127
30	19	65	7	55	89
40	14	70	8	60	115
50	46	75	40	65	150
60	16	80	45	70	142
70	13	85	25	75	142
80	10	90	28	80	135
90	20	95	25	85	135
2500	30	3000	40	90	120
10	30	5	51	91	12
20	72	10	55	92	20
30	13	15	52	93	18
40	14	20	48	94	18
50	15	25	32	95	20
60	12	30	43	96	19
70	12	35	65	97	14
80	16	40	92	98	24
90	11	45	48	99	21
2600	10	50	25	3300	26
10	13	55	40	1	23
20	10	60	62	2	35
30	11	65	83	3	30
40	14			4	25

Drilling Time In Minutes

3304 to 3305	15	3361 to 3362	20	3418 to 3419	57
6	2015	63	30	20	6
7	20	64	20	21	42
8	22	65	30	22	40
9	20	66	25	23	30
3310	28	67	12	24	30
11	22	68	14	25	35
12	13	69	10	26	23
13	22	3370	5	27	14
14	37	71	5	28	8
15	41	72	5	29	19
16	41	73	7	3430	18
17	26	74	6	31	23
18	34	75	7	32	16
19	40	76	7	33	10
3320	26	77	10	34	22
21	41	78	10	35	19
22	39	79	11	36	22
23	20	3380	15	37	30
24	22	81	7	38	29
25	23	82	10	3440	15
26	20	83	10	41	4
27	18	84	26	42	2
28	19	85	54	43	1
29	24	86	48	44	1
3330	19	87	48	45	2
31	20	88	28	46	18
32	22	89	37	47	31
33	45	3390	47	48	23
34	48	91	20	49	11
35	45	92	22	3450	25
36	27	93	14	51	25
37	18	94	21	52	15
38	15	95	28	53	13
39	15	96	27	54	22
3340	32	97	27	55	22
41	36	98	27		
42	36	99	23		
43	41	3400	29		
44	27	1	12		
45	36	2	6		
46	33	3	5		
47	17	4	8		
48	20	5	23		
49	25	6	30		
3350	22	7	33		
51	8	8	40		
52	6	9	25		
53	36	10	23		
54	18	11	27		
55	11	12	12		
56	9	13	13		
57	11	14	13		
58	14	15	37		
59	13	16	33		
60	13	17	57		
61	20	18	55		

OPEN FLOW TESTS

JAL #1

November - 1937

1st 6 hrs.	31.15	Bbls.
2nd 6 hrs.	16.88	"
3rd 6 hrs.	14.81	"
4th 6 hrs.	14.62	"
5th 6 hrs.	11.82	"
6th 6 hrs.	12.30	"

January - 1938

1st 12 hrs.	12	BOPH
2nd 6 hrs.	8	"
3rd 6 hrs.	8	"
4th 12 hrs.	9	"
5th 6 hrs.	6	"
6th 6 hrs.	7	"

March - 1938

1st 8 hrs.	6	BOPH
Next 12 hrs.	5	"
Next 6 hrs.	5	"
Next 6 hrs.	4	"
Next 12 hrs.	5	"
Next 6 hrs.	5	"

December - - 1938

1st 24 hrs.	84	Bbls.
2nd 24 hrs.	70	"
3rd 24 hrs.	63	"

August - 1939

1st 3 hrs.	86	Bbls.
2nd 3 hrs.	23	"
1st 24 hrs.	208	"
2nd 24 hrs.	100	"

Flowed 4 BOPH last 6 hrs.

December - 1939

1st 3 hrs.	39	Bbls.
2nd 3 hrs.	24	"
1st 24 hrs.	102	"
2nd 24 hrs.	77	"

3 BOPH last 6 hrs.

BOTTOM HOLE PRESSURE SURVEYS

JAL #1

Date of Surveys	Pressure	Bbls. Produced Between Surveys
2-3-39	720#	
3-31-39	730#	3416
6-29-39	595#	4683
8-30-39	680#*	
9-28-39	710#	3739
12-29-39	595#	5211

* Not regular survey - well shut in 15 days.

JAL # 1

WELL EQUIPMENT

1	3" 6000# test Hughes CS Tee Type Adj Flow Bean
3288'	7" OD 24# API Cld Gd C Blk Smls Casing
1190'	9 5/8" OD 36# API Old Gd C Blk Smls Casing
2	2" x 18" OCT Tie Down Clamps
1 set	9 5/8" OD 1¼" x 8" x 43" Anchor Clamps
1	4½" 2000# Type 1079 E Ash Amer Press Gauge
1	5" 3000# Pressure Gauge
1	9 5/8" OD x 7" OD 3000# test Type M Rector Braden Head
1	7" OD HOWCO Float Collar
1	9 5/8" OD Baker Bakblu Float Collar
1	2 7/8" OD x 4' 6.50# Blk Smls Tbg Nipple
1	7" OD 3000# test CIW Type ML Tubing Suspender & Blowout Preventor with 2½" Rams
1	7" OD HOWCO Guide Shoe
1	9 5/8" OD Baker Bakblu Guide Shoe
3400'	2 7/8" OD 6.50# 10 thd API Gd B Blk Smls Tubing
4	2" 3000# test NRS SE Gate Valves
1	2½" Otis Tubing Closing Valve
1	3" 3000# test WKM NRS SE Gate Valve

ROYALTY INTEREST

Jal #1 & #2

Commissioner General Land Office Roswell, New Mexico	Sliding Scale Government Royalty
Stanolind Oil & Gas Company (Until $500,000.00 has been paid from this and other properties per contract 7/16/36 & 11/16/38) Philcade Building Tulsa, Oklahoma	1/16 of 8/8 of Pipe line Runs
A. K. Barnes First National Bank Bldg. Denver, Colorado	1/64 of 8/8 Overriding Royalty of Pipe Line Runs
R. Olsen Oil Company 2811 Ramsey Tower Oklahoma City, Oklahoma	50% of Working Interest
First National Bank of Chicago Chicago, Illinois	50% of Working Interest

ANDERSON - PRICHARD OIL CORP.

JAL # 2

Well INFORMATION

Casing Record	9-5/8" OD - 1150' - 500 sacks 7" OD - 3281' @ 250 sacks
Special Equipment	Guiberson Hook Wall Packer set at 3200'
Tubing Record	2½" at 3447'.

GEOLOGICAL INFORMATION

Elevation	3181
Top Anhydrite	1080
Base Salt	2700
Top Brown Lime	2720
Top Yates Sand	2870
Gas Shows	2893-97, 2900-03.
Total Depth	3479
Oil Zones	3430-35, 3470-75.
Drilling Time	Attached
Special Tests	Attached

GENERAL INFORMATION

Royalty Division	Attached to Jal #1 Well Record
Accumulated Production to January 1, 1940	32,378
Initial Production	105 BO/16 hrs. shot 240 qts. 3400-3479 then flowed 24 BOPH.

WELL HISTORY

Gal#2

This well was spudded 3-17-38 and drilled to TD 3479' with rotary drilling equipment. Shows of gas were logged in sand 2893' to 2897' and 2900' to 2903'. After Cementing 7" casing at 3281' oil was used for circulating fluid down to total depth. No tests were made until the well had been drilled to its total depth. At 3479' 2½" tubing was run to 3450'. The well would not flow after swabbing out drilling fluid but fluid stood within 500' of top of hole. 30 BO was swabbed in 6 hours. It was then shot with 240 qts. SNG from 3402' to 3479'. After cleaning out to bottom tubing was set at 3447' with Guiberson Hook Wall Packer set at 3200'. The well was then swabbed in and tested for 15 hours thru open tubing after recovering drilling fluid. At the end of the test it was flowing at the rate of 22 BOPH with 600 MCF gas per day.

Bidding Time In Minutes

JAL #2

800 to 810	35	1390 to 1400	10	2560 to 2570	65	
20	25	10		80	65	
30	30	2000 to 2010	4	90	65	
40	27	20	15	2600	90	
50	28	30	10	10	30	
60	35	40	15	20	20	
70	34	50	15	30	20	
80	28	60	15	40	25	
90	38	70	15	50	35	
900	35	80	15	60	25	
10	30	90	20	70	45	
20	35	2100	15	80	30	
30	40	10	20	90	40	
40	30	20	25	2700	160	N.B.
50	35	30	10	10	195	
60	45	40	10	20	240	
70	55	50	15	30	265	
80	50	60	15	40	98	
90	60	70	15	50	80	
1000	45	80	10	60	120	
10	40	90	15	70	130	
20	10	2200	10	80	98	
30	10	10	10	90	130	
40	20	20	10	2800	120	
50	15	30	29	10	135	
60	15	40	34	20	135	
70	30	50	30	30	130	
80	45	60	82	40		
90	25	70	73	50	100	
1100		80	30	60	70	
10	40	90	30	70	35	
20	40	2300	18	80	125	
30	40	10	47	90	135	
40	63	20	30	2900	105	
50	62	30	30	10	80	
60	86	40	45	20	205	
70	15	50	15	30	60	N.B.
80	18	60	20	40	95	
90	12	70	80	50	45	
1200	20	80	40	60	50	
10	10	90	45	70	85	
20	10	2400	20	80	140	
30	15	10	15	90	90	
40	15	20	25	3000	60	
50	10	30	35	10	85	
60	10	40	30	20	100	
70	10	50	45	30	155	
80	10	60	45	40	95	N.B.
90	10	70	65	50	105	
1300	10	80	45	60		N.B.
10	10	90	10	70	180	
20	10	2500	60	80	65	
30	10	10	60	90	100	
40	10	20	75	3100	35	
50	10	30	60	10	105	
60	10	40	60	20	85	
70	10	50	60	30	180	
80	15	60	60	40	255	N.B.
90	15					

Drilling Time In Minutes

JAL # 2

3140 to 3150	120		3354 to 3355	18		3411 to 3412	15
60	130		56	19		13	23
70	140		57	19		14	12
80	N.B.		58	14		15	20
			59	8		16	4
3282 to 3285	25		3360	8		17	22
90	75		61	4		18	25
95	60		62	5		19	23
3300	80		63	12		3420	10
5	105		64	14		21	12
6	25		65	24		22	18
7	40		66	16		23	12
8	45		67	14		24	13
9	20		68	24		25	8
10	15		69	12		26	12
11	10		3370	16		27	10
12	12		71	9		28	10
13	15		72	9		29	20
14	20		73	5		3430	10
15	11		74	3		31	10
16	12		75	9		32	21
17	12		76	12		33	13
18	10		77	10		34	6
19	9		78	15		35	2
3320	7		79	15		36	1
21	7		3380	16		37	1
22	9		81	19		38	4
23	17		82	30		39	11
24	27		83	30		3440	7
25	26		84	35	N.B.	41	27
26	30		85	17		42	18
27	23		86	20		43	21
28	20		87	20		44	23
29	20		88	20		45	18
3330	15		89	9		46	17
31	17		3390	19		47	14
32	16		91	19		48	24
33	16		92	20			
34	20		93	9			
35	22		94	15			
36	18		95	17			
37	20		96	23			
38	16		97	15			
39	18		98	15			
3340	34		99	15			
41	15	N.B.	3400	15			
42	10		1	13			
43	15		2	12			
44	15		3	15			
45	15		4	5			
46	15		5	4			
47	16		6	2			
48	15		7	2			
49	19		8	12			
3350	20		9	20			
51	15		3410	15			
52	10		11	10			
53	10						
54	15						

OPEN&FLOW TESTS

JAL # 2

August - 1938

1st 24 hrs.	336 Bbls.

December - 1938

1st 24 hrs.	384 Bbls.
2nd 24 hrs.	305 "

August - 1939

1st 3 hrs.	90 Bbls.
2nd 3 hrs.	40 "
1st 24 hrs.	335 "
Next 8 hrs.	87 "

December - 1939

1st 3 hrs.	73 Bbls.
2nd 3 hrs.	37 "
1st 24 hrs.	281 "
2nd 24 hrs.	228 "
Last 6 hrs.	7 BOPH

BOTTOM HOLE PRESSURE SURVEYS

JAL # 2

Date of Survey	Pressure	Bbls. Produced Between Surveys
1-21-39	814#	
3-31-39	847#	4255
6-29-39	745#	4590
8-30-39	835#*	
9-28-39	780#	3833
12-29-39	695#	5286

* Not regular snrvey - well shut in 15 days.

JAL #2

WELL EQUIPMENT

1	3" 6000# test Hughes CS Tee Type Adj Flow Bean
3282'	7" OD 22# API Gd B Blk Smls Casing
1140'	9 5/8" OD 36# ditto
1 set	9 5/8# OD-1¼" x 8" x 43" Anchor Clamps
1	4½" 3000# Type 1079 D Ash Amer Press Gauge
1	9 5/8 OD 6000# test Type H Rector Braden Head
1	7" HOWCO Float Collar
1	9 5/8 Baker Bakblu Float Collar
1	7" OD x 24" 24# Blk Smls Csg Nipple
1	2 7/8" OD x 4' 6.50# Blk Smls Tubing Nipple
1	7" OD x 2 7/8" OD Guiberson Type G-1 Hook Wall Control Heal Packer
1	7" OD 3000# test CIW Type ML Tubing Suspender & Blowout Preventor with 2½" Rams
1	7" HOWCO Guide Shoe
1	9 5/8" Baker Bakblu Guide Shoe
3444'	2 7/8" OD 6.50# API Gd B Blk Smls Tubing
1	2" 3000# test Hammer Lub Plug Valve
1-	2½" 3000# test WKM NRS SE Lub Conduit Gate Valve
1	3" 3000# Test Orbit OS & Y SE Gate Valve

JALL # 1-2

SURFACE EQUIPMENT

1	9' x 16' Cattle Guard
1103'	2" 3.75# Std Blk LW Line Pipe
2381'	3" 7.7# ditto
355'	4" 11# ditto
22	6' Iron Line Posts
2	Corner Posts
1	Gate Post
2	#5 IF 3' x 11' Nat'l Oil & Gas Separator Complete
4	10' x 15' 210 Bbl Type 2 Nat'l Welded Steel Tanks
4	Steel Walkway Brackets
1	16' Steel Stariway
44'	26" Steel Walkway
3	2" Class 125 CI SE Lub Plug Valves
1	2" 3000# test Hughes CS NRS SE Gate Valve
2	3" Std IBBM NRS SE Gate Valve
4	3" Class 125 CI SE Lub Plug Valves
5	3" Class 125 CI FE Lub Plug Valves with CFBO
2	4" Std IBBM NRS SE Gate Valves
4	4" Class 125 CI SE lub Plug Valves
1	4" 14 ox. National Stack Valve

ANDERSON - PRICHARD OIL CORP.

WELLS #1

WELL INFORMATION

Casing Record	16" OD - 99' - 30 sacks 8-5/8" OD - 1170' - 100 sacks 5½" OD - 3270' - 300 Sacks
Special Equipment	Packer at 3201
Tubing record	2" at 3441

GEOLOGICAL INFORMATION

Elevation	3210
Top Anhydrite	1080
Base Salt	2660
Top Brown Lime	2690
Top Yates Sand	2850
Gas Shows	2790-2931 & 2965
Total Depth	3500
Oil Zones	3458-3478 & 3482-86
Drilling Time	Attached
Special Tests	Attached

General Information

Royalty Division	Attached
Accumulated Production to January 1, 1940	49, 399
Initial Production	39 BOPD natural, shot 90 qts. 3454-3500 then flowed 66 BO/5 hrs.

WELL HISTORY

Wells #1

This well was spudded 7-27-37 and drilled with cable tools to 2970. Shows of gas were logged at 2790, 2931 and 2965 with hole loaded with water. At 2931 the hole was bailed dry and showed estimated 250 MCF gas per day. The hole was not unloaded below that depth but sufficient gas was encountered at 2965 to blow the tools up the hole. Rotary equipment was used from 2970 to total depth and after cementing 5½" casing at 3270 oil was used for circulating fluid. Tests made by blowing the hole dry with gas at 3313, 3359, and 3444 showed no oil or gas. At 3474 the well produced 2½ BOPH on 2 hour test thru casing with drill pipe in hole. Flowing naturally at 3500' it produced 39 BO in 24 hours by heads every 3 or 4 hours.

The well was then shot with 1½ qts. SNG per foot from 3454-75; 2 qts. per foot from 3474-84; and 2½ qts. per foot from 3484-3500. After cleaning out to bottom 2½" tubing was run to 3427. Flowing thru open tubing it produced 66 BO in 5 hours by heads. Flowing thru 1/8" choke or tubing it produced 143 BO in 17½ hours. Producing at rate of 120 BOPD gas gauged 166 MCF per day.

On 9-19-37 the 2½" tubing was pulled and 2" run back to 3441 with Guiberson Type G-1 Control Head Hook Wall Packer set at 3202. After making this change the well flowed continuously thru 3/4" choke or tubing.

Drilling Time In Minutes

Wells #1

3090	3100	275	3274	3275	35	3333	3334	60
	10	75		76	30		35	35
	20	180		77	10		36	35
	30	340		78	10		37	35
	40			79	10		38	30
	50	540		80			39	30
	60			81	35		40	30
	70	285		82	25		41	20
	80	255		83	25		42	20
	90	540		84	25		43	30
	3200	470		85	20		44	50
3200	1	40		86	35		45	20
	2	70		87	30		46	30
	3	60		88	30		47	30
	4	80		89	35		48	50
	5	80		90	60		49	40
	6	40		91	40		50	
	7	50		92	105		51	
	8	25		93	45		52	20
	9	35		94	50		53	5
	10	130		95	60		54	15
	11	50		96	40		55	10
	12	60		97	45		56	10
	13	60		98	30		57	5
	14	35		99			58	10
	15	15		3300	25		59	5
	16	20	3300	1	20		60	5
	17	30		2	25		61	5
	18	25		3	15		62	5
	19	70		4	30		63	10
	20	50		5	20		64	5
	21	45		6	25		65	10
	22	45		7	30		66	20
	23	60		8	25		67	15
	24	55		9	30		68	10
	25	60		10	25		69	15
	26	50		11	30		70	10
	27	75		12	10		71	15
	28	50		13	15		72	20
	29	70		14	60		73	15
	30	95		15	35		74	5
	31	65		16	25		75	15
	32	85		17	30		76	20
	33	85		18	50		77	9
	34	55		19	25		78	31
	35	65		20	35		79	11
	36	60		21	20		80	9
	37	60		22	25		81	12
	38	60		23	25		82	13
	39	50		24	35		83	17
	40	95		25	25		84	11
	41	85	25	25	20		85	13

Drilling Time In Minutes

Wells #1

3385	3386	10	3427	17	3469	1
	87	11	28	16	70	1
	88	9	29	14	71	2
	89	11	30	13	72	3
	90	7	31	13	73	2
	91	10	32	18	74	6
	92	7	33	11	75	12
	93	10	34	9	76	7
	94	8	35	13	77	9
	95	15	36	4	78	7
	96	15	37	2	79	10
	97	15	38	2	80	12
	98	10	39	2	81	16
	99	15	40	9	82	11
	3400	10	41	16	83	5
3400	1	5	42	16	84	4
	2	5	43	14	85	4
	3	5	44	20	86	4
	4	5	45	18	87	12
	5	10	46	30	88	17
	6	10	47	11	89	31
	7	10	48	9	90	13
	8	16	49	23	91	25
	9	13	50	22	92	22
	10	12	51	24	93	18
	11	15	52	27	94	18
	12	14	53	23	95	22
	13	14	54	32	96	30
	14	11	55	36	97	25
	15	14	56	34	98	20
	16	16	57	30	99	35
	17	8	58	30	3500	35
	18	10	59	5		
	19	15	60	5		
	20	13	61	4		
	21	15	62	5		
	22	10	63	5		
	23	9	64	4		
	24	12	65	3		
	25	16	66	1		
	26	13	67	1		
			68	1		

OPEN FLOW TESTS

WELLS #1

October - 1917

1st 12 hrs	11	BOPH
2nd 12 hrs	6	"
3rd 12 hrs	6	"
4th 12 hrs	6	"

November - 1937

1st 6 hrs	5.87	BOPH
2nd 6 hrs	5.40	"
3rd 6 hrs	5.40	"
4th 6 hrs	5.42	"
5th 6 hrs	5.40	"
6th 6 hrs	5.42	"
7th 6 hrs	5.40	"
8th 6 hrs	5.42	"
9th 6 hrs	5.42	"
10th 6 hrs	5.42	"
11th 6 hrs	5.42	"
12th 6 hrs	5.42	"
13th 6 hrs	5.40	"
14th 6 hrs	5.40	"

January - 1938

1st 12 hrs	8	BOPH
2nd 6 hrs	6	"
3rd 6 hrs	6	"
4th 12 hrs	5	"
5th 6 hrs	5	"
6th 6 hrs	5	"

July - 1938

1st 6 hrs	10	BOPH
Next 14 hrs	7	"
Next 10 hrs	5½	"
Next 14 hrs	5	"
Next 4 hrs	5	"

September - 1939

1st 3 hrs	37	Bbls.
2nd 3 hrs	16	"
Next 18 hrs	66	"
1st 24 hrs	119	"
2nd 24 hrs	69	"

2½ BOPH last 6 hrs

December - 1939

1st 3 hrs	6	Bbls.
2nd 3 hrs	11	"
1st 24 hrs	75	"
2nd 24 hrs	72	"

3 BOPH last 6 hrs.

BOTTOM HOLE PRESSURE SURVEYS

WELLS #1

Date of Survey	Pressure	Bbls. Produced Between Surveys
3-30-39	1136#	
8-18-39	1080#*	
8-19-39	1093#*	
8-20-39	1105#*	
8-30-39	1120#*	
9-27-39	1050#	9476
12-28-39	1065#	5191

*Not Regular Survey.

WELLS #1

WELL EQUIPMENT

1	2" 6000# test Hughes Type T Adj Flow Bean
3287'	5½" OD 17# Ygstn API Gd C Blk Smls Casing
1168'	8 5/8" OD 32# 8 thd Ygstn API Gd C Blk Smls Casing
88'	16" OD 70# 8 thd Std Blk LW Casing
1 set	8 5/8"OD 1" x 6" x 43" Anchor Clamps
1	5" 2000# test Durogauge Press Gauge
1	5½" OD x 2" Hinderliter Type HZ Comp Tubing Head less slips and BO Preventor
1	8 5/8" OD Type L Rector Head
1	5½" HOWCO Float Collar
1	8 5/8" OD Baker Bakblu Float Collar
1	5½" OD x 8" Gd C Blk Smls Csg Nipple
1	5½" OC x 30" Gd C Blk Smls Gsg Nipple
1	8 5/8" OD x 32 # Gd C Blk Smls Csg Nipple
1	5½" OD x 2 3/8" Od EUE Guiberson Type G-1 Control Head Packer
1	2" Hinderliter Head Csg Blowout Preventor
1	5½" OD HOWCO Guide Shoe
1	8 5/8" OD Baker Bakblu Guide Shoe
3450'	2 3/8" OD 4.50# Ygstn API Gd C Blk Smls Tubing
1	2" 3000# test WKM Gate Valve
1	2" 3000# test Hughes CS SE NRS Gate Valve
1	5½")D 3000# test Hughes CS SE NRS Comb D & FL Gate Valve
1 set	2" Wedges for 5½" x 2" Hinderliter Tubing Head

ROYALTY INTEREST

WELLS #1 & #2

Commissioner General Land Office Roswell, New Mexico	Sliding Scale Government Royalty
E. J. Wells 7823 12th Street N.W. Washington, D. C.	.0033928 of 8/8 Permittee Royalty of Pipe Line Runs
Indian Petroleum Corp 391 Sutter Street San Francisco, California	.0367051 of 8/8 Permittee Royalty of Pipe Line Runs
Red Feather Oil Co. 701 Symes Bldg. Denver, Colorado	.0031250 of 8/8 Permitte Royalty of Pipe Line Runs
Ella M. Bivens San Clemente, California	.0008928 of 8/8 Permittee Royalty of Pipe Line Runs
L. E. Armstrong Rawlins, Wyoming	.0013189 of 8/8 Permittee Royalty of Pipe Line Runs
C. M. Bowen Rawlins, Wyoming	.0013189 of 8/8 Permittee Royalty of Pipe Line Runs
Bessie Chenstein 3400 E. 1st Street Long Beach, California	.0013189 of 8/8 Permittee Royalty of Pipe Line Runs
J. W. Pauson 391 Sutter Street San Francisco, California	.004464 of 8/8 Permittee Royalty of Pipe Line Runs
W. L. McLaine Higgins Building Los Angeles, California	.0004464 of 8/8 Permitte Royalty of Pipe Line Runs
Martin J. Weil, Mary W.Behrendt & Elizabeth Ann Weil c/o A. L. Weil Higgins Building Los Angeles, California	.0004464 of 8/8 Permittee Royalty of Pipe Line Runs
Alice G. Henry,Executrix of Estate of Fred T. Henry,Deceased 802 Midland Savings Bank Bldg. Denver, Colorado	.0005884 of 8/8 Permittee Royalty of Pipe Line Runs

ROYALTY INTEREST

WELLS #1 &#2

The Illinois Oil Company c/o First National Bank of Chicago Chicago, Illinois (210 Guardian Life Bldg.,Dallas,Texas)	50% of Working Interest
First National Bank of Chicago Chicago, Illinois	50% of Working Interest

ANDERSON-PRICHARD OIL CORP.

WELLS #2

WELL INFORMATION

Casing Record	9-5/8" OC - 1163' - 500 sacks 7" OD - 3303' - 300 Sacks
Special Equipment	None
Tubing Record	2½" at 3488

GEOLOGICAL INFORMATION

Elevation	3207
Top Anhydrite	1095
Base Salt	2710
Top Brown Lime	2730
Top Yates Sand	2900
Gas Shows	2788-3099 (1½ million)
Total Depth	3506
Oil Zones	3400-20 & 3470-80
Drilling Time	Attached
Special Tests	Attached

GENERAL INFORMATION

Royalty Division	Attached to Wells #1 Well Record
Accumulated Production to January 1, 1940	27,109
Initial Production	120 BOPD natural, shot 340 qts. 3398-3506 then flowed 480 BOPD

WELL HISTORY

Wells #2

This well was spudded 6-6-38 and drilled with rotary equipment to total depth, 3506'. A show of gas was logged in sand 2909-2925. A drill stem test was made from 2708' to 3099'. The tester was open 21 minutes and showed 1 million gas and 270' drilling fluid with no oil. After cementing 7" casing at 3303' oil was used for circulating fluid. No tests were made until the well had been drilled to its total depth of 3506'. Flowing thru 7" casing with 3½" OD drill pipe in the hole it produced 5 BOPH (by heads every 2½ hours) with 100 MCF gas per day. It was then shot from 3398' to 3506' with 340 quarts SNG. After cleaning out to bottom 2½" tubing was set at 3489'. Flowing thru open tubing it produced 340 BO in 13½ hours, the gauge during last hour of test being 20 bbl. Gas/Oil ratio 1300. Production settled to 12 BOPH the last 14 hours of BO hour test. Completed 7-5-38.

WELLS #2

DRILLING TIME

250 to 60		720 to 760	40		1230 to 40	24	
70	18	70	45		50	25	
80	20	80	30		60	25	
90	20	90	35		70	26	
300	17	800	55		80	21	
10	20	10	60		90	20	
20	20	20	90		1300	19	
30	23	30	40		10	20	
40	20	40	40		20	20	
50	22	50	50		30	25	
60	20	60	40		40	40	
70	20	70	45		50	35	
80	25	80	45		60	25	
90	35	90	34		70	65	
4 00	30	900	30		80	90	
10	35	10	31		90	19	
20	40	20	36		1400	50	
30	35	30	30		10	25	
40	30	40	35		20	14	
50	30	50	30		30	20	
60	30	60	36		40	20	
70	25	70	30		50	15	
80	30	80	34		60	35	
90	25	90	48		70	45	
500	30	1000	42		80	60	
10	45	10	43		90	30	NB
20	60	20	55		1500	30	
30	70	30	60		10	27	
40	40	40	43		20	41	
50	40	50	35		30	30	
60	35	60	40		40	32	
70	45	70	45		50	40	
80	30	80	50		60	53	
90	40	1 90	35		70	90	
600	25	1100	80		80	15	
10	20	10	130	NB	90	20	
20	12	20	30		1600	7	
30	23	30	55		10	11	
40	20	40	75		20	12	
50	35	50	70		30	15	
60	30	60	88		40	15	
70	30	70	114		50	10	
80	25	80	30		60	20	
90	25	90	35		70	15	
700	23	1200	20		80	30	
10	30	10	19		90	45	
20	40	20	18		1700	13	
30	55	30	22		10	12	
40	35						
50							
	40						

DRILLING TIME, WEELS #2

1710 to 20	15		2240 to 50	75		2700 to10	50	
30	10		60	45		20	100	
40	5		70	35		30	130	
50	10		80	30		40	115	
60	20		90	15		50	105	
70	30					60	100	
80	20		2300	xx 45		70	95	
90	18		10	65		80	185	
1800	20		20	90		90	155	
10	17		30	55				
20	23		40	35		2800	118	
30	27		50	30		10	105	
40	20		60	20		20	140	
50	20		70	20		30	110	NB
60	20		80	20		40	95	
70	27		90	70		50	80	
80	25					60	75	
90	35		2400	20		70	65	
1900	25		10	22		80	30	
10	45		20	23		90	35	
20	40		30	30				
30	30		40	35		2900	75	
40	60		50	40		10	62	
50	60		60	35		20	58	
60	60		70	25		30	30	
70	50		80	45	NB	40	50	
80	90	NB	90	15		50	45	
90						60	60	
2000	40		2500	20		70	160	
10	20		10	10		80	120	
20	35		20	35		90	120	NB
30	30		30	50				
40	45		40	40		3000	60	
50	30		50	20		10	65	
60	20		60	15		20	54	
70	19		70	15		30	50	
80	22		80	10		40	70	
90	20		90	10		50	50	
						60	60	
2100	35		2600	10		70	85	
10	35		10	17		80		
20	20		20	7		90	170	NB
30	25		30	10				
40	28		40	20		3100	-	
50	27		50	13		10	40	
60	30		60	14		2-	75	
70	35		70	22		30	30	
80	35		80	20		40	50	
90	35		90	70		50	105	
			2700	40		60	160	
2200	30					70	125	NB
10	25					80	90	
20	20					90	70	
30	40					3200	128	
40	25							

DRILLING TIME AT WELLS #2

3200 to 3210	137		3364 to 3365	4	
20	150	N.B.	66	7	
30	150		67	10	
40	100		68	10	
50	220		69	10	
60	220		70	17	
70	340	N.B.	71	28	
80	125		72	56	
90	130		73	34	
3300	100		74	53	
05			75	34	
10	65		76	23	
20	240		77	42	N.B.
30			78	20	
31	10		79	25	
32	15		80	25	
33	25		81	25	
34	20		82	12	
35	15		83	28	
36	10		84	25	
37	10		85	25	
38	15		86	25	
39	15		87	20	
40	12		88	20	
41	12		89	20	
42	10		90	5	
43	10		91	10	
44	10		92	20	
45	9		93	28	
46	11		94	27	
47	12		95	25	
48	9		96	24	
49	10		97	21	
50	9		98	25	
51	7		99	12	
52	7		3400	10	
53	8		01	9	
54	14		02	1	
55	19		03	15	
56	35		04	20	
57	25		05	20	
58	37		06	28	
59	33		07	35	
60	11		08	38	
61	10		09	20	N.B.
62	14		10	15	
63	10		11	16	
64	5		12	29	
			13	20	
			14	15	
			15	15	
			16	21	
			17	19	
			18	12	

DRILLING TIME AT WELL #2

3414 to 3415	15		3460 to 3461	20
16	21		62	17
17	19		63	2
18	12		64	2
19	22		65	2
20	20		66	1
21	8		67	10
22	6		68	10
23	15		69	16
24	17		70	7
25	16		71	17
26	21		72	43
27	13		73	36
28	18		74	30
29	17		75	36
30	6		76	38
31	18		77	14
32	11		78	31
33	15		79	34
34	15		80	26
35	15		81	29
36	5		82	6
37	2		83	7
38	2		84	8
39	6		85	22
40	40		86	30
41	20		87	35
42	20		88	20
43	30		89	30
44	46		90	25
45	45		91	30
46	20		92	20
47	55	N.B.	93	20
48	19		94	15
49	21		95	20
50	18		96	35
51	21		97	21
52	14		98	7
53	11		99	2
54	17		3500	2
55	18		01	3
56	18		02	6
57	15		03	4
58	20		04	5
59	12		05	4
60	16		06	12

OPEN FLOW TESTS

WELLS #2

August - 1938

1st hour	55	BOPH
Next hour	42	"
Next 5 hrs	30	"
Next 8 hrs	23	"
Next 2 hrs	24	"
Next 5 hrs	20	"
Next 3 hrs.	19	"
Next 6 hrs	17	"
Next 10 hrs	16½	"
Next 4 hrs	16½	"
Next 3 hrs	16	"

February - 1939

1st 6 hrs	35	BOPH
Next 17 hrs	17½	"
Next 7 hrs	18	"

September - 1939

1st 3 hrs	106	Bbls.
2nd 3 hrs	64	"
Next 18 hrs	290	"
1st 24 hrs	460	"
2nd 24 hrs	198	"
12 BOPH last 6 hours		

December - 1939

1st 3 hrs	89	BBls.
2nd 3 hrs	66	"
1st 24 hrs.	376	"
2nd 24 hrs	323	"
14 BOPH last 4 hrs		

BOTTOM HOLE PRESSURE SURVEYS

WELLS #2

Date of Survey	Pressure	Bbls. Produced Between Surveys
1-21-39	1082#	
3-30-39	1092#	3645
6-30-39	992#	3597
9-27-39	1033#	3878
12-28-39	1005#	5191

WELLS #2

WELL EQUIPMENT

1	3" 6000# test Hughes CS Adj Flow Bean
3309'	7" OD 22# Ygstn API Gd C Rg 2 blk Smls Casing
1156'	9 5/8" OD 34.75# Lapweld Casing
1 set	9/58"-1¼" x 8" x 43" Anchor Clamps
2	4½# 3000# Type 1056 Amer Ash Press Gauges
1	7" OD x 2 7/8# OD EUE OCT Type T-16 Mondrel Type Tubing Head
1	9 5/8" OD x 7" OD AWI & MW Type C Improved Braden Head
1	7" OD HOWCO Float Collar
1	9 5/8" OD Baker Bakblu Float Collar
1	7" OD X 24# 24" API Gd C Blk Smls Csg Nipple
1	2 7/8" OD x 4' 6.50# EUE API Gd C Blk Smls Tubing Nipple
1	2 7/8" OD x 10' 6.50# EUE Smls Tubing API Gd C Nipple
1	7" OD HOWCO Guide Shoe
1	9 5/8" OD Baker Bakblu Guide Shoe
3483'	2 7/8" OD 6.50# EUE Ygstn Api GdC Rg 2 Blk Smls Tubing
1	2" 3000# Test Eureka Plug Valve
1	3" 3000# test Orbit OS & Y SE Gate Valve
1	3" 3000# test Eureka CS Plug Valve

WELLS #1-2 LEASE

SURFACE EQUIPMENT

2	6" x 4" Std Blk Smls Swg Nipples
1	7" x 3" ditto
71'	2" 3.75# Std Blk LW Line Pipe
2403'	3" 7.7# ditto
498'	4" 11# ditto
1	7" OD Std Blk Smls Bull Plug
25	6' T Iron Line Posts
2	Gate Posts
4	Corner Posts
2	#5 IF 4' x 11' Nat'l Oil & Gas Separator Complete
5	8' x 15' 250 bbl. API Bolted Steel Tanks
5 sets	Walkway Brackets
1	8' Steel Stariway
81'	25" Steel Walkeay
9	2" Class 125 CI SE Lub Plug Valves
17	3" Class 125 CI Fe Lub Plug Valves with CFBO
2	3" Std IBBM NR S Se Gate Valves
5	4" Class 125 CI SE Lub Plug Valves
2	4" Std IBBM NRS SE Gate Valves

ANDERSON - PRICHARD OIL CORP.

STUART #3

WELL INFORMATION

Casing Record	7-5/8" OD - 1165' - 350 sacks 5½" OD - 3281' - 300 sacks
Special Equipment	Nixon Surface Control Gas Lift Installation with packer ser at 3235'.
Tubing Record	2" at 3484'.

GEOLOGICAL INFORMATION

Elevation	3199
Top Anhydrite	1108
Base Salt	2690
Top Brown Lime	2720
Top Yates Sand	2850
Gas Shows	2980-3000
Total Depth	3499
Oil Zones	3420-28, 3480-99.
Drilling Time	Attached
Special Tests	None

GENERAL INFORMATION

Royalty Division	Attached
Accumulated Production to January 1, 1940	15,096
Initial Production	60 BO/48 hrs. natural by heads, shot 270 qts. 3364-3499 then flowed 104 BO/11 hrs.

WELL HISTORY

STUART #5

This well was spudded 10-7-38 and drilled to total depth of 3499' with roatry drilling equipment. Shows of gas were logged 2900' to 2982' and from 3048' to 3085'. After Cementing $5\frac{1}{2}$" casing at 3281' oil was sued for circulating fluid. No tests were made until the well had been drilled to 3499'. 2" tubing was then run to 3499' and the well swabbed dry. After setting 2 hours $2\frac{1}{2}$ BO was swabbed out. After this test the tubing was left open and after standing 48 hours the well flowed 60 BO and died. It was then shot from 3389' to 3499' with 270 qts. SNG. After cleaning out to bottom 2" tubingwas set at 3470' and the well swabbed in. Flowing thru open tubing it produced 104 BO in 11 hrs. Flowing thru $\frac{1}{4}$" choke on tubing it produced 95 BOPD with 100 MCF gas per day. Completed 11-10-38.

On 9-3-39 this well was put on gas lift because it would no longer flow on its own gas. A surface intermitter was installed and operated until 1-1-40. With this installation the well produced from35 to 50 BOPD with an input gas/oil ratio of approximately 2500. On 1-5-40 the well was cleaned to bottom. On 1-2-40 tubing was pulled and operations to clean the well were started. Tubing was run back to 3471' with a standing valve at 3444' and a Guiberson Type G-1 Control Head Hook Wall Packer set at 3225'. A Nixon Type 103 flow valve was set at 3188' and a Type 107 Nixon Valve was set at 2695'. At the present time the well is operating an 300# input pressure, the flow valves being open 2 minutes out of each our. Production averages 40 BOPD and the input gas/oil ration is approximately 450.

DRILLING TIME IN MINUTES STUART #3

250 to 260	10		840 to 850	30		1400 to 1410	15				
70			60	35		20	35				
80	10		70	30		30	30				
90	5		80	40		40	30				
300	10		90	50		50	25				
300	10	10	900			60	15				
20	10		900	10	50		70	15			
30	10			20	30	N.B.	80	15			
40	15			30	17		90	15			
50	15			40	23		1500	25			
60	10			50	15		1500	10	25		
70	15			60	15			20	25		
80	10			70	25			30	15		
90	15			80	17			40	15		
400	15			90	18			50	55		
400	10	10		1000	30			60	35		
20	20		1000	10	15			70	70		
30	15			20	45			80	55		
40	15			30	30			90	25		
50	20			40	35			1600	30		
60	15			50	30		1600	10	15		
70	18			60	25			20	25		
80	22			70	25			30	35		
90	25			80	30			40	35		
500	15			90	30			50	25		
500	10	30		1100	10			60	15		
20	35		1100	10	35			70	40		
30	20			20	90			80	60		
40	32			30	90			90	60		
50	23			40	70			1700	25		
60	45			50	85		1700	10	35		
70	30			60	135			20	50		
80	10	N.B.		70	125			30	50	N.B.	
90	10			80	60			40	35		
600	15			90	70			50	30		
600	10	15		1200	60			60	30		
20	20		1200	10	35			70	40		
30	35			20	20			60	65		
40	15			30	25			90	60		
50	20			40	20			1800	25		
60	15			50	13		1800	10	20		
70	15			60	12			20	12		
80	25			70	11			30	12		
90	10			80	19			40	21		
700	10			90	15			50	10		
700	10	15		1300	20			60	10		
20	10		1300	10	15			70	10		
30	10			20	15			80	20		
40	20			30	25			90	10		
50	20			40	15			1900	15		
60	30			50	10		1900	10	15		
70	35			60	10			20	20		
80	25			70	10			30	25		
90	25			80	15			40	15		
800	15			90	18			50	15		
800	10	25		1400	22			60	15		
20	25							70	15		
30	30							80	15		
40	25										

DRILLING TIME IN MINUTES STUART #1

1980 to 1990	15		2540 to 2650	15		3100 to 3110	210				
2000	50			60	15			20	55		
2000	10	60			70	15			30	70	
	20	20			80	20			40	230	N.B.
	30	30			90	25			50	180	
	40	18			2600	25			60	205	
	50	42	N.B.	2600	10	20			70	210	
	60	20			20	20			80	295	
	70	30			30	25			90	290	
	80	35			40	30			3200	240	
	90	25			50	20		3200	10	225	
	2100	25			60	30			20	280	
2100	10	25			70	30			30	270	
	20	20			80	30	N.B.		40	210	
	30	20			90	35			50	240	N.B.
	40	25			2700	40			60	160	
	50	30		2700	10	100			70	125	
	60	20			20	160			80	185	
	70	25			30	175			85	180	
	80	10			40	130			86	30	
	90	15			50	155			87	30	
	2200	30			60	90	N.B.		88	40	
2200	10	30			70	115			89	18	
	20	25			80	140			3290	17	
	30	40			90	130			91	17	
	40	25			2800	125			92	22	
	50	25		2800	10	135			93	25	
	60	35			20	100			94	35	
	70	35			30	140			95	36	
	80	60			40	150			96	32	
	90	55			50	130	N.B.		97	30	
	2300	50			60	105			98	34	
2300	10	35			70	90			99	37	
	20	20			80	105			3300	13	
	30	20			90	100		3300	1	28	
	40	20			2900	160			2	30	
	50	95		2900	10	45			3	40	
	60	90			20	28			4	45	
	70	40			30	92			5	50	
	80	35			40	120			6	60	
	90	85			50	85			7	10	
	2400	75			60	165			8	15	
2400	10	25			70	140	N.B.		9	35	
	20	55			80	135			10	40	
	30	35			90	115			11	35	
	40	25			3000	135			12	40	
	50	40		3000	10	125			13	40	
	60	30			20	190			14	25	
	70	40			30	50			15	20	
	80	40	N.B.		40	35			16	25	
	90	40			50	95			17	30	N.B.
	2500	95			60	95			18	30	
2500	10	100			70	30	N.B.		19	30	
	20	50			80	30			3320	30	
	30	20			90	55		3320	21	30	
	40	15			3100	70			22	15	

DRILLING TIME IN MINUTES STUART #3

3322 to 3323	14		3380 to 3381	22		3437 to 3438	52	
24	16		82	18		39	43	
25	16		83	15		3440	20	N.B.
26	23		84	15		41	15	
27	32		85	12		42	22	
28	35		86	19		43	5	
29	40		87	21		44	13	
3330	30		88	45		45	20	
31	27		89	26		46	20	
32	24		3390	17		47	10	
33	20		91	26		48	5	
34	22		92	34		49	23	
35	22		93	43		3450	15	
36	30		94	35		51	4	
37	40		95	20		52	3	
38	30		96	25		53	7	
39	25		97	25		54	18	
3340	25		98	25		55	16	
41	35	N.B.	99	15		56	9	
42	30		3400	15		57	20	
43	15		3400 1	15		58	23	
44	20		2	15		59	24	
45	11		3	21		3460	13	
46	14		4	14		61	6	
47	20		5	15		62	7	
48	20		6	25		63	17	
49	12		7	27		64	25	
50	10		8	28		65	25	
51	16		9	35		66	30	
52	15		10	30	N.B.	67	30	
53	18		11	25		68	35	
54	14		12	12		69	15	
55	20		13	8		70	20	
56	23		14	15		71	17	
57	17		15	9		72	27	
58	10		16	9		73	25	
59	12		17	17		74	30	
60	18		18	10		75	30	
61	25		19	15		76	15	
62	20		20	15		77	20	
63	25		21	7		78	10	
64	23		22	6		79	10	
65	15		23	7		80	3	
66	15		24	4		81	3	
67	15		25	6		82	2	
68	25		26	10		83	3	
69	15		27	10		84	4	
70	30		28	6		85	8	
71	35		29	24		86	8	
72	45		30	25		87	8	
73	25		31	25		88	6	
74	25		32	30		89	25	
75	30	N.B.	33	40		90	30	
76	14		34	30		91	30	
77	19		35	28		92	43	
78	14		3936	9339		9339	39	
79	14		37	53		94	30	
80	24					95	22	

DRILLING TIME IN MINUTES STUART #3

3495 to 3496	22
97	47
98	40
99	40

BOTTOM HOLE PRESSURE SURVEYS

STUART #3

Date of Survey	Pressure	Bbls.Produced Between Surveys
3-9-39	1050#	
9-27-39 -	890#	6367

STUART #3

WELL EQUIPMENT

3282'	5½" OD 15# API Gd B Blk Smls Casing
1161'	7-5/8" OD 15.7# Armco Slip Joint Casing
1	7-5/8" OD - 1¼x8x43 Anchor Clamp
1	5½" OD x 2-3/8" OD 3000# test OCT Type T-16-C Stripper Tubing Head.
1	7-5/8" OD x 5½" OD 3000# test AI&MW New Improved Type C Braden Head
1	5½" OD HOWCO Float Collar
1	7-5/8" OD Baker Bakblu Float Collar
1	5½" OD x 12" 17# API Gd C Blk Smls Casing Nipple
1	7-5/8" OD x 12" 26# API Gd C Blk Smls Casing Nipple
1	2-3/8" OD x 4' 4.70# API Gd C Blk Smls Tubing Nipple
1	2-3/8" OD x 10' 4.70# API Gd C Blk Smls Tubing Nipple
3336'	2-3/8" OD 4.70# EUE API Gd B Blk Smls Tubing
63'	2-7/8" OD 6.50# EUE API Gd B Blk Smls Tubing
1	2" 3000# test Orbit CS SE OS&Y Gate Valve
1	2" 3000# test Eureka CS SE Plug Valve
2	3" 3000# test Eureka CS SE Plug Valve
1	5½" OD HOWCO Guide Shoe
1	7-5/8" OD Baker Bakblu Guide Shoe
1	5½" OD x 2" Guiberson Hook Wall Packer
1	Nixon A Mast.
1	Nixon Intermitter
1	Nixon Wire Line Hoist & Turbine Motor
3500'	Wire Line
1	2" Wire Line Stuffing Box
1 set	Nixon 1¼" Weight Bars
1	2" Standing Valve
1	2" upset All Steel Flow Valve w/ 1 Port
1	2" upset All Steel Flow Valve w/ 3 port
1	Nixon Measuring Device

STUART #3

SURFACE EQUIPMENT

1	Grove Universal Gas Regulator
6485'	2" c.75# Std Blk LW Line Pipe
798'	3" 7.7# " " " " "
147'	4" 11# " " " " "
1	#5 IF 5' x 11' National Oil & Gas Separator Complete
2	10' x 15' 210 bbl. Type 2 National Welded Steel Tanks
2	sets Walkway Brackets
1	Steel Stairway for 15' Tank
16'	26" Steel Walkway
1	2" Class 125 CO Se Lub Plug Valve
4	2" 3000# test CS NRS SE Gate Valves
2	3" Class 125 CO FE Lub Plug Valves with CFBO
2	3" Class 125 CI SE Lub Plug Valves
1	3" Std IB SE KC Gate Valve
2	4" Class 125 CI SE Lub Plug Valve
1	4" Std IBBM MRS SE Gate Valve
39'	7" OD 24# API Gd B Blk Smls Csg (Drip)
1	Type B Foxboro Orfice Meter (0-1000#) Static (0-100")Differential
67'	2 3/8" OD 4.70# API Gd B Blk Smls Tubing
1	4" 3000# test Jarecki Flg Union
3	2" 3000# test Eureka CS SE Plug Valves
2	4" " " " " " " "
1	4½" 1000# Ash Amer Press Gauge

ROYALTY INTEREST

STUART #3

Commissioner General Land Office Roswell, New Mexico	Sliding Scale Government Royalty
A. K. Barnes First National Bank Bldg. Denver, Colorado	1/64 of 8/8 Overriding Royalty of Pipe Line Runs
First National Bank of Chicago Chicago, Illinois	100% working Interest

STANOLIND OIL & GAS COMPANY - LANGLIE A-1

WELL INFORMATION

Casing Record - 8-5/8" 28# - 400 sacks. 5½" 17# - 3244' - 400 sax

Special Equipment - Special long Guiberson Okum packer set at 3449'

Tubing Record - 2½" EUE - 3467' TD

GEOLOGICAL INFORMATION

Elevation	3156'
Top Anhydrite	1090'
Base Salt	2670'
Top Brown Lime	2690'
Top Yates Sand	2840'

Shows	2900'	-20 Dead oil stain
	3040'	-50 Porous slightly stained
	3200'	-10 Slightly Stained
	3220'	-30 Grey sand slightly stained
	3290'	Top Pay
	3452'	-62 Main Pay
	3467'	Total Depth

Drilling time Attached

Special Tests - none

GENERAL INFORMATION

Royalty Division - attached

Accumulated production to January 1, 1940-------- 39,400

Bottom Hole Pressure data
Test taked 4-19-30 BHP 407# at -274' flowed 66.57 barrels of oil 48 hrs. with BHP of 235#. Initial production 37 barrels oil per hour through 1" choke w/ natural.

Well History
Langlie A-1 was completed May 27, 1937, at a total depth of 3467' (-310'). On production test it flowed at the rate of 37 barrels oil per hr through a 1" choke 2/1,763 MCF gas. This well has never been shot.
The first appearance of water was noticed December 10, 1937. The water gradually increased until it was making 40% as of October, 1938.

In order to shut off the water a Guiberson formation packer was set at 3449'.on October 27th, '38. Since that time it has produced by flowing. It has however been necessary to swab it a number of times due to it dying from water accumulating or paraffin. Recent 24 hour test show it to be making from 25 to 30 barrels of oil per day and 3 to 7% water with a gas-oil ratio of 740 to 1.

STANOLIND OIL AND GAS COMPANY
P. J. Langlie A-1
Drilling Time

Depth	Time Min	Depth	Time Min
3280		72	23
82	40	74	12
84	56	76	9
86	31	78	15
88	31	80	20
90	20	82	11
92	43	84	10
94	43	86	12
96	31	88	22
98	78	90	36
3300	21	92	40
02	20	94	40
04	32	96	59
06	42	98	39
08	52	3400	30
10	41	02	30
12	32	04	41
14	33	06	30
16	40	08	22
18	32	10	37
20	21	12	42
22	18	14	19
24	18	16	28
26	22	18	19
28	16	20	19
30	16	22	3
32	39	24	4
34	72	26	40
New bit 3335		28	32
36	51	30	32
38	15	32	23
40	14	34	28
42	15	36	30
44	15	38	30
46	15	40	38
48	15	42	21
50	12	44	25
52	11	46	27
54	9	48	38
56	9	50	32
58	21	52	21
60	58	54	9
62	47	56	3
64	40	58	10
66	40	60	11
68	40	62	27
New bit 3570		64	41
70	40	66	64
		SLM 3467	

BOTTOM HOLE PRESSURE SURVEYS

LANGLIE #1

~~3666~~

Date	Pressure
9-29-39	810#

STANOLIND OIL AND GAS COMPANY
COPY OF FIELD INVENTORY

Langlie A Lease

State: New Mexico County: Lea Location: Langlie Field Lease No: 484
Date: 2-13-1940 Operator: SO&G Co. Interest: 100%

Unit	Size	Description	Quantity
		WELL #1 - FLOWING	
		DERRICK INSTALLATION	
Derrick	94	Amer size #12 API painted angle steel with 24' base, 5'6" top, steel crown platform, 6"x6"x1/2" starting legs, 333000# cap - on concrete corners.	1
Prod Sill	7"x24'	Casing	2
		WELL HEAD INSTALLATION	
Tbg Head	5½"x2½"	BIW type HX30	1
Casing Hd	8-5/8"x 5½"	Rector type M w/std gland & 2 - 3" outlets	1
Casing Nip	8-5/8" x 10"	32# 10-thd SS	1
do	5½"x 43"	17# 10-thd SS	1
Casing Clamps	8-5/8"	1"x8"x46" anchor	1 set
Sucker Rod Hanger		WKM Fritts type, 50-strand	1
Tretolizer	5-gal	S-M Tretolizer,comp	1
Flow Bean	3"	6000# T Hughes Adj	1
		SUB-SURFACE EQUIPMENT	
Casing	8-5/8"	28# 8-thd LW	1175
do	5½"	17# 10-thd G-C SS	3270
Tubing	2½"	6.5# 10-thd EUE G-C SS	3457
Guide Shoe	8-5/8"	Larkin 32#	1
Float Collar	8-5/8"	do	1
Guide Shoe	5½"	Larkin 17# 10-thd	1
Float Collar	5½"	do	1
Perforated Nipple	2½"x36"	Reg	1
Packer	2"x4-3/4"	10-thd upset x actual OD Guib spiral Oakum wrapped	1
Tubing anchor	2"	4.7# 10-thd EUE CC SS,one end plain	13
		WELL FENCING	
Corner Posts	7'	Angle iron galv steel w/braces	8
Line Posts	7'	ditto	12
Gate	3'x42"	Style F univ walk,w/2½" angle iron post ftgs	1
		WELL #2 - PUMPING	
		DERRICK INSTALLATION	
Derrick	94'	Amer size 12 API painted angle steel w/24' base, 5'6" top, stl crown platform,6"x6"x1/2" starting legs, 6"x6"x3/8" running legs,H-beam BW girt,cap 333000# on concrete corners.	1
Prod Sill	7"x24'	Casing	2
Crown block	3-beam	Amer Stl w/3 - 10"x7' beams,4 CI seprs & 6 - 2-15/16" B.B.Bearings	1
Casing Pulleys	24"x2-15/16"	CI	3
		RIG FRONT	
Pumping Unit	20 HP	OCS Duck type mounted on 5'5"x17'6" fabricated stl base section,comp w/twin crank,dbl reduction gear,ratio 16.6 to 1; twin 8" OCS spec cranks; 8'1/2" Steel Samson post; 16"x8½"x12'10" @ 58# stl walking beam; horsehead type beam hanger; 5" S.O. Center bearings;crosshead bearings,3½"x6'8" twin tubular Pitmans and wrist pins & welded sheet metal belt guard,serial H-1456	1
Unit Sheave	30.6"	PD-4 "C" Sec V type	1
lt	136-C	"C" Sec V-type	4
		ENGINE INSTALLATION	
Engine		McCormick-Dearing Model P-30 comp w/weather hood, serial PB-3160;with 1 Int Model #70 air cleaner 1 Ensign gas-gasoline carburetor 1 Marvel Oiler 1 21" starting wheel	1
Engine sheave	13.5"	PD-4 "C" sec V-type	1

Unit	Size	Description	Quantity
Slide rails		Univ Engine	1 set
Regulator	1"	Reliance house gas	1
Volume tank	5'x13"	S-M gas scrubber,on 3 - 2'8" legs made of 1½" angle iron	1
		WELL HEAD INSTALLATION	
Flow bean	2"	Hughes adj 6000# T T-type	1
Hd	5½"X2½"	BIW PX-64	1
Cag Hd	8-5/8" x5½"	BIW East Tex Spec w/1 - 3" & 1-2" outlet	1
Cag Nip	5½"x44"	17# 10-thd	1
Cag Clamps	13"	1¼"x8"x43"	1 set
Cag Hd	13"x8-5/8"	BIW East Tex Spec w/2 - 3" outlets	1
		SUB SURFACE EQUIPMENT	
Casing	12"	40# 8-thd lapweld	150
Casing (Line Pipe)	8"	29.35# 8-thd LW	1183
Casing	5½"	17# 10-thd CC SS	3222
Tubing	2½"	6.5# 10-thd EUE CC SS	3431
Sucker Rods	3/4"x25'	Axelson #59 API	3325
Guide Shoe	8-5/8"	Baker Bek Blu	1
Float Collar	8-5/8"	Baker Bak Blu w/male & female thds	1
Guide Shoe	5½"	Baker Bak Blu 17# 10-thd	1
Float Collar	5½"	Baker Bak Blu 17# 10-thd	1
Perforated nip	2½"x36"	10-thd EUE	1
catcher	5½"x2½"	Guib type E less anchor	1
Plunger Pump	2½"x9'	BMW Admore	1
		BATTERY Serving wells #1&2	
Separator	3'x11'	Nat'l #5-IF,200# T 125# WP Ser #5428,Co #309,w/ 1 - 4" flanged end IB oil valve 1 - inside float assembly 1 - 4" 200# IB IR pressure gauge 1 - 4" SE IB BP relief valve	1
Tank	500 bbl	Amer LP BS w/top SO&G #133	1
do	do	ditto SO&G #135	1
Tank stairway	24"x8'	Amer painted stl w/railing & supports	1
Tank walkway	24"	Amer painted stl w/railing & 2 sets ground brackets	30'
Separator	3'x11'	200# T 125# WP Serial 5364 #5-IF Nat'l O&G Separator with Inside float assembly 1 - 4" FE IB Oil valve 1 - 4" 200# IB IR pressure gauge 1 - 4" SE IB BP relief valve	1
Heater	6'x7'	#2 Nat'l Emulsion Heater	1
C pling	6"	std LP	1
Heating Coil	2"x3'x20'		1
Steam Pump	6"x4"x6"	Oilwell duplex #T-1616	1
Swag nipple	6"x4"	8-thd reg SS	2
		MISC LEASE EQUIPMENT	
Chemical Feeder		BS&B automatic comp w/2" 30# pressure gauge	1
		AT BATTERY	
Fence Gate	2'10"x4'	S-M gate	1
Corner Posts	7'	Angle iron galv stl	8
Line Posts	7'	do	12
		AT WELL #2	
Regulator	1"	C&F LP gas	1
Clamp		#2 hvy-T-handle Ratigan polished rod	1
F ge	4"	Fig F-5 Orifice	1
		LEASE FLOW LINES	
SLP	2"	Well #2 to sepr	268
do	2"	Scrubber tank to engine	16
do	2"	Scrubber tank to gas line	16
do	3"	Riger at well	8
do	4"	Well #1 to sepr	16
do	3"	do	797
do	4"	Riser at sepr	8
do	3"	Well #2 to sepr	841
do	3"	Riser at sepr	8

Unit	Size	Description	Quantity
		BATTERY PIPE	
SLP	2"	Heating lines at heater	662
do	4"	Sepr vent line	362
do	4"	Sepr vent line riser at sepr	13
do	4"	sepr vent line riser to air	22
do	2"	Sepr vent line guy stakes	14
do	2"	Sepr vent line to rolling line at tanks (gas)	492
do	2"	Bleeder from stock tanks to burn pit	262
do	2"	Fence posts at burn pit	84
do	3"	Battery vent line	49
do	3"	Battery vent line riser	18
do	2"	Battery vent line supports	30
do	3"	Battery vent line supports	10
do	2	Fence posts	126
do	4"	Fence posts (Battery)	42
do	2"	Fence posts (Battery)	4
do	4"	battery header	20
do	4"	Battery header riser	9
do	4"	Gravity from sepr to header	37
do	3"	Gravity from sepr to header	130
do	4"	Meter setting	20
do	3"	Sepr Drain	3

Final Transfer 6A-517

STANOLIND OIL AND GAS COMPANY - LANGLIE A-1 & A-2

United States of America
c/o Supervisor, Oil & Gas Operations,
U.S.Geological Survey,P.O.Box 997
Roswell, New Mexico — 5% Royalty Interest

P.J.Langlie
10 S 1st Street
Alhambra,California — 1/2% Royalty Interest

W.M.Klages
1411 S. Catalina Street
Los Angeles,California. — 1/2% Royalty Interest

L.W.Gregory
1319 S. Ridgeley Drive
Los Angeles,California — 1/2% Royalty Interest

Lottie Gregory*
1328 - 4th Avenue,
Los Angeles, California — 1/6% Royalty Interest

F.A.Andrews
233 South Van Ness Avenue,
Los Angeles,California — 4-5/6% Royalty Interest

Oil Royalties Corporation
826 Van Nuys Building
Los Angeles, California. — 1/2% royalty Interest

Marshall Winston,Inc
490 I.W.Hellman Building
Los Angeles,California. — 1/2% Royalty Interest

Stanolind Oil and Gas Company
Philcade Building
Tulsa,Oklahoma. — 87-1/2% Working Interest

*The royalty to this participant is at present being withheld until legal difficulties between L.W.Gregory and Lottie Gregory are settled.

STANOLIND OIL & GAS COMPANY - LANGLIE A-2

Well Information

Casing Record

13" OD - 40# - 162' - 100 sacks
8-5/8" - 28# - 1185' - 360 sacks
5½" OD - 17# - 3221' - 400 sacks

Special Equipment

This well is equipped with an OCS "Duck" unit and a P-30 McCormick Dearing engine and 3325' of 3/4" sucker rods.

Tubing Record

2½" EUE - 3335'
2½" x 9' B&W Admore liner barrel 3335' to 3344'.

Geological Information

Elevation 3160'
Top Anhydrite 1100'
Base Salt 2660'
Top Brown Lime 2670'
Top Yates Sand 2810'
Gas shows - None logged
Total Depth 3463'
Oil Zones - (Drilling time & samples)

3210'-20 - 240 minutes
3220'-30 - 235 minutes
From 3230' to TD drilled with cable tools.
3415' to 3424' show oil & gas, 3424'-30 inc. oil.
3452' to 3463' hole filling with oil.

Special Tests - None

General Information

Royalty Division - Attached
Accumulated Production to January 1, 1940 - 24, 726.
Initial Production - Swabbed 47.5 B.O. in 7 hrs. shot with 140 qts. SNG 3416' to 3459', after shot flowed IP 121 BOPD thru 1/16" choke w/gas-oil ratio of 512.

Well History

Rotary drilling operations were started on this well September 21, 1937, and drilled to a depth of 3230' where cable tools were moved in and the well completed on Nov. 7, 1937, at a total depth of 3463' (-303'). Well was tested at 3456' and swabbed 27.5 B.O. in 6 hrs. Deepened to TD 3463' and swabbed 47.5 B.O. in 7 hrs. On November 23, 1937, it was shot with 140 qts. of SNG and was then cleaned out by Beckman. After cleaning out it flowed 121 Bbls oil in 24 hrs thru a 1/16" choke. The gas-oil ratio on this test was 512 cu.ft. per. bbl. It continued to flow at the allowable rate of 63 BOPD until January 1938. With the production amounting to 40 Bbls. per day, a string of 1¼" tubing was run February 12, 1938. This was run inside the 2½" tubing. Although some trouble was encountered keeping the well flowing it was produced by flow until June 16, 1938. At this time a pumping unit was installed. On recent tests over a 24 hr. period the oil Production varies from 18 to 20 barrels. The maximum water production has been 2% and was first noticed November 19, 1939. Since the last test the well has been pulled to inspect the pump as it is believed it should pump more than the recent tests have shown.

WESTERN GAS CO. BURLESON #1

WELL INFORMATION

Casing Record	12½" -266'-200 sax 8-5/8"-2767'-900 sax 5½" -3242'-25 sax
Special Equipment	None
Tubing Record	2" - 3429'

GEOLOGICAL INFORMATION

Elevation	3189
Top Anhydrite	1070
Base Salt	2650
Top Brown Lime	2780
Top Yates Sand	2920
Gas Shows	2938'-52' 2990') 1,100 MCF
Total Depth	3476'
Oil Zones (Drilling time & Samples	3342-57 3364-70 3388-3409 3434-52 3458-65
Drilling Time	Attached
Special Tests	None

GENERAL INFORMATION

Royalty Division	Attached
Accumulated Production to January 1, 1940	33,647 bbls.
Initial Production	2.2 BO/hr. Gas Lift Csg and DP, Shot 300 qts. 3325'-3476' After Shot Fl. IP 6.4 BO/hr.

WELL HISTORY BURLESON #1

The well was spudded on November 17th, 1937, and at total depth 270' the same day, 247' fo 13" OD casing was run 266'. Plug was drilled, and drilling was resumed on November 20th. Top of the Anhydrite was encountered at 1070' on November 22nd.

On November 25th, 2749' of 8-5/8" OD casing was run to 2767', 3 feet off bottom, and cemented with 900 sax of cement mixed with 4 tons of salt.

Yates sand was picked up at 2920' and began showing gas at a drilling depth of 2938'. The well unloaded itself at 2952', and another increase was found at 2990. The well was unloaded at TD 2992, and tested between drill ipip and casing. The gas gauged 1,140 MCF gas.

At total depth 3250, 3226' of 5½" 17# seamless casing was run to 3242' and cemented with 25 sax cement. The plug was drilled on December 15th, 1937 and the well was drilled in while circulating oil.

At TD 3476, the well tested 22 barrels of oil in 10 hours by gas lift between casing and drill pipe. The hole was then shot with 300 qts. nitroglycerine at 3325 to 3476 shooting with 2 qts. per foot, the hole having been loaded with oil.

After cleaning the well out to the bottom, tubing was run, 3439'1" of 2", tallied overall, set at 3429'9" 47' off bottom. The well then flowed an initial production of 155 barrels of oil with 260 MCF gas flowing through 30/64" choke on the tubing. Completed December 26, 1937

GEOLOGICAL POINTS

Elevation.....3189

Top of Anhydrite.....1070

Base Salt.....2650

Top of Brown Limestone.....2780

Top of Yates Sandstone.....2920

Total Depth.....3476

CASING RECORD

SIZE	AMOUNT	DEPTH	CEMENT
13"	247'	266	200
8-5/8"	2749'	2767'	900 / 4 tons salt.
5-1/2"	3226'	3242'	25
2"	3439'1"	3429'9"	

SPECIAL TESTS

TYPE	DEPTH	RESULTS
Drill pipe & casing	2767-2992	1,140 MCF gas
Gas lift between drill pipe & casing	3242-3476	22 barrels oil in 10 hrs.
Initial flow thru tubing, no packer after shot	3242-3476-	155 barrels of oil with 260 MCF gas thru 30/64" Choke.

DRILLING TIME IN MINUTES BURLESON #1

3252 to 3253	8	3306 to 3307	15
54	11	8	15
55	7	9	15
56	3	10	10
57	4	11	15
58	11	12	13
59	11	13	14
60	11	14	17
61	13	15	15
62	17	16	17
63	13	17	13
64	20	18	8
65	15	19	13
66	18	20	18
67	17	21	20
68	17	22	20
69	18	23	17
70	17	24	20
71	13	25	8
72	18	26	4
73	19	27	8
74	15	28	10
75	15	29	20
76	20	30	20
77	17	31	20
78	17	32	12
79	17	33	11
80	17	34	22
81	17	35	5
82	17	36	14
83	23	37	26
84	22	38	28
85	28	39	24
86	27	40	25
87	25	41	11
88	18	42	14
89	22	43	11
90	16	44	7
91	19	45	5
92	25	46	8
93	14	47	5
94	21	48	8
95	22	49	5
96	15	50	6
97	20	51	4
98	23	52	4
99	18	53	6
3300	15	54	5
1	9	55	6
2	14	56	7
3	20	57	7
4	15	58	18
5	15	59	25
6	15	60	26
		61	30

DRILLING TIME IN MINUTES BURLESON #1

3361 to 3362	25	3415 to 3416	23	3472-73	10
63	15	17	12	73-74	11
64	22	18	7	74-75	23
65	13	19	2	75-76	23
66	4	20	4		
67	2	21	9		
68	5	22	25		
69	4	23	21		
70	4	24	24		
71	16	25	28		
72	25	26	27		
73	32	27	26		
74	25	28	27		
75	10	29	28		
76	10	30	25		
77	15	31	24		
78	13	32	27		
79	15	33	28		
80	14	34	26		
81	23	35	21		
82	23	36	3		
83	6	37	5		
84	13	38	4		
85	16	39	5		
86	18	40	12		
87	17	41	6		
88	17	42	6		
89	20	43	5		
90	5	44	3		
91	4	45	9		
92	4	46	13		
93	4	47	9		
94	4	48	8		
95	4	49	20		
96	5	50	7		
97	5	51	5		
98	5	52	8		
99	5	52	12		
3400	5	54	14		
1	2	55	15		
2	1	56	16		
3	2	57	17		
4	1	58	15		
5	1	59	8		
6	3	60	14		
7	3	61	5		
8	3	62	3		
9	14	63	2		
10	19	64	1		
11	23	65	9		
12	20	66	13		
13	22	67	13		
14	28	68	14		
15	17	69	10		
		70	10		
		71	20		
		72	19		

WELL EQUIPMENT AT HERSCHBACH #I BURLESON

CELLAR CONNECTIONS

1 boarded cellar
1 christmas tree including:
  1 300# Wescott choke
  2 2x6 nipples
  1 2x12 nipple
  1 2" steel tee
  1 2x½ swage
  1 2" 3000# Wescott valve
  1 2" ups x 2" reg swage
  1 5½"x 2" Cameron 4000# tbg head
  1 4x½ hydralic swage
  1 2" 3000# Wescott valve
1 5½ x 18" nipple
1 5½ x 8-5/8" Rector head
2 3x8 hydralic nipples
2 3" 3000# Wescott valve
1 3x2 swage
1 3x8 nipple
2 3" tie down clamps
2 4' 7/8" tie down rods
1 8-5/8x12 nipple
1 8-5/8x 13" Rector head
1 3x2 swage
1 2" 3000# Wescott valve
1 13" casing clamp
1 3x8 nipple
1 3" std tee
1 3x2 swage
1 2" collar
1 2x6 nipple
1 2" hvy maleable tee
3 maleable ells
1 3x2 nipples
1 2" Wescott choke
1 2" maleable union
1 2x12 nipple
1 2x6 nipple
1 2" steel ell
1 2x½ swage
1 2x8 nipple
1 2" collar
~~1 xx2"~~

TANK BATTERY

2 200 bbl Nat'l Welded tanks complete with stair & walk

SEPARATOR

1 200# Nat'l flow valve & gas valve complete separator
1 set gauge glass connections
1 4x12 nipple
1 3x2 swage
1 2" collar
1 2x10 nipple
1 2" clip gate
3 std 2" bull plugs
1 2" LP Nat'l pop valve
1 4" std bull plug
1 3/4" std bull plug

VENT LINE

1 4" all-thread nipple
1 4" flange union
4 4" std ells
7 joints 4" pipe, 280'
1 4x4 nipple
1 4" Nat'l screw back pressure valve
1 4" collar
1 4x6 nipple

FLOW LINE

1 4x3 swage
860' 3" line pipe, 43 joints
1 3x2 swage
2 3" std tees
1 3" std bull plug
1 3" heavy maleable tee
2 3x8 nipples
2 3" x 20' risors
4 3" std ells
4 3x3 std nipples
2 3x4 nipples
2 3" 2000# hammer unions
2 3" 125# Wescott clip gates
2 3x4 swages
2 3" std ells
1 3x3 nipple
2 3" steel hammer unions

PIPE LINE OUTLET

2 4"x6" std nipples
2 4" lock stops

(sizes in inches unless shown otherwise)

WELL EQUIPMENT, BURLESON #1

TANK VENT LINE

2 3x4 std swedges
2 3" std ells
1 3x5 nipple
1 3" grnd jt flange union
24' 3" pipe

TANK BLEEDER

200' 2" pipe
3 2x4 nipples
1 2x6 nipple
2 2" lock stops
4 2" std ells
2 2" std flange unions
1 2" std tee
2 2x8 nipples
1 2x6 nipple
1 2x4 nipple
1 2x10 nipple

TANK FENCE

4 2" x 5' pipe posts
1 Roll barbed wire
1 archway, 2" pipe
13 L iron posts

WELL FENCE

4 2" x 5' pipe posts
1 roll barbed wire
1 archway, 2" pipe
5 L iron posts

(sizes in inches unless shown otherwise)

CASING RECORD AT BURLESON #1

Size	Length	depth	Cement
13"	247	266	225
8-5/8"	2749	2767	900 & 4 tons salt
5½"	3225	3242	25
2"	3430	3439	

Note: 2-1-40, One Nixon Gas lift System complete with mast, turbine, hoist, unloading valve, bottom valve, and standing valve.

BURLESON LEASE, N"¼ - 8-25-37

Herschback Drilling Co., Republic Bank Bldg., Dallas	27/64 WI
Western Gas Co., 10th Floor, Bassett Tower, El Paso	27/64 WI
Amerada Pet. Corp., Box 2040, Tulsa, Okla.	2/64 ORI

F.M.Burleson & Naomi Burleson,Box 683, Lubbock	36/128 of 1/8 RI
Argo Oil Corp., 1st Nat'l Bank Bldg. Denver, Colo.	56/128 of 1/8 RI
E. A. Fariss,511 Ramsey Tower,Oklahoma City, Okla.	20/128 of 1/8 RI
Bulbertson & Irwin Inc.,Box 1071,Midland,Tex.	6/128 of 1/8 RI
G.R.Henson,911 Commercial Bldg.,Shreveport, La.	4/128 of 1/8 RI
G.H. Wilson,510 West Rusk, Marshall, Tex.	2/128 of 1/8 RI
Paget Cady, 37 E. Division St., Chicago, Ill.	1/128 of 1/8 RI
E.W.K.Andrau, 2109 Kingston, Houston,Tex.	1/128 of 1/8 RI
Aletta S. Root,70 E. Walton Place, Chicago, Ill.	1/128 of 1/8 RI
Peter Connor, 435-5th Ave., Chula Vista, Calif.	1/128 of 1/8 RI

WESTERN GAS CO. BURLISON # 2

WELL INFORMATION

Casing Record	12½" - 255 - 125 sax 8 5/8" - 2744 - 700 sax 5½ - 3236 - 20 sax
Special Equipment	None
Tubing Record	2" - 3458'

GEOLOGICAL INFORMATION

Elevation	3168
Top Anhydrite	1090
Base Salt	
Top Brown Lime	2730
Top Yates Sand	2860
Gas Shows	2910-46 3,000 MCF, inc at 3066 to 4,000 MFC, 3071-94 16,000 MCF
Total Depth	3467'
Oil Zones (Drilling Time & Samples)	3322-38 3343-50 3343-50 3382-90 3449-55 3459-67
Drilling Time	Attached
Special Tests	None

GENERAL INFORMATION

Royalty Division	None
Accumulated Prod. to January 1, 1940	5,449 bbls.
Initial Prod.	Fl. Natural 1½ BO/hr, Shot 220 qts. 3357-3467, After Shot Fl., I.P. 5.4 BO/hr.

HERSCHBACH DRILLING CO. ET AL

#2 BURLISON

WELL HISTORY

Rigging up on the location was started on the 13th of June, 1939 , with one crew working eight days, three crews working one day. Drilling then commenced on June 22, 1939.

On June 23, 1939, 237'10" of second-hand 13" pipe was set at 255'10", and was cemented with 175 sax of cement. Nippling up was started on June 24th, and the shut-off tested, and the plug drilled on June 25th with an 11" bit.

An 11" hole was drilled to 2750' where casing was run. On July 4, 1939, 2728'11" of 8 5/8" casing was set at 2744'11" and was cemented with 700 sax. On July 9th the plug was drilled out of the pipe with a 6-3/4" bit and oil was used to replace the water as drilling medium.

On July 11 a show of gas was encountered at 2910-2945, and at total depth 2945 was gauged. This gas tested 3,000 MCF with no oil. On July 14 the well was again tested at total depth 3023', and gauged 3,000MCF gas with no oil, at total depth 3066 the gas gauged 4,000 MCF and no oil.

On July 16, at total depth 3071', the well unloaded and was tested. It gauged 16,000 MCF of gas with 250 lbs. back pressure and a spray of oil. The rock pressure was 1250 lbs. The well was then drilled to 3121 and testing was started. The gas cut off the connections and operations were suspended to kill the well and replace the connections.

On July 22 and 23, the well was killed using 770 sax of lime dust and 36 sax of Aquagel. On the 24th tubing was started into the well but would not reach bottom. The well was then cleaned out, and tubing re-run on the 26th to 3121', with a 5½" packer at 3097', perforations below the packer. Thre test showed a small amount of gas with no oil. Salt water was then used to displace the mud and the well was deepened to 3234'.

On July 31st, 2" tubing was run to total depth 3234', with a packer at 3135' and perforations below the packer. The well was then swabbed dry and showed a small amount of gas with no oil.

At total depth 3250', 3212' of 5½" casing was set at 3226' and cemented with 20 sax. The plug was tested on August 10th and drilled out with a 4-3/4" bit, using oil to displace the salt water as drilling fluid.

On August 12th, the well was tested through the casing with drill-pipe in the hole by injected gas, this test showed ½ BO/hr.

The well was then deepened to 3467' and on the 14th the well was kicked off by input gas and flowed 1½ BO/hr. natural.

The well was loaded with oil and on the 16th was shot with 220 quarts of nitroglycerine from 3357 to 3467, with a 135' gravel tamp above the shot. The well unloaded after the shot and then bridged at 3267'. The bridge was drilled out and the hole cleaned to 3467' total depth of the well. 2" tubing was then run to 3458'.

After the well unloaded through the tubing it was allowed to flow three hours, and then was gauged flowing 5.4 BO/hr on August 18, 1939.

FORMATION POINTS

Elevation	3168'	L & S
Top Anhydrite	1090	
Base Salt		
Top Br. Lime	2730	
Top Yates	2860	

OIL PAYS

3371-3390 3456-3467

GAS PAYS

2910-46 (Yates) 3,000 MCF, 3052-66 (L.Yates) 1,000 MCF (est.), 3070-93 (Queens), 16,000 MCF w/250# B. Pr.

TESTS

(1). 2910-46, 3,000 MCF gas no oil.

(2). @T.D. 3023', 3,000 MCF gas no oil.

(3). @ T.D. 3066', 4,000 MCF gas no oil.

(4). @ T.D. 3071', 16,000 MCF gas, spray of oil, Back-Pressure 250#, shut in Pr. 1250#.

(5). @ T.D. 3121', 2" tubing with packer 3097 perforations below, small gas no oil.

(6). @ T.D. 3224', 2" tubing with packer 3125, perforations below, small gas no oil.

(7). 3226-3401, small gas, 1/2 BO/hr.

(8). T.D. 3467, Natural small gas 1½ BO/hr.

(9). T.D. 3467', After shot, Fl. I.P. 5.4 BO/hr fourth hour of four hour test, no estimate on gas.

CASING & TUBING RECORD

SIZE	AMOUNT	DEPTH	CEMENT
12½"	237'10"	255'10"	100
8 5/8"	2728'11"	2744'11"	700
5½"	3212'0"	3226'0"	20
2" Tubing	3454'0"	3458'0"	--

DRILLING TIME, BURLISON #2

DEPTH	MING	DEPTH	MIN.	DEPTH	MIN.	DEPTH	MIN.
3216		3261	10	3308		3356	
17	19	62	13	09	10	57	25
18	13	63	12	10	13	58	25
19	18	64	18	11	15	59	20
20	20	65	12	12	10	60	35
21	21	66	14	13	9	61	40
22	20	67	8	14	17	62	17
23	13	68	6	15	19	63	13
24	19	69	4	16	17	64	17
25	16	70	4	17	15	65	18
26	20	71	8	18	22	66	20
27	19	72	11	19	20	67	19
28	21	73	13	20	13	68	16
29	19	74	16	21	10	69	18
30	10	75	18	23	9	70	18
31	5	76	15	24	5	71	21
32	8	77	15	25	7	72	12
33	22	78	15	26	7	73	9
34	19	79	17	27	7	74	6
35	15	80	15	28	7	75	9
36	10	81	13	29	10	76	6
37	10	82	20	30	13	77	6
38	20	83	17	31	7	78	6
39	17	84	30	32	6	79	8
40	18	85	28	33	6	80	6
41	15	86	27	34	6	81	9
42	20	87	13	35	5	82	7
43	15	88	13	36	6	83	7
44	11	89	13	37	8	84	5
45	14	90	22	38	8	85	4
46	15	91	14	39	25	86	6
47	15	92	28	40	15	87	7
48	17	93	26	41	13	88	8
49	15	94	29	42	12	89	9
50	13	95	36	43	13	90	11
51	12	96	36	44	5	91	26
52	18	97	42	45	24	92	30
53	24	98	16	46	4	93	30
54	19	99	6	47	13	94	28
55	23	3300	3	48	10	95	40
56	18	01	7	49	7	96	22
57	22	02	13	50	5	97	14
58	20	03	47	51	8	98	11
59	20	04	60	52	11	99	7
60	17	05	60	53	12	3400	14
		06	12	54	8	01	21
		07	18	55	12	02	26
		08	12	56	28	03	14
					15		

DRILLING TIME BURLISON # 2

DEPTH	MIN.
3403	
04	30
05	27
06	25
07	20
08	12
09	11
10	17
11	15
12	15
13	15
14	15
15	15
16	9
17	15
18	16
19	25
20	13
21	9
22	17
23	23
24	18
25	18
26	20
27	15
28	10
29	14
30	23
31	10
32	8
33	17
34	14
35	19
36	10
37	10
38	13
39	17
40	20
41	19
42	14
43	19
44	18
45	18
46	13
47	11
48	20
49	21
50	

DEPTH	MIN.
3449	
50	7
51	8
52	15
53	13
54	9
55	9
56	10
57	12
58	11
59	11
60	4
61	3
62	4
63	25
64	2
65	2
66	3
67	2
68	2
69	4
70	6

Total Depth, Steel line correction 3470 equals 3467

WELL EQUIPMENT AT BURLESON #2

WELL CONNECTIONS

1 13x12 nipple
1 13x 7-5/8 Rector head
1 3" Ex heavy bull plug
1 3x2 Ex heavy swage nipple
1 2" 300# Hughes gate
1 7-5/8 x 8 nipple
1 7-5/8 x 5½ Rector head
2 3x8 hydralic nipple
2 3x6 Ex heavy nipple
2 3" 8th 3000# WKM gate
2 sets 3" clamps,7/8x4x26
2 1¼ x 56 De bolts for slamps
1 5½ x 7 swage nipple
1 5½x10 nipple
1 5½ 3000# Hughes gate
1 7" Type T 16B 2000# OCT tubinghead complete
2 4x2 hydralic swage nipple
3 2" 3000# WKM gate
2 2x½ hydralic swage nipple
3 ½" Wlwth all-steel needle valves.
1 2" 8th x 2" 10th seamless nipples
1 2x10 Ex heavy nipple
1 2x8 Ex heavy nipple
1 2" 3000# OCT Series T 108 all-steel tee
1 set 2" tubing hold-down clamps with Stacy boomer & Chain
1 2" Hughes choke

FLOW LINE CONNECTIONS

1 2x10 regular nipple
1 2x21 reg nipple
1 2" Heavy maleable ell
1 jt 2" pipe, 22'10", 1800# test
24 jts 3" line, 557'6"
1 3x2 Ex heavy swage nipple

FENCE AROUND WELL

4 2" x 5' pipe posts
4 L iron posts

SEPARATOR CONNECTIONS

4 3"mHvy maleable ells
1 3x4 nipple
2 4x3 swage nipples
1 4" Ser. 30 Vanstone bolt type flange unions
1 3x24 nipple
1 Separator,built complete by EPNG
1 2" 250# pop valve
1 2" std collar
1 2x4 std nipple
1 2" Lunk gate valve
1 4x4 nipple
1 4" collar
1 3" collar
1 3x12 nipple
2 3" std ells
1 3x6 nipple
1 4" 200# BS&B oil valve comp.,#1595
1 3x6 nipple
5 jts 3" vent line, 112'3"
3 4x3 regular swages
1 4" maleable tee
1 4" bull plug
1 4" x 12' risor pipe
1 4x8 nipple
1 4x3 welded swage (home-made)
2 3" ells
1 3x3 nipple
2 3" close nipple
1 3" OJC check valve
1 4" back-pressure valve
3 2" ells
2 2" tees
2 2" unions
2 2x6 nipples
1 2x10 nipple
1 2x8 nipple

(Sizes in inches unless otherwise specified)

WELL EQUIPMENT AT BURLESON #2

TANK CONNECTIONS

2 500 bbl Nat'l bolted tanks
107'6" of 3" pipe
4 3" common tees
4 3" hdl bar unions
2 3" bull plugs
2 3" ells
1 3x12 nipple
1 3x6 nipple
1 2" Wescott gate valve
2 4" Welworth stops
2 4x12 nipples
2 3x6 nipples for bleeder lines
2 3" collars
2 3" ells
2 3x2 swages
2 2" Crane stops
40' 2" line pipe, bleeders
2 2" Maleable ells
1 2" maleable tees
1 2" common lip union
1 2x8 nipple
4 3" Ells
5 3x3 nipples
2 3" Walworth stops
3 2" hdl bar unions
2 4x3 swage nipples
2 3" common tees
2 3" bull pligs
2 3x6 nipples
35' 3" pipe on top of tanks
1 2x3 swage
1 2x3 nipple
1 2" lip union

CASING RECORD AT BURLESON #2

Size	Amount	Depth	Sax Cement
13"	237'10"	255	175
8-5/8"	2728'11"	2744	700
5½"	~~3454~~'3212'	~~3458~~ 3226'	20
2" Tbg.	3454	3458	less threads

PETITIONERS' EXHIBIT NO. 4

"PRODUCTION RECORD
REPRESENTING UNIT
IN LANGLIE FIELD, NEW MEXICO

ANDERSON PRICHARD	Jal	1	27	short
"	Jal	2	68	short
"	Langlie	1	6444	short
"	Langlie	2	40	short
"	Langlie	3	59	short
"	Langlie	4	16	over
"	Stuart	3	7428	short
"	Wells	1	631	over
"	Wells	2	631	over
CLAY DRILLING CO	Burleson	1	216	over
"	Burleson	2	614	short
STANOLIND OIL & GAS CO.	Langlie A	1	1072	short
"	Langlie A	2	393	short
TOTAL			14,651	SHORT

ANDERSON-PRICHARD OIL CORPORATION
Wells No. 2
5-25-37

	ALLOWABLE		RUNS		OVER	SHORT	TOTAL
TO 8-1-39							..320
AUGUST	784	25.3	597	19.3		187	
SEPTEMBER	1260	42	1435	47.8	175		
OCTOBER	1488	48	1677	54.1	189		
NOVEMBER	1380	46	1616	53.9	236		
DECEMBER	1395	45	1372	44 2		23	
1940 JANUARY	1240	40	1331	42 9	91		
FEBRUARY	1363	47	1349	46 5		14	
MARCH	1488	48	1487	48		1	
APRIL	1380	46	1360	45 3		20	
MAY	1302	42	1227	39 6		75	
JUNE	1230	41	1163	38 8		67	
JULY	1209	59	1240	40	31		
AUGUST	1147	37	1761	56 8	614		
SEPTEMBER	1050	35	1065	35 5	15		
OCTOBER	1147	37	1134	36 6		13	
TOTAL	18,863		19,814		1,351	400	-320
GRAND TOTAL							OVER... 631

STANOLIND OIL & GAS COMPANY
Langlie A-2
9-25-37

TO 8-1-39	ALLOWABLE	RUNS	OVER	SHORT	TOTAL
AUGUST	288 9⅜	117 3⅜		171	
SEPTEMBER	525 17½	597 19⅜	72		
OCTOBER	620 20	348 11⅛		272	
NOVEMBER	450 15	489 16⅜	39		
DECEMBER	465 15	347 12¼		91	
1940 JANUARY	496 16	517 16⅞	21		
FEBRUARY	464 16	579 20	115		
MARCH	496 16	347 11⅛		149	
APRIL	60 2	486 16⅛	426		
MAY	496 16	446 14⅜		50	
JUNE	480 16	205 6⅜		275	
JULY	310 10	310 10			
AUGUST	310 10	236 7⅜		74	
SEPTEMBER	300 10	303 10⅛	3		
OCTOBER	465 15	478 15⅜	13		
TOTAL	6,225	5,832	689	1,082	
GRAND TOTAL					SHORT...393

STANOLIND OIL & GAS COMPANY
Langlie A-1
9-25-37

	ALLOWABLE	RUNS	OVER	SHORT	TOTAL
TO 8-1-39					
AUGUST	320 10 3/5	241 7 8/9		79	
SEPTEMBER	825 27 5/9	663 22 1/9		162	
OCTOBER	930 30	396 12 8/9		534	
NOVEMBER	600 20	512 17 1/9		88	
DECEMBER	620 20	374 12 1/9		246	
1940 JANUARY	279 9	445 14 4/9	166		
FEBRUARY	261 9	460 15 7/9	199		
MARCH	279 9	347 11 2/9	68		
APRIL	90 3	725 24 2/9	635		
MAY	1302 42	1118 36		184	
JUNE	1230 41	464 15 5/9		766	
JULY	620 20	620 20			
AUGUST	620 20	522 16 8/9		98	
SEPTEMBER	600 20	603 20 1/9	3		
OCTOBER	620 20	634 20 4/9	14		
TOTAL	9,196	8,124	1,085	2,157	
GRAND TOTAL					SHORT...1072

CLAY DRILLING COMPANY
Burleson No.2
8-25-37

	ALLOWABLE	RUNS	OVER	SHORT	TOTAL
TO 8-1-39					
AUGUST					
SEPTEMBER	620 21	842 28 1/2	212		
OCTOBER	1488 48	1657 53 1/4	169		
NOVEMBER	1380 46	1304 48 5/8		76	
DECEMBER	139545	1312 42 3/8		83	
1940 JANUARY	1240 40	1122 36 1/4		118	
FEBRUARY	638 22	520 17 2/8		118	
MARCH	1488 48	1541 49 7/8	53		
APRIL	1380 46	1400 46 7/8	20		
MAY	1302 42	1027 33 1/4		275	
JUNE	1230 41	1210 40 3/8		20	
JULY	1934 62 1/2	2050 66 1/4	116		
AUGUST	1147 37	1200 38 7/8	53		
SEPTEMBER	1050 35	450 15		600	
OCTOBER	1147 37	1200 38 7/8	53		
TOTAL	17,449	16,835	676	1,290	
GRAND TOTAL					SHORT.....614

CIA Y DRILLING COMPANY
Burleson No. 1
8-25-37

	ALLOWABLE		RUN		OVER	SHORT	TOTAL
TO 8-1-39							-3886
AUGUST	784	25.3	974	31.4	190		
SEPTEMBER	1260	42.0	1107	36.9		153	
OCTOBER	1488	48.0	1442	46.5		46	
NOVEMBER	1380	46.0	1728	57.6	348		
DECEMBER 1940	1395	45.0	1560	50.3	165		
JANUARY	1240	40.0	1345	43.4	105		
FEBRUARY	957	33.0	650	22.4		307	
MARCH	1488	48.0	1420	45.8		68	
APRIL	1380	46.0	1446	48.2	66		
MAY	1302	42.0	1300	41.9		2	
JUNE	1230	41.0	1175	39.2		55	
JULY	1615	52.0	1322	42.6		293	
AUGUST	1147	37.0	1217	39.2	70		
SEPTEMBER	1050	35	4570	152.3	3520		
OCTOBER	1147	37	1709	55.1	562		
TOTAL	18,863		22,965		5,026	924	-3886
GRAND TOTAL							OVER...216

ANDERSON-PRICHARD OIL CORPORATION
Wells No. 1
5-25-37

	ALLOWABLE		RUNS		OVER	SHORT	TOTAL
TO 8-1-39							-708
AUGUST	784	25.3	597	19.3		187	
SEPTEMBER	1260	42	1435	47.8	175		
OCTOBER	1488	48	1677	54.1	189		
NOVEMBER	1380	46	1616	53.9	236		
DECEMBER	1395	45	1372	44.3		23	
1940 JANUARY	1240	40	1331	42.9	91		
FEBRUARY	1363	47	1349	46.5		14	
MARCH	1488	48	1487	48.0		1	
APRIL	1380	46	1360	45.3		20	
MAY	1302	42	1227	39.6		75	
JUNE	1230	41	1163	38.8		67	
JULY	1209	39	1240	40.0	31		
AUGUST	1147	37	2149	69.3	1002		
SEPTEMBER	1050	35	1065	35.5	15		
OCTOBER	1147	37	1134	36.6		13	
TOTAL	18,863		20,202		1,739	400	-708
GRAND TOTAL							OVER....631

ANDERSON-PRICHARD OIL CORPORATION
Stuart No. 3
9-25-37

	ALLOWABLE		RUNS		OVER	SHORT	TOTAL
TO 8-1-39							-3538
AUGUST	784	25.3	180	5.8		604	
SEPTEMBER	1260	42	1173	39.1		87	
OCTOBER	1488	48	1266	40.8		222	
NOVEMBER	1380	46	1216	40.5		165	
DECEMBER 1940	1395	45	1384	44.6		11	
JANUARY	1240	40	1091	35.2		149	
FEBRUARY	1363	47	1072	37		291	
MARCH	1488	48	1083	34.9		405	
APRIL	1380	46	1075	35.8		305	
MAY	1302	42	1077	34.7		225	
JUNE	1230	41	899	30.0		331	
JULY	1209	39	972	21.4		237	
AUGUST	1147	37	883	28.5		264	
SEPTEMBER	1050	35	883	29.4		167	
OCTOBER	1147	37	720			427	
TOTAL	18,863		14,973			3,890	-3538
GRAND TOTAL							SHORT.. 7428

ANDERSON-PRICHARD OIL CORPORATION
Langlie A-4
8-25-37

TO 8-1-39	ALLOWABLE		RUNS		OVER	SHORT	TOTAL -533
AUGUST	784	25.3	726	23.4		58	
SEPTEMBER	1260	42	1323	44.1	63		
OCTOBER	1488	48	1816	58.6	328		
NOVEMBER	1380	46	1617	53.9	237		
DECEMBER	1395	45	1540	49.7	145		
1940 JANUARY	1240	40	1156	37.3		84	
FEBRUARY	1363	47	1262	43.5		101	
MARCH	1488	48	1461	47.1		27	
APRIL	1380	46	1427	47.6	47		
MAY	1302	42	1269	40.9		33	
JUNE	1230	41	1189	39.6		41	
JULY	1209	39	1225	39.5	16		
AUGUST	1147	37	1172	37.8	25		
SEPTEMBER	1050	35	1055	35.2	5		
OCTOBER	1147	37	1174	37.9	27		
TOTAL	18,863		19,412		893	344	-553
GRAND TOTAL						OVER	16

ANDERSON-PRICHARD OIL CORPORATION
Langlie A-3
8-25-37

	ALLOWABLE		RUNS		OVER	SHORT	TOTAL
TO 8-1-39							-1044
AUGUST	784	25.3	718	23.1		66	
SEPTEMBER	1260	42	1314	43.8	54		
OCTOBER	1488	48	1799	58.0	311		
NOVEMBER	1380	46	1639	54.6	259		
DECEMBER	1395	45	1737	56.0	342		
1940 JANUARY	1240	40	1406	45.4	166		
FEBRUARY	1363	48	1245	42.9		118	
MARCH	1488	48	1733	55.9	245		
APRIL	1380	46	1369	45.6		11	
MAY	1302	42	1157	37.3		145	
JUNE	1230	41	1202	40.0		28	
JULY	1209	39	1194	38.5		15	
AUGUST	1147	37	1155	37.3	8		
SEPTEMBER	1050	35	1046	34.9		4	
OCTOBER	1147	37	1154	37.2	7		
TOTAL	18,863		19,868		1,392	387	-1064
GRAND TOTAL						SHORT.....	59

ANDERSON-PRICHARD OIL COMPANY
Langlie A-2
8-25-37

	ALLOWABLE		% RUNS		OVER	SHORT	TOTAL
TO 8-1-39							-1281
AUGUST	784	25.3	634	20.5		150	
SEPTEMBER	1260	42	1438	47.9	178		
OCTOBER	1488	48	1744	56.3	256		
NOVEMBER	1380	46	1484	49.5	104		
DECEMBER 1940	1395	45	1865	60.2	470		
JANUARY	1240	40	1574	50.8	334		
FEBRUARY	1363	47	1468	50.6	105		
MARCH	1488	48	1556	50.2	68		
APRIL	1380	46	1497	50.0	117		
MAY	1302	42	1211	39.1		91	
JUNE	1230	41	1057	35.2		173	
JULY	1209	39	1201	38.7		8	
AUGUST	1147	37	1155	37.3	8		
SEPTEMBER	1050	35	1046	34.9		4	
OCTOBER	1147	37	1174	37.9	27		
TOTAL	18,863		20,104		1,667	426	-1281
GRAND TOTAL						SHORT.....	40

ANDERSON-PRICHARD OIL COMPANY
Langlie No. 1
8-25-37

	ALLOWABLE		RUNS		OVER	SHORT	TOTAL
TO 8-1-39							-3157
AUGUST	784	25.3	212	6.8		572	
SEPTEMBER	1260	42	1240	41.3		20	
OCTOBER	1488	48	1714	55.3	226		
NOVEMBER	1380	46	1700	56.7	320		
DECEMBER	1395	45	1426	46.0	31		
1940 JANUARY	1240	40	812	16.2		426	
FEBRUARY	957	33	395	13.6		562	
MARCH	1395	45	601	19.4		794	
APRIL	1380	46	621	20.0		759	
MAY	1054	34	624	20.1		430	
JUNE	1230	41	977	32.6		253	
JULY	682	22	679	21.9		3	
AUGUST	682	22	673	21.7		9	
SEPTEMBER	660	22	625	20.8		35	
OCTOBER	682	22	683	22.0	1		
TOTAL	16,269		12,982		578	3,865	-3157
GRAND TOTAL						SHORT.....	6444

16,269
12,982
3,287

3,287

3865
- 578
3287

3157
3865
7022

7022
6444
578

ANDERSON PRICHARD OIL COMPANY
Jal No. 1
8-25-37

	ALLOWABLE		RUNS		OVER	SHORT	TOTAL
TO 8-1-39							-984
AUGUST 31	784	25.3	720	23.2		64	
SEPTEMBER 30	1260	42.0	1302	43.4	42		
OCTOBER 31	1488	48.0	1809	58.4	321		
NOVEMBER 30	1380	46	1639	54.6	259		
DECEMBER 31	1395	45	1671	53.9	276		
1940 JANUARY	1240	40	1631	52.6	391		
FEBRUARY 29	1363	47	1118	58.5		245	
MARCH 31	1488	48	1562	50.4	74		
APRIL 30	1380	46	1370	45.7		10	
MAY 31	1302	42	1259	40.6		43	
JUNE 30	1230	41	1210	40.3		20	
JULY 31	1209	39	1185	38.2		24	
AUGUST 31	1147	37	1155	37.3	8		
SEPTEMBER 30	1050	35	1047	34.9		3	
OCTOBER	1147	37	1142	36.8		5	
TOTAL	18,863		19,820		1,371	414	— 984
GRAND TOTAL							SHORT.....27

984 + 1398
414 — 1371
1398 — 27

ANDERSON-PRICHARD OIL COMPANY
Jal No. 2
8-25-37

	ALLOWABLE		RUNS		OVER	SHORT	TOTAL
TO 8-1-39							
AUGUST	784	25.3	716	23.1		68	-1217
SEPTEMBER	1260	42	1288	42.9	28		
OCTOBER	1488	48	1788	57.7	300		
NOVEMBER	1380	46	1629	54.3	249		
DECEMBER	1395	45	1804	58.2	409		
1940 JANUARY	1240	40	1804	58.2	564		
FEBRUARY	1363	47.9	1343	46.3		20	
MARCH	1488	48	1321	42.6		167	
APRIL	1380	46	1370	45.7		10	
MAY	1302	42	1217	39.3		85	
JUNE	1230	41	1219	40.6		11	
JULY	1209	39	1197	38.6		12	
AUGUST	1147	37	1109	35.8		38	
SEPTEMBER	1050	35	1038	34.6		12	
OCTOBER	1147	37	1169	37.7	22		
TOTAL	18,863		20.012		1,572	423	-1217
GRAND TOTAL						SHORT.....	68

1572
423
1995

1217
423
1640
1572
-68

CERTIFICATE

I hereby certify that the foregoing and attached one hundred twenty-six and one-half pages of typewritten matter are a true, correct and complete transcript of the shorthand notes taken by me on December 11, 1940, in Case No. 22, and by me ~~extended~~ into typewriting, together with copies of Exhibits Nos. 4 and 6, offered by Petitioners.

WITNESS my hand this 30th day of December, 1940.

Esther Barton